THE RELATIONSHIP BETWEEN INSTITUTIONAL CULTURE AND FACULTY PERCEPTIONS OF ONLINE LEARNING IN CHIROPRACTIC HIGHER EDUCATION

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BIOGRAPHICAL SKETCH

Keyonda Smith is a native of Camden, New Jersey and Tappahannock/King & Queen Northern Neck, Virginia. She earned a Bachelor of Science degree in Health Education, concentrating in Family Health and Master of Arts in Education, concentrating in Higher Education from Trident University International. Keyonda continued her post-graduate education, earning a professional Doctorate in Natural Health, concentration in Naturopathy, from Trinity School of Natural Health, where she conducted a quantitative study investigating biodynamic agriculture and its impact on urban food deserts.

Professionally, Keyonda is a Healthcare Researcher, University Professor, and Healthcare Instructional and Curriculum Designer in the Washington, D.C. metro area. As a University Professor, she introduced online hybrid and blended learning to non-traditional, allied health students and faculty. While working as an adjunct professor, and full-time doctoral student, Keyonda established Education Affiliates first academic program to prepare candidates for successful completion of its nursing entrance exam, required by accreditation. As a healthcare discipline Instructional Designer, Keyonda specializes in designing virtual courses, centered on increased student engagement. With experience in rapid e-learning development, learning management systems, and student engagement, she serves on several higher education and healthcare advisory boards and committees. To name a few, Keyonda is currently an active member of Maryland Distance Learning Association, Healthcare Associates of America, National Health Careers Association, and recently appointed as Maryland University of lntegrative Health's first Digital Learning Evidence-Based Healthcare Research Literacy Advocate.

DEDICATION

The author proudly dedicates this publication with the highest admiration and love to her sister, Elonda, and daughter, Emani "Mo." Without them, she would not have maintained the desire and motivation to continue her studies and progress when faced with extreme adversity. With the support and influence of her sister, Elonda, she was held accountable to follow through on her academic commitments. Keyonda knew Emani would want a mother of whom she could be proud and provided her with a constant drive to succeed. Experiencing rocky beginnings, she and Emani persevered and managed to remain strong by utilizing one another for continued support. Without Elonda and Emani, her accomplishments would not have been possible.

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ABSTRACT

Technological advances are challenging universities to explore alternative teaching paradigms to allow students an opportunity to learn in virtual environments. Particularly, healthcare higher education in disciplines such as chiropractic medicine offers minimal online education, with a limited presence in online learning innovation. The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education. This research study is significant as it sought to inform chiropractic higher education leadership of their institutional culture and its influence on faculty perceptions of online learning during planning and implementation of innovative strategic initiatives. To best meet the requirements of accrediting program agencies, inform leadership, and enhance future faculty and student's online experiences, this research study examined the relationships of these constructs. Conceptual perspectives of Christensen's (1997) Disruptive Innovation theory, Festinger's (1957) theory of Cognitive Dissonance and McNay's (1995) Institutional Culture Model provided the framework to investigate the research problem. Chiropractic higher education institutions faculty responses were utilized to measure the constructs of interest. Data were collected by use of Totaro et al. (2005) Faculty Perceptions of Distance Education, and Nauffal's (2004) Institutional Culture validated survey instruments. Data were collected from 131 faculty participants from six participating chiropractic institutions, and plausible relationships were assessed by use of the Statistical Software Package for Social Science (SPSS). Statistical tests supported one hypothesis and partially supported another. The research findings concluded collegium, enterprise, and corporate institutional culture typologies

were not significantly related to faculty perceptions of online learning. There was a significant, and negative, relationship between institutions with bureaucracy culture typology and chiropractic faculty respondent's perception of online learning. Demographic and covariables of gender, employment status, and ethnicity were statistically significant and related to faculty perceptions of online learning. Age and years working at their current institution were not statically related to faculty perception of online learning.

CHAPTER I: INTRODUCTION

Introduction

Universities and colleges throughout the nation and globally respond to nontraditional students' needs by offering online courses and programs. Technological advancement challenges faculty to adopt innovative instructional paradigms. This research study sought to examine how chiropractic higher education institution's culture influences faculty perceptions of online learning. Schwartz (2010) investigated chiropractic, in addition to acupuncture and massage therapy, faculty attitudes toward online learning. Schwartz study presented awareness into these unique areas of health care and endeavored to identify an explanation for its lack of online education presence. Furthermore, Glazer, Breslin & Wanstreet (2013) performed a study of faculty, of a virtual university, perceptions toward online learning, which revealed a positive correlation between online faculty perception and institutional culture. Glazer et al. identified a connection between institutional culture and online learning with increased faculty satisfaction and positive perceptions expressed when they believed their institution embraced a culture that endorsed online education or technology-based learning.

The available literature does not provide comprehensive insight into alternative and integrative health faculty perceptions of online learning, although these institutions are actively investigating and implementing online learning. This research study adds to the existing body of literature. Chiropractic areas of study are traditional in practice and learning, as they encompass eastern holistic medicinal principles, with therapies dating back thousands of years. Lee & Choi (2011) purported institutions operating on a traditional system of delivering instructional materials will require an essential transformation to occur on an institutional level. Further,

Owusu-Ansah et al. (2011) indicated that universities that uphold a traditional culture are least favorable to adopting innovative technologies as they experience increased limiting factors in its acceptance and use of online learning and educational technologies.

Chiropractic institutions shared integrative and complementary practices narrow the scope of the study's focus. To examine all integrative and complementary areas of practice, one would have to include massage therapy, yoga therapy, homeopathy, naturopathy, acupuncture, and oriental medicine. This research study focuses on chiropractic institutions as they best represent integrative and complementary higher education accredited higher education programs and faculty population. The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education. This study's knowledge gap was identified in chiropractic higher education leader's lack of complete awareness of faculty perceptions of online learning, resulting in the absence of an online education presence. Academic leadership's knowledge of faculty perceptions is essential, as recent studies have shown faculty perception as impactful to online learning experiences (Ho, 2010; Cheon, Lee, Crooks & Song, 2012; Venkatesh, Croteau & Rabah, 2014). This study's novelty was in the deficiency of scholarly research to guide chiropractic education institutions in identifying preferred and ideal faculty and institutional characteristics needed for high-quality online education.

This study is significant as it informs chiropractic higher education leadership of the influences that institutional culture and faculty perceptions of online learning can have during the planning and implementation of online programs. To best meet the requirements of accrediting program agencies and enhance future faculty and student's online experiences, this study examined the relationships of these constructs.

Problem Statement

Chiropractic students traditionally attend brick and mortar higher education institutions. Universities that train and degree highly kinesthetic areas of study, seeking to offer virtual degrees and achieve online programmatic success, are experiencing implementation challenges related to faculty buy-in and technological capabilities (Childs, Blenkinsopp, Hall & Walton, 2005; Jackson, Jones & Rodriguez, 2010; Masalela, 2011; Haidar, 2014; Windes & Lesht, 2014; Whitaker, 2015; Porter, Graham, Bodily & Sandberg, 2016). Petty (2013) asserted these challenges as responsible for healthcare disciplines trailing in online course offerings although Beachy (2012) reported 252 available online and hybrid nursing programs accredited by American Association of Colleges of Nursing (AACN) and National League for Nursing (NLN). Chiropractic's accrediting commission body, Council of Chiropractic Education (CCE), currently does not maintain a database of online degree programs. A search engine query returned no results for CCE accredited chiropractic online or hybrid degree programs. In 2013, CCE approved its member institutions the ability to execute online and distance education courses (CCE, 2013). Due to the kinesthetic nature of instruction and future practice, most healthcare centered fields of study deploy within brick and mortar campuses. The Council for Independent Colleges reported that institutions must provide qualified online faculty and meet comparable requirements as residential, brick and mortar, courses (Clinefelter & Magda, 2013). To achieve CCE institutional efficiency and effectiveness standards and improve online learning course delivery and satisfaction, it is essential for chiropractic higher education leadership to access preemptive information about their institution's culture and faculty perceptions of online education.

In chiropractic higher education, opportunities for online learning were difficult to locate, which warranted further investigation to identify if the culture of these institutions had any relationship to its online learning presence. Although this study was not seeking causality, recent research (Schneckenberg, 2009; Windes & Lesht's 2014) suggested institutional culture and stakeholder perceptions impact innovative technology adoption negatively. Czerniewicz & Brown (2009) purported McNay's (1995) collegium and enterprise culture characteristics as most suitable for the adoption of innovative educational technologies, due to the flexibility and variety of instructional pedagogies required to foster effective online learning. Despite this finding, chiropractic institutions continue to trail other healthcare disciplines, such as nursing. Hence, other factors must also contribute to chiropractic's slow adoption. Christensen & Eyring (2011) recognized online learning as a disruptive innovation due to faculty believing the inferior product, online learning, to replace its competition possibly, perceived higher quality traditional residential learning (Chen & Tseng, 2012; Mazoue, 2014), resulting in residential learning losing its top position within higher education. Festinger's (1957) theory of cognitive dissonance suggested that faculty experiences guide their perception of online learning. Cognitive dissonance theory purported faculty who are uncomfortable with online learning will attempt to reduce dissonance through rationalizing the uncomfortable event by accepting online learning as ineffective, despite the preponderance of evidence showing the opposite. Thus, faculty accustomed to traditional residential learning perceives online learning as inferior and ineffective.

Research has shown institution type's (Windes & Lesht, 2014) relationship to institutional culture (Czerniewicz & Brown, 2009; King & Boyatt, 2015; Al-Gahtani, 2016), online experience level (Conceição, 2006; Ho, 2010; Windes & Lesht, 2014), and faculty

perceptions (Jackson, Jones & Rodriguez, 2010; Masalela, 2011) to affect online learning programs. Windes & Lesht (2014) identified institutional types as community colleges, 4-year public and private institutions; their study revealed faculty perception as quantitatively correlated with their type of institution. Windes & Lesht (2014) findings revealed that 4-year institutions with traditional teaching methods are slower than community colleges or 2-year institutions in adapting to online education. Moreover, Windes et al. study suggested that institutions with traditional instructional delivery methods are using online education to 'broaden their sphere of influence in the educational market.' Windes et al. study did not examine whether a relationship exists between institutional culture and faculty perceptions. The relationship was significant, as these institutions are currently not present in online learning. If there was a relationship, future researchers could examine the extent of the relationships to remedy the situation. Chiropractic institutions are integrative and complementary in practice and scope. As several studies (Czerniewicz & Brown, 2009; King & Boyatt, 2015; Al-Gahtani, 2016) address higher education institutional culture, there are none to focus on complementary and alternative higher education institutions.

This study exam the relationship between chiropractic higher education institutional culture and faculty perceptions of online learning. Chiropractic care is integrative and complementary in practice and was this study's concentration to narrow its focus. To examine all integrative and complementary areas of practice, one would have to include massage therapy, yoga therapy, homeopathy, naturopathy, acupuncture, and oriental medicine. Several integrative and complementary programs are not accredited and lack in representing degree-granting higher education institutions faculty (Amri, Haramati, Sierpina & Kreitzer, 2012). This research study focused on chiropractic higher education as its faculty prepares students to work in environments

comprehensive of all integrative and complementary therapies. The literature supported institution types (Windes & Lesht, 2014) as related to institutional culture (Czerniewicz & Brown, 2009; King & Boyatt, 2015; Al-Gahtani, 2016) and faculty perceptions (Jackson, Jones & Rodriguez, 2010; Masalela, 2011). However, these studies have not examined chiropractic institutions, nor sought a relationship between its culture and faculty perceptions of innovative technology.

The Gap

Studies performed to measure teacher and faculty perceptions of online learning at brick and mortar institutions reveal relationships among institutional culture, faculty experience level, faculty perceptions of online learning and type of institution (Ho, 2010; Buabeng-Andoh, 2012; Perrotta, 2013; Phillip, 2013; Pepe, 2016). Moreover, several of these studies found brick and mortar teachers who conveyed negative perceptions of innovative technology use in their classrooms as less likely to implement its use (Ho, 2010; Pepe, 2016). According to Phillip (2013), K-12 teachers were not pedagogically implementing technology due to minimal professional development centered on its proper use and institutional pressure to concentrate more heavily on common core and yearly progress. Notably, this acknowledgment exhibits the importance of institutional type and experience level as an effective factor in teacher perceptions and continued use of technology in traditional classroom environments. In addition to Phillip's (2012) findings, Perrotta (2013) suggested teacher perceptions of technology use in traditional classrooms as affected more by institutional rather than individual characteristics. Zhu & Engels (2014) examined brick and mortar university faculty and student views of their university's organizational culture, reactions to instructional innovations regarding student-centered learning, collaborative learning and use of innovative educational technologies. Study results concluded

that organizational culture affected faculty views of innovative approaches to instruction, responsiveness to instructional innovations and perceived implementation level of educational innovations (Zhu & Engels, 2014).

A prevailing sentiment emerged when comparing relationships among institutional culture and type, faculty experience level, and faculty perceptions of online learning between brick and mortar teachers and faculty and online teachers and faculty. The available literature found relationships between institution types (Windes & Lesht, 2014), institutional culture (Czerniewicz & Brown, 2009; King & Boyatt, 2015; Al-Gahtani, 2016), online experience level (Conceição, 2006; Ho, 2010; Windes & Lesht, 2014), and faculty perceptions of online learning (Jackson, Jones & Rodriguez, 2010; Masalela, 2011). Additionally, recent literature highlights the importance of faculty perceptions of online learning and its influence on their willingness to provide brick and mortar course content in an online format (Barefield & Meyer, 2013; Reed, 2014; Chi, 2015). Schwartz (2010) examined attitudes toward, and feasibility of, online learning in the fields of acupuncture, chiropractic, and massage therapy. However, Schwartz (2010) did not investigate the construct of institutional culture within acupuncture, chiropractic, and massage therapy training institutions and its impact on faculty perceptions of online learning, even though research has shown these factors to affect online learning initiatives.

Organizational and institutional culture, experience level and its faculty perceptions influences innovative technology acceptance, online course delivery, and satisfaction (Massaro, 1993; Windschitl & Sahl, 2002; Chen & Tseng, 2012; Masalela, 2011; Stirman, Kimberly, Cook, Calloway, Castro & Charns, 2012; Terantino & Agbehonou, 2012; Haidar, 2014; Windes & Lesht, 2014; Whitaker, 2015). To build upon these studies, Czerniewicz & Brown (2009) investigated a relationship between higher education organizational policy, culture, and online

learning use. Their study found relationships between organizational policy and technology use for teaching and learning. Czerniewicz & Brown (2009) identified a positive correlation between organizational culture and faculty use of online learning. However, the authors did not investigate the constructs of faculty demographics or faculty years of experience with online learning.

Conversely, Windes & Lesht (2014) explored faculty perceptions of online learning based on institutional culture, institutional type, and faculty years of experience. The authors identified institutional types as community colleges, 4-year public and private institutions, revealing faculty with online teaching experience as more favorable toward online education across all institution types when compared to faculty without such experience. Windes et al. also found the institution's type (community colleges and 4-year public and private institutions) as quantitatively correlated with faculty perceptions. Lastly, their findings revealed that 4-year institutions with traditional teaching methods are slower than community colleges or 2-year institutions in adapting to online education. Moreover, Windes et al. study suggested that institutions with traditional instructional delivery methods are using online education to 'broaden their sphere of influence in the educational market.' Their study does not examine if the institution's culture influenced faculty perceptions.

A gap in the literature was identified in the absence of an investigation into plausible relationships between chiropractic institutional culture and its faculty perceptions of online learning. Therefore, the purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education.

Study Purpose

The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education among CCE accredited institutions. The significance of these relationships sought to inform chiropractic higher education leadership of their institutional culture and faculty perceptions of online learning usage to best meet the requirements of institutional accrediting bodies and enhance future faculty and students online learning experiences. The issues addressed in this study derived from a deficiency of scholarly literature centered on chiropractic's late adoption of online learning, its institutional culture, and add to the existing body of knowledge. Data were collected from an electronic survey distributed to participating chiropractic institution's faculty and analyzed with the Statistical Package for the Social Sciences (SPSS).

Research Questions

The following research questions guided this research study:

1. What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?
2. What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?
3. What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?
4. What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?
5. What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

CHAPTER II: LITERATURE REVIEW

Definition of Key Terms

Bureaucracy Culture. McNay's (1995) culture typology characterized by loose policy definition and tight control over implementation. It allows a degree of independence for individuals in the selection of goals and objectives within a context of precise rules for application.

Chiropractic. Procedures utilized to treat neuromuscular disorders through spinal manipulations. This therapeutic method accepts that the spine affects the nervous system and its misalignment causes pressure on the neurological tissue.

Collegium Culture. McNay's (1995) culture typology characterized by loose policy definition and loose control over implementation. It allows faculty the freedom to pursue university and personal goals unaffected by external control.

Corporate Culture. McNay's (1995) culture typology described as controlled with tight policy definition and tight control over implementation. Goals are achieved through restrictive methods.

Developmental Culture. Of Bergquist's (2013) four institutional culture typology, developmental culture characterizes institutions that promote ongoing learning and professional development for its faculty, staff, and administration.

Disruption. For consideration of this research study, disruption is the disturbance in normal operation. Christensen (1997) coined the term "disruptive innovation" to describe a product that enters the market and disturbs a process, procedure or replaces an existing product.

Dissonance. Commonly known as a psychological conflict that creates inconsistency in one's belief system and one's actions, Festinger's (1957) cognitive dissonance describes that when one experiences this mental conflict, they will try to reduce the inconsistency by rationalizing the event.

Enterprise Culture. McNay's (1995) culture typology described as clearly defined or tight central policy and loose control over implementation. Clear goals established for the institution; however, it allows considerable autonomy and independence in how they are achieved.

Institutional Culture. A convention of rudimentary understood expectations of how the world operates, shared by a population, which determines their perceptions, thoughts, feelings and to some degree their overt behavior (Schein, 2010, p. 11).

Perception. For this research study, faculty perception describes an individual's representation of a variety of content in true unity (Leibniz, 1989, p. 644).

Introduction

Traditional Chinese Medicine influenced the inception of chiropractic medicine. Peng, Wu, Atkins, Zwarentein, Zhu, Zhan & Yan (2014) performed a digital literature review to highlight the deficiencies and required future advances in Chinese Internet-based health education. Their exploration found a hopeful future for the further development of healthcare

education in China. Peng et al. recommended online prevention and promotion, surveillance, and social determinant courses for healthcare students, as upon graduation students are most likely continue their professional education by taking online courses.

Chiropractic higher education institutions in the United States have not progressed in online course offerings when compared to other healthcare majors. Nursing has significantly increased its online learning presence in offering entirely online, blended and hybrid program options for students. Recent studies found no statistically significant difference of student learning achievement and faculty effectiveness among online and residential nursing students (Button, Harrington & Belan, 2014; Lahti, Hätönen & Välimäki, 2014; Mitchell, Pilkington, Jonas-Simpson, Daiski, Cross, Johnston & Tang, 2016). Conversely, barriers and challenges are present in online learning for healthcare students. Childs, Blenkinsopp, Hall & Walton (2005) found obstacles in implementing online learning for health care faculty as the feel of being required to change, poorly designed educational packages, inadequate technology, lack of skills, need for a component of face-to-face teaching, and computer anxiety. The authors suggested addressing these challenges by involving faculty in the processes surrounding course development, implementation, and technology training (Childs, Blenkinsopp, Hall & Walton, 2005).

With the influx of online nursing education, the literature does not present any studies performed to examine nursing culture and its impact on, or relationship to, the growth of online learning. Education researchers have examined higher education institutional culture and its effect in online learning implementation and execution (Lee & Choi, 2011; Owusu-Ansah, Neill & Haralson, 2011), however, a lack of examining rich culture which envelopes specific areas of studies and its impact on their ability to embrace online learning needs further exploration.

Online learning has added new complexity to institutional culture as online learning is its institution, separate from the primary university by time and space. McNaught & Vogel (2006) postulated "a rise in the divisional/enterprise aspect of university culture" due to online learning and educational technology. Moreover, Terantino & Agbehonou (2012) study found that faculty who possessed positive perceptions of online learning; institutions must involve them in every aspect of online learning from strategic planning to instruction. Hence, an institution's culture has an impact on faculty perceptions of online learning. The literature review displays the synthesis between higher education institutional culture and faculty perceptions of online learning by beginning briefly with the origins of chiropractic therapy.

Origins of Chiropractic Therapy

The principles of integrative and complementary higher education institutions focus on mental health and well-being as a significant component and contributor to one's overall health outcomes and encompass evidence-based holistic wellness practices, as well as traditional eastern philosophies. Founded by Daniel David Palmer, chiropractic medicine began in 1895 (Meeker & Haldeman, 2002). Palmer asserted the source of diseases eliminated by use of one's hands which is where the term chiropractic originated. As in Greek, the words cheir means 'hand' and praktos means 'done,' resulting in the terming meaning treatment 'done by hand.' Throughout the evolution of chiropractic care, practitioners must often defend this practice by justifying its departure from fundamental principles of healthcare delivery. In 1905, Palmer opened the first chiropractic training institution, Palmer College of Chiropractic, which still operates today. It was not until 1974 that all states required licensure to practice chiropractic medicine.

Chiropractors treat neuromuscular disorders through spinal manipulations. The practice of chiropractic therapies acknowledges and support how the spine affects the nervous system, and its misalignment causes pressure on the neurological tissue. Chiropractic medicine is a component of integrative health, as practitioners often work complementary to conventional allopathic practitioners. Additionally, interdisciplinary practices, consisting of physical therapists and medical doctors, integrate chiropractors as a part of the medical team. Chiropractors earn a Doctorate and typically attend a 5-year graduate program. Controversy still exists today regarding the effectiveness of chiropractic medicine; however, it is gaining acceptance as a mainstream treatment option (Alcantara, Ohm & Kunz, 2009). Chiropractors are required to take a licensure exam and demonstrate clinical skills to practice.

Higher Education Institutional Culture

Typically, a university's leadership team determines the strategy utilized when deploying and enforcing organizational-wide initiatives. Institutions operating on a traditional system of delivering instructional materials will require an essential transformation to occur on an institutional level (Lee & Choi, 2011). The change of an institutions business practices often calls for the implementation of technological advances made available to the industry. Educational technology tools are an additional instrument often utilized in an institutions quest to improve overall institutional effectiveness. Lee & Choi (2011) suggest those who fully support advancements in educational technology, nationally and internationally, must lead universities that seek to remain competitive. According to Schein (1994), leaders profoundly influence a university's culture, and its faculty manages the culture. A university's culture affects its ability to adapt to change and address challenges. Therefore, the charge of efficiently preparing faculty for disruptive and forecasted changes caused by innovative technologies is up to its leaders.

Online learning initiatives are a strategic tool in bridging communities through synchronous and asynchronous networks. In a global environment, higher education institutions are calibrating their organizational structure and approach to deliver universal course instruction. Garrison (2011) maintains that a functional organizational structure consists of a clear vision, flexible strategic plan, collaborative leadership team, appropriate research and evaluation, and a considerable amount of communication (p. 116). Owusu-Ansah et al. (2011) argued universities that uphold a traditional culture are less conducive to the introduction of innovative technologies, experience limiting factors in its acceptance of online learning and instructional technologies. As flexibility is essential in an online learning environment, a university's organizational structure demands quick adaptions in a constantly changing atmosphere. Therefore, institutions that display traditional behaviors are learning to encompass the flexibility needed to remedy online program implementation stagnation issues (Koper, 2010).

Several institutional culture models are available to examine higher education institutions. Institutional culture models provide a conceptual framework to recognize and appraise a college or university's culture. Considering the institutional typology of a university is imperious when addressing strategic initiative implementation, institutional goal attainment, and leadership's decision-making method. There is not a one-size-fits-all model that applies to higher education institutions. Senior administration may possess leadership style characteristics that misalign with faculty and institutional culture. This dichotomy influences strategic implementation of innovation initiatives (Lee & Choi, 2011; Owusu-Ansah, Neill & Haralson, 2011). Birnbaum (1988) outlined institutional culture types as collegial, political, bureaucratic, anarchical and cybernetic, grounded in professional leadership hierarchy and organizational functioning. According to Birnbaum, collegial institutions practice shared power, bureaucratic

institutions function on a rational structure, political institutions operate on a top-down managerial system, anarchical institutions perceive organization members as autonomous units, and cybernetic institutions are predominately a combination of collegial, bureaucratic, political and anarchic positive characteristics (Nauffal, 2004).

Similarly, Bergquist (1992) agreed with three of Birnbaum's (1988) culture model in identifying collegial, managerial and negotiating culture types to exist among academic leadership. Bergquist's managerial culture is comparable to Birnbaum's bureaucratic culture type, as it purported the institution operates by strict rules and hierarchy. Additionally, Bergquist's' negotiating culture paralleled Birnbaum's (1988) political type, characterized by conflict, compromise, and bargaining among top-down leadership. However, Bergquist identifies an additional fourth culture type, developmental, as institutions that promote growth and professional development. The developmental culture type supports ongoing learning and professional development for its faculty, staff, and administration. To build on developmental cultures, Bergquist (2013) recently announced the inclusion of an additional culture type, virtual culture, due to the emergence of technology innovation and issues surrounding its adoption.

As perceptions and culture are impactful to initiative implementation, mainly when enforcing policy or introducing programmatic changes, those who possess the desire to adopt innovative technologies create an environment conducive to change taking place. In shaping a supportive environment, the proper allocation of resources required to implement innovative initiatives is necessary (Jung, 2011). Multiple studies (Jackson, Jones & Rodriguez, 2010; Omidinia, Masrom & Selamat, 2011; Singh & Hardaker, 2014; Aung & Khaing, 2015; Porter, Graham, Bodily & Sandberg, 2016) reveal the lack of proper resource allocation as a determining factor and primary driver in poor technology adoption in higher education. Further,

efficient online learning integration is contingent upon leadership's perceptions and visions, as opposed to faculty skill level (Pelgrum & Law, 2009), which supports the significance of McNay's (1995) culture model, as institutional culture mediates faculty actions, influences, attitudes, and beliefs (Chai, Hong & Teo 2009).

Table 1: McNay 4 Models of University Culture

	Loose Control	**Tight Control**
Policy Definition	Collegium Institution - Decision-making is consensual - Management style is permissive - Students seen as apprentice academics - Faculties main organizational units - Evaluation is by peer review - International community sets standards Bureaucracy Institution - Decision-making is ruled based - Style based on standard procedures - Students are statistics - University is the organizing unit - Evaluation based on audit procedures - Regulatory body sets standards	Corporate Institution - Decision-making is political and tactical - Style is charismatic and commanding - Students are customers - Focus on loyalty - Evaluation based on performance indicators - Standards related to institutional goals - Centralized Control within the institution Enterprise Institution - Decision-making flexible - Style is one of devolved leadership - Students are partners - Project team dominating unit - Evaluation based on achievement - Standards related to market strength
Strategic Implementation	Collegium Institution - Decision-making is consensual - Management style is permissive - Students seen as apprentice academics - Faculties main organizational units - Evaluation is by peer review - International community sets standards Enterprise Institution - Decision-making flexible - Style is one of devolved leadership - Students are partners - Project team dominating unit - Evaluation based on achievement - Standards related to market strength	Corporate Institution - Decision-making is political and tactical - Style is charismatic and commanding - Students are customers - Focus on loyalty - Evaluation based on performance indicators - Standards related to institutional goals - Centralized Control within the institution Bureaucracy Institution - Decision-making is ruled based - Style based on standard procedures - Students are statistics - University is the organizing unit - Evaluation based on audit procedures - Regulatory body sets standards

Institutional culture was outlined in McNay's (1995) model as based on the degree of 'tightness' and 'looseness' of two dimensions, policy definition, and control over implementation, with identifying four types of cultures: collegium, bureaucracy, enterprise, and corporate. McNay (1995) stated these cultures often coexist at some universities; however, the

balance and shifting of these culture types guide faculty actions and change implementation. As several models identify institutional culture and its impact on change implementation, researchers (Lueddeke, 1999; Mora, 2001) detailed McNay's (1995) model as a resource in classifying the necessity for process driven changes in attitudes and structures to achieve organizational improvements and an effective model in describing structured relationships within university systems. These relationships rely on lateral and reciprocated communication to allow rapid response to critical and complex conditions.

Today, higher education is an expectation in its competitive and global markets. Taylor, McGlynn & Luter (2013) agreed with McNay (2006) in universities experiencing increased student enrollment, which demands a dramatic shift of institutional governance. Davies (1997) suggested the desirable policy direction of higher education institution as McNay's (1995) enterprise classification. An enterprise institution represents broad policy control and openness to external influences (p. 137). Additionally, Czerniewicz & Brown (2009) agreed with Davies (1997) in their identification of collegium or enterprise institutions as more suitable for the adoption of innovative educational technologies due to the flexibility and variety of instructional pedagogies required to foster effective online learning.

McNay's (1995) institutional culture model has been utilized as a framework in numerous studies (Nauffal, 2004; Bento, 2011; van der Velden, 2012; Lacatus, 2013) and provides this research study with a robust analytical comparative tool to classify chiropractic higher education institutional culture. This research study selected McNay's (1995) institutional culture type as a conceptual framework component as it categorized institutional culture based on structural organizational hierarchy. The available literature supporting Birnbaum (1988) and Bergquist's (1992) culture model predominately focuses on how individuals function in

leadership hierarchy, rather than organizations or institutions and according to Garrison (2011), higher education institutions should possess functional organizational structures and approaches to implement online learning efficiently.

Faculty Perceptions of Online Learning

Determining an online program's level of success is dependent upon the institution's goals, mission, and vision. With most of higher education institutions seeking to achieve revenue growth, the servicing of nontraditional students, retention improvements, space saving options, effective cost management, and improved student learning outcomes is monitored and measured (Bacow, Bowen, Guthrie, Lack & Long, 2012). When institutions recognize that they have not met predetermined benchmarks, the success of the online program is in question. Therefore, its leadership team is to examine obstacles and barriers that contributed to its failure.

Several scholarly studies regarding barriers in online programmatic success indicate faculty perceptions as significant to online learning implementation (Jackson, Jones & Rodriguez, 2010; Masalela, 2011) and education research scholars are seeking to understand what factors impact failed initiatives. Recent studies (Massaro, 1993; Windschitl & Sahl, 2002; Chen & Tseng, 2012; Masalela, 2011; Stirman, Kimberly, Cook, Calloway, Castro & Charns, 2012; Terantino & Agbehonou, 2012; Haidar, 2014; Windes & Lesht, 2014; Whitaker, 2015) revealed faculty actions and perceptions as influential to online learning program implementation. Familiarity with online learning technologies, proper online teaching practices and faculty prior experiences with online education are substantial to faculty perception (Jackson et al., 2010; Totaro, Tanner, Noser, Fitzgerald & Birch, 2005). Powell (2011) performed a qualitative case study of secondary schools in New Zealand and reported inadequate

technological infrastructure as a shared obstacle expressed by participating faculty. Researchers argued that universities lack the comprehensive tools to perform an adequate appraisal of technology implementation costs when planning and to initiate online education (Bartley & Golek, 2004). Undersupplied technological resources negatively affect faculty ability to instruct an online course, resulting in negative experiences and affecting their perception of online learning.

Online learning implementation in higher education focuses on technology adoption and instructional methodology. Critical issues identified at an institutional level result in improved student learning outcomes and program evaluation. Faculty are integral in ensuring student learning outcomes are met, thus if faculty rejects the adoption of innovative technology and instructional methods, student achievement is likely to decrease. Bacow, Bowen, Guthrie, Lack & Long (2012) argued that faculty should have as much control as possible over course materials in which they are to instruct. In their qualitative study, faculty expressed frustrations with online learning and its adoption as stemming from the absence of online instructional materials and fear of online programs replacing brick and mortar faculty and traditional instructional delivery. Bacow et al. (2012) recommended leadership to address these issues directly with faculty before programmatic implementation and course assignment. Additionally, faculty expressed the need to have as much academic freedom as possible, supporting Bacow et al. (2012) position on faculty control.

Online faculty typically instruct courses with limited supervision. Therefore, Owusu-Ansah, Neill & Haralson (2011) advised universities to approach online faculty as entrepreneurs, holding them accountable for student satisfaction. The authors also identified barriers to online learning faced by institutions as managerial, consequential, and course integration-related.

Furthermore, student satisfaction, faculty satisfaction, and course engagement were associated. Faculty who attempted to utilize online learning technologies unsuccessfully expressed a higher level of disinterest and mal-engagement (Schneckenberg, 2009), which was shown to negatively affect student perceptions of online learning (Akyol & Garrison, 2014). Recent studies also suggest faculty who report positive experiences as an online student, or instructor, are more likely to enroll, or instruct, future online courses (Conceição, 2006; Ho, 2010; Windes et al., 2014). Ho (2010) examined the intentional continued use of e-learning platforms, among university faculty, and discovered that attitude, in cooperation with satisfaction, toward online learning platforms greatly influenced a user's intention to continue using the online learning platforms. Findings indicated first-time online faculty, who exhibited a positive attitude and experience with the online platform, were positive in their intentional continued platform use. Further, faculty who identified with a negative attitude and experience were negative in their intended constant platform use. Windes & Lesht's (2014) study of faculty perceptions, based on their online teaching experiences and institutional type, revealed similar findings of faculty with no online instruction experience were least receptive to online education when compared to faculty with online instruction experience. With consideration to Ho (2010) and Windes et al. (2014) research, faculty online educational experiences influence their perceptions of online learning.

Similarly, student perceptions of online learning affected their acceptance of online learning, as demonstrated in Al-adwan & Smedley (2012) qualitative study. Al-adwan & Smedley examined the implementation of online learning at a Jordanian University. Their findings determined that students who were technologically disadvantaged not benefit from online learning activities. This negative perspective resulted in student resistance to information

and communications technologies (ICT), which are required to adequately achieve an online learning course's outcome (Venkataraman & Sivakumar, 2015). The evidence suggested that individuals exposed to technology tools in advance are more likely to report a positive experience with online learning. Therefore, properly training faculty before utilizing innovative technologies are more likely to report a positive online learning experience, resulting in their continued use of online technology as part of their instructional methodology. Subsequently, faculty who report negative experiences with online educational technology, are less likely to utilize it for future instruction.

Faculty current, personal, and professional use of technology indicates their likelihood of adopting educational technologies (Khatib, 2014). Levac, Clegg, Camden, Rivard & Missiun (2015) advised faculty, with requisite knowledge and skills to utilize technological tools, undergo an evaluation to identify their perception and attitude towards online learning. Faculty who are early adopters and involved in the planning and execution of innovative technologies are more likely to utilize the tools with a student-centered approach (Hargis, Cavanaugh, Kamali & Soto, 2014). Online instruction requires a student-centered teaching philosophy, as online learning requires a higher level of student autonomy. Hannafin, Hill, Land & Lee (2014) described a student-centered instruction as the "active participation" in developing one's skills and knowledge, based on faculty ability to integrate self-directed learning activities. The shift from teacher-centered instruction to student-centered instruction challenges faculty to employ a different set of skills (Hains & Smith, 2012). This paradigm suggested that faculty perceptions of their role in the learning environment affect their ability to adopt innovative educational technologies, which directly influences student's proficiency in accomplishing the course's learning outcomes (Jackson, Jones & Rodriguez, 2010). For example, online faculty assumes an

improper role, such as teacher-centered instructional practices, which hinders student's autonomy, resulting in students missing the opportunity for optimal knowledge attainment. Appropriately utilized educational technology tools can assist faculty in facilitating and guiding self-directed learning with the use of collaboration features and learning activities designed to encourage higher order thinking, course autonomy, and accomplish significant learning outcomes (Galy, Downey & Johnson, 2011).

Online learning presents challenges to faculty in their attempt to deliver traditional face-to-face content in an online learning environment. Conceição (2006) performed a phenomenological study investigating the meaning of the online teaching experience of college faculty when physical presence was absent. Two themes emerged from the study's findings: work intensity and reward. Faculty expressed their surprise at the increased level of work involved in designing and delivery of online courses. Additionally, faculty described their experience in developing and delivering the courses as rewarding and gratifying. As online learning requires student-centered instruction, faculty reported as having experienced a considerable amount of learning while teaching and was willing to instruct future online courses. The author purported that this partnership required faculty to view their role as the expert differently. Experiences of this nature changed their perception of online teaching, student-centered instruction, and enabled them to engage in activities outside of standard instructional pedagogy (Conceição, 2006).

Proper planning and institutional evaluation are at the forefront while executing online learning initiatives. Clearly identified policies that align with institutional goals provide operational guidance when determining strategic objectives. Although universities are aware of the need for online learning policies, there is often a breach of policy development and practice.

Gunn (2010) suggested that institutions include positive accountability processes, consisting of measurable goals when determining strategic intent. It is imperative that the communication of a university's strategic plan take place with all stakeholders. Institutions examined in Gunn's (2010) study identified participating universities as having deficient online learning visions and strategies, and for those institutions with a vision and strategy, the faculty was not aware. Therefore, its faculty viewed the initiation of online learning programs as a top-down decision. Masalela (2011) argued that a possible reason for faculty resistance was due to their sentiment and perception of being forced to instruct online, as they were not involved in the initial decision-making process. In a case study of the University of Botswana's online learning initiative, Masalela (2011) attributed its failed implementation to deficient technology training, institutional planning, measurable program evaluation metrics, and faculty commitment. Masalela's findings are apparent in the University of Cincinnati's growth. They reported an 85 percent completion rate for their online undergraduate program in 2008, compared to 76 percent reported for the previous year. Clark, Holstrom & Millacci (2009) credited University of Cincinnati's online program enrollment improvement to faculty involvement in course development and faculty who promoted online learning. Currie & Kilfoye (2010) studied Northeastern University and its online program's increased student enrollment and discovered its successes were likely due to repetitive reiteration of the institution's vision, identification of quality processes, utilization of faculty and student feedback to drive program and degree offerings, and acquiring appropriate tools to support quality online instruction and learning (Currie & Kilfoye, 2010).

Possessing the appropriate technological tools and faculty ability to implement those tools are dichotomous. Faculty professional development is a means to offer faculty continuing

education intended to enhance the knowledge and skills necessary to meet work associated performance metrics (Stein, Shephard & Harris, 2011). Course materials and the availability of course related information is a measurable element. Consequently, attitudinal characteristics are a consideration when determining faculty work performance (Michinov, Brunot, Le Bohec, Juhel & Delaval, 2011). Several studies (Boling, Hough, Krinsky, Saleem & Stevens, 2012; Rienties, Tempelaar, Van den Bossche, Gijselaers & Segers, 2011; Scott, 2013) have shown the efficacy of professional development activities as a method to improve faculty technology skills. The literature was mostly inconclusive of whether professional development changed faculty perceptions and beliefs of utilizing integrated educational technologies, student-centered learning, and online instructional intentions. To create an online learning environment, that is conducive to student-centered learning and successful pedagogical implementation, dedicated faculty with a positive attitude towards online learning is required (Michinov, 2011). Selim & Chiravuri's (2015) qualitative study found that online students of faculty with a positive view of online learning expressed a positive experience during the course. As faculty is fundamental in online learning adoption, adequate training and appropriate institutional resources for successful online instruction, in addition to a positive perception in support of online initiatives (Gamrat, Zimmerman, Dudek & Peck, 2014) is integral to achieve institutional online learning initiative goals.

The available literature provided evidence of online learning's impact on faculty perceptions. Moreover, research findings support faculty perception as being influenced by their level of comfort in adopting innovative technologies, new teaching methodologies and trusting their institution with providing suitable tools to support appropriate online instruction.

Conceptual Framework

The foundation for the conceptual framework to investigate three conceptual perspectives supported the relationship between chiropractic higher education institutional culture and faculty perceptions of online learning: Christensen's (1997) Disruptive Innovation theory, Festinger's (1957) theory of Cognitive Dissonance and McNay's (1995) Model of Institutional Culture. According to Christensen (1997), disruptive innovation is the process of an inferior idea or product initially situated at the bottom of the market that obstinately advances to the top, ultimately surpassing its competitors. The available literature supports disruptive innovation in higher education as a paradigm that has influenced faculty perceptions and attitudes toward online learning. Christensen's theory was related to this study as faculty and institutions have expressed the plausibility of online learning, an inferior product, replacing traditional residential learning (Chen & Tseng, 2012; Mazoue, 2014), losing its position within higher education (Windes & Lesht, 2014). Christensen spoke about disruptive innovation in higher education. He stated:

> "For most of their histories, traditional universities have had no serious competition except institutions with similar operating models. Now, however, there are disruptive, for-profit, competitors offering online degrees." (Christensen & Eyring, 2011)
>
> "Higher education is vulnerable to disruption due to the availability of online learning. It will take root in its simplest applications, and then just get better and better. Some will survive. Most will evolve into hybrid models. If you want to use new technology in an existing mainstream market, it has to be a hybrid." (Christensen, 2013)

Disruptive innovation is characteristically employed ground up; however, online learning in higher education is executed top down. Due to this atypical implementation strategy, leadership experiences knowledge and experience gaps. This gap occurs between leadership and their connection with its underserved population. Leadership's ability to obtain a comprehensive

understanding of the population's needs is integral, as it consequently affects faculty perception of the innovation's use.

Christensen's disruptive innovation theory has two classifications: Sustaining and disruptive. Sustaining innovation is an improvement to an existing product, while disruptive innovation takes over an entirely new market, with a lower price and gaining customers who otherwise would not have access. Christensen stated, "Disruptive innovations typically take advantage of 'asymmetries of motivation' by entering markets that incumbents are motivated to exit or ignore" (Christensen, 2003). Asymmetrical motivation envelopes the idea that although higher education institutions could have developed the requisite skills to compete successfully during the early days of a disruptive market, they chose not to. Therefore, institutions that were early adopters possess accumulated knowledge and resources, providing them with an essential advantage over late adopters.

Festinger's (1957) Cognitive Dissonance theory provided the second theoretical perspective for this study. Festinger's theory described that when individuals experience an uncomfortable inconsistency, it causes a psychological conflict. He conveyed that individuals reduce dissonance by changing their attitude in the direction determined by one's experience with the uncomfortable event. The individual will then attempt to minimize conflict by engaging in 'psychological work' to rationalize the inconsistency. According to Harmon-Jones (2012), "This psychological work characteristically focuses on supporting the cognition most resistant to change." Cognitive dissonance supported the research hypothesis as faculty experience level guides their perception of online learning. Faculty who possess limited or no online learning familiarity are more likely to experience cognitive dissonance, as exhibited in their perceptions of online learning. If the faculty is uncomfortable with online learning, Festinger's cognitive

dissonance theory proposes they will attempt to rationalize the ineffectiveness of online learning, despite the preponderance of evidence showing the opposite.

Festinger's theory of cognitive dissonance purported that while a new behavioral commitment or intention converts from inception into effective action, the initiation of a motivational approach begins as the individual works toward successful incorporation of the new commitment. Faculty often do not recognize the value of online learning (Esterhuizen, Blignaut & Ellis, 2013), resulting in a lack of motivation to implement and adequately utilize its features to best support online learning achievement. Cognitive dissonance relates to faculty perceptions of online learning as innovative technology initiatives in higher education are introduced top-down. Christensen's (1997) Disruptive Innovation theory suggested innovations to initiate bottom-up, as those situated at the bottom are more likely responsible for its institutional adoption. Therefore, this uncomfortable implementation strategy causes conflict in faculty understanding of its strategic goals. McNay (1995) identified institutions that adopt top-down decision making and implementation strategies as a corporate culture typology. McNay's corporate culture typology was identified as less adaptable to change and innovation implementation. Collegium and enterprise institutional types possess preferred qualities desirable for change adaptability (Czerniewicz & Brown, 2009). An institution's culture type affects outcomes and processes which leadership pursues during radical change and innovation initiation (McNay, 1995). Cognitive dissonance implies that as faculty engages with innovative technology, they will want to maintain their original thoughts on its use to preserve their novel ideology, disregarding substantiated evidence of its benefits. According to cognitive dissonance theory, if the faculty is uncomfortable with online learning, they will attempt to rationalize the ineffectiveness of online learning, despite a preponderance of evidence showing the opposite.

Additionally, dissonance stems from faculty requirements, in some cases (Masalela, 2011), to utilize and advocate new technologies although not directly involved in its planning and development.

Lastly, the theoretical perspective of McNay's (1995) Institutional Culture model provided a framework for this research study. This model is based on the degree of 'tightness' and 'looseness' of two dimensions, policy definition, and control over implementation, and identifies four types of institutional cultures: Collegium, bureaucracy, enterprise, and corporate. McNay stated, "These cultures may coexist at some universities." However, the balance and shifting of these culture types guide faculty actions and change implementation. Institutional leadership is critical in shaping and reinforcing its culture. Fundamentally, culture sets behavior expectations, the delineation of personality attributes that encourage one's intrinsic motivation, and exposed by human behaviors to include ceremonies, idols, and gestures (Hofstede, 2001). An institution's culture transfers to its members. This communication of culture affects an institution's ability to address challenges and change adaptation. McNay further specified:

> "Although in the past decade or so, many universities shifted toward a corporate management model, they are traditionally described as organizations guided by the principle of collegiality, with goals and policies often remaining vague and ambiguous and their implementation not strongly controlled." (McNay, 1995)

These three theorists provided an applicable conceptual framework for this research study. Online learning, as a disruptive innovation, voids a pre-existing position within most institutions existing structure (Christensen, 1997), hence, creating the need of skills acquisition across multiple departments to incorporate the innovation into a pre-existing institutional model. The disruption causes institutional and structural changes, as the innovation is exceptionally different from normal university operation. The theory of cognitive dissonance suggested that one's experiences of the innovation shapes their attitude, in cooperation with satisfaction, toward

innovative technology and dramatically influences their intention of continued use. Therefore, an institution's culture impacts the methods in which leadership communicates, implements, and executes disruptive innovation, influencing faculty perceptions of online learning.

Independent and Dependent Variable Relationships

In practice, chiropractic medicine is integrative and complementary, and to narrow the scope of the study's focus; this area is the main focus due to its comprehensive training that encompasses all areas of integrative and complementary care. To examine all disciplines associated with integrative and complementary areas of practice, one would have to include massage therapy, yoga therapy, homeopathy, naturopathy, acupuncture, and oriental medicine. This research study focuses on chiropractic institutions as they best represent integrative and complementary higher education accredited higher education programs and faculty population. The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education.

Institutional culture affects chiropractic faculty perceptions of online learning as leadership's communication strategy of innovation shapes its culture. This strategy influences the institution's ability to adapt to change and address challenges. Schein (1992) defined organizational culture as "a set of basic tacit assumptions that a group of people shares about how the world is, and ought to be, and that determines their perceptions, thoughts, feelings and, to some degree, their overt behavior." Based on McNay's (1995) culture typology, Czerniewicz & Brown (2009) argued that institutions identified as collegium or enterprise are most suitable for technology innovation and the variabilities of instructional pedagogies required to foster effective online learning. Czerniewicz & Brown correspondingly identified collegium and enterprise institutional types as possessing qualities desirable for change adaptability, online

learning sustainability, course effectiveness and fostering innovation to support learning and teaching in higher education (2009). Organizational culture encompasses guidelines and standards that elucidate the institution's formation, structure, purpose and ultimate sustainability (Schein, 1994). An institution's culture comprises of its principles, views, opinions, and expectations, implicit or explicit, revealed or created over time. These facets are typically communal, acknowledged and respected by its members, thus creating a culture. An institution's culture forms one's perspective of the organization (Czerniewicz & Brown, 2009) and impacts innovation acceptance (McNay, 1995). Moreover, one's prior experience with the innovation affects their perception, usage, and reception (Ho, 2010). The conceptual framework displayed the research study's independent variable, institutional culture, which influences chiropractic faculty perceptions of online learning use.

Institutional culture influences faculty perceptions of online courses flexible class times in chiropractic higher education. Chiropractic courses are traditional brick and mortar campus programs. Therefore, an institution's culture type influences faculty willingness to transform their curriculum to instruct courses online and adopt new teaching practices. Czerniewicz & Brown (2009) identified collegium and enterprise institutional types as possessing qualities desirable for change adaptability, online learning sustainability, course effectiveness and fostering innovation to support learning and teaching in higher education.

Institutional culture influences faculty perceptions of online student/teacher interaction in chiropractic higher education. Recent studies have shown that student's gain a sense of community in an online course from interactions among their peers (Overbaugh & Nickel, 2011; Shackelford & Maxwell, 2012; LaBarbera, 2013) and that student-faculty interactions display increased faculty presence in online courses (Moore, 2014). As student/teacher interactions in an

online course require faculty to implement the use of virtual collaboration tools; their familiarity with online learning technologies, proper online teaching practices and prior experiences with online education are significant to faculty perception (Jackson et al., 2010; Totaro, Tanner, Noser, Fitzgerald & Birch, 2005) and intentional continued use (Ho, 2010). Most faculty members prefer meeting with students face to face and find adequate collaboration as a challenge in online courses and a barrier to student's learning experience (Singh & Hardaker, 2014; Porter, Graham, Bodily, & Sandberg, 2016). Moreover, Czerniewicz & Brown (2009) found collegium and enterprise institutional culture types as most suitable for technology use and adoption. Institutions of the enterprise and corporate culture types are more likely to experience low technology adoption and use, as these decisions are typically top-down with tight control over policies and implementation (McNay, 1995). Owusu-Ansah et al. (2011) argued that universities upholding a traditional culture are less conducive to introducing innovative technologies and experience limiting factors in its acceptance of online learning and instructional technologies. Faculty, who perceive their institutions as an enterprise are more likely to experience increased flexibility, as decisions are departmental, compared to corporate culture institutions that encompass tight policies and strict rules when accomplishing goals.

Institutional culture influences faculty perceptions of online class structure in chiropractic higher education. Self-discipline is a strong characteristic of an online student (Kerr, Rynearson & Kerr, 2006; Cochran, Campbell, Baker & Leeds, 2014) and online faculty (Mandernach, Register & O'Donnell, 2015). Therefore, faculty experience with online learning and teaching affects their perspective on the level of autonomy that is essential to online students and faculty ability to achieve course goals and outcomes. The institution's culture affects faculty perceptions of online class structure in its determining whether faculty are included in the

decision-making process of its development. According to McNay's (1995) corporate culture typology, decisions are made top-down. Christensen's (1997) theory of disruptive innovation suggested successful innovations are decided bottom-up to ensure buy-in from those tasked with its daily use. Therefore, corporate culture institutional types are more likely to face resistance from faculty, as they were not involved in its decision-making and implementation planning.

Institutional culture influences faculty perceptions of online student learning in chiropractic higher education. Traditional program's faculty may rely heavily on textbooks to guide students through their studies. Online courses are utilizing e-textbooks, or e-texts, at an increasing rate. Robinson & Stubberud (2012) found that online students preferred e-texts for their courses. Faculty who believe textbooks are imperative for online courses may continue to provide and utilize textbooks as a guide for online students. However, research has shown that some students will not use their textbooks regardless of price or availability (Robinson & Stubberud, 2012). Faculty of traditional campus programs must incorporate alternative and additional complementary materials appropriate for online learning. Online programs require an increased level of autonomy and self-directed learning (Chou, 2012). Recent studies display no difference in online student achievement when compared to traditional campus students (Dell, Low & Wilker, 2010; Ali & Smith, 2014; Fito-Bertran, Hernandez-Laura & Serradell, 2014). As instructional materials used in an online course and its on-campus version should be consistent, the delivery platform (Dell, Low & Wilker, 2010) affects student's ability to reflect and discuss course materials among peers and faculty immediately. Even with a limitation of immediate feedback, studies show no difference in achievement. Faculty who believe students learn better in a traditional brick and mortar campus may be less likely to practice student-centered learning. Online courses require student-centered instructional approaches (Armstrong & Thornton, 2012;

Hains & Smith, 2012; Ke, & Kwak, 2013). Institutions identified as McNay's (1995) corporate culture typology are more likely to enforce student-centered learning as a directive communicated top-down. Corporate culture institutions follow a fixed set of strict rules, with tight policies and operational control, and are more likely to standardize their curriculum resulting in consistent online and campus course materials.

Institutional culture influences faculty perceptions of online quantitative courses in chiropractic higher education. A quantitative course, such as statistics, is a challenge to many online students and faculty (Potter, 2012; Kuzma, Kuzma & Thiewes, 2015). Course difficulty aligns with faculty and student's concern of interactions and presence in online courses (Moore, 2014). Collaborative learning among students in a traditional brick and mortar course is effective in course delivery and achievements. The forfeiture of student and faculty collaboration affects course outcomes and effectiveness. Faculty prior online experience affects their ability to achieve a desirable level of collaboration in advanced and quantitative courses. Further, the technological skills required to facilitate an online course, with an increasing need for cooperation between students and faculty (Moore, 2014), is dependent on faculty willingness to learn and implement these components of online instruction. McNay (1995) asserted universities identified as enterprise culture type, views students as customers and place high importance on satisfaction levels. Students who are not meeting academic standards in top complexity courses are more likely to express less satisfaction (McCluskey Prieto, 2015). Hence, an enterprise culture institution is more likely to ensure faculty is utilizing all tools possible in achieving the necessary high-level collaboration in advanced and quantitative courses and increase student satisfaction.

Institutional culture influences faculty perceptions of online testing in chiropractic higher education. Faculty members are concerned that online assessments, such as testing, compromises the integrity of tests as students are not directly supervised and lack accessibility to technical support, which explained traditional programs lack embracing online testing. Faculty expressed online instruction challenges and barriers to including a deficiency in technical knowledge, executing test reviews, and ensuring a suitable testing system is in place (Lammers, 2011; Chiasson, Terras & Smart, 2015). Ineffective online assessments result in negative results displayed in student achievement and course satisfaction. When students are not successful in evaluations and do not achieve academic standards, their satisfaction levels decrease (McCluskey Prieto, 2015), and they are more likely to find the course tests concepts irrelevant (Bude, Van De Wiel, Imbos, Candel, Broers & Berger, 2007). McNay (1995) emphasized those universities who identified with an enterprise culture typology viewed students as customers and placed high importance on satisfaction levels. Therefore, an enterprise culture institution is likely to focus on student achievement in its online course offerings. Additionally, McNay purported collegium culture institutions as allowing a high degree of flexibility in faculty decision-making. This loose control over policies provides opportunities for faculty to explore alternative assessment methods. Conversely, faculty creativity and flexibility are not evident in corporate culture institutions, as they possess leadership with tight control over policy implementation. Faculty who perceive online tests as difficult for students and faculty may experience tight policy constraints within their institution and perceive their institution as a corporate culture.

Institutional culture influences faculty perceptions of online learning technology adding educational value in chiropractic higher education. Healthcare faculty found conceptualization of an online theoretical course, centered on clinical application, as a challenge (Mastel-Smith,

Post & Lake, 2015). Requisite knowledge in understanding online courseware capabilities diminishes the concept gap. Likewise, the amount of experience faculty has with education technology affects their ability to accurately facilitate online courses and utilize technology tools required for excellent teaching and learning. The institution's culture type affects faculty perception of online technology adding educational value as McNay (1995) purported enterprise culture type as adopting a management style that favors offering courses with greater direct job applicability (computing and media) as opposed to university courses such as history, philosophy, and classics. Chiropractic training institutions center its education on practical applicability in the workforce with students being required to obtain licensure to practice in their field of study. Therefore, faculty of enterprise culture institutions is more likely to view online learning as adding value for students upon entering the workforce and adopt online learning and utilize its necessary components in an online environment.

Institutional culture influences faculty perceptions of online student's self-discipline in chiropractic higher education. Faculty and students alike must have self-discipline in an online course (Vesely, Bloom & Sherlock, 2007) as participation in online discussions and interactions are characteristically asynchronous.

> "Implementations of incentive programs for students who take advantage of support systems at their college might foster intrinsic drive to succeed and aid students in completing an online course successfully. These suggestions align with student perceptions regarding what a degree is used for: self-actualization, increase self-efficacy, and positive self-discipline and self-reliance issues". (Wilson, 2014)

McNay's (1995) collegium institutional culture typology has loose control over the implementation of institutional goals and allows high degrees of freedom for individuals to work towards the university goals they believe are most important. Successful online students must possess an increased level of autonomy (Vesely, Bloom & Sherlock, 2007). Therefore, online

instructors who identify their institution as maintaining a collegium culture have confidence in students working autonomously and hold themselves to similar standards. Faculty of a collegium culture institution can focus on institutional goals that they believe are significant. Thus, if collegium culture faculty acknowledges online learning as vital to the university's goal, they will enforce and enhance self-discipline in online courses.

Institutional culture influences faculty intention to teach a future online course in chiropractic higher education. Festinger (1957) theorized that one's behavioral commitment as based on prior experiences. Hence, faculty who possess previous online teaching and learning experiences affect their ability to modify one's perception of online learning either towards or against its resistance. Ho (2010) performed a study which illustrated first-time online education faculty exhibiting a positive attitude and experience with the online platform were also positive about their intention to continue to use the platform. Further, faculty who identified with a negative attitude and experience were negative in their intentions to continue the use of technology. In reviewing these studies and its associated data, finds individuals who have had a positive experience with online learning expressed their intent of continued use of online technology as part of their instructional methodology and faculty who reported a negative experience with online learning would not utilize it for future instruction. McNay's (1995) bureaucracy culture institutional typology asserted appointed, rather than elected, committees or working parties as charged with decision-making, which reflects a lack of faculty involvement during significant decision-making processes. Faculty of institutions classified as bureaucracy are more likely to experience, and perceive, online learning program implementation as a top-down decision strategy. Masalela (2011) agreed with Christensen (1997) regarding the top-down implementation of online learning as causal to faculty resistance in technology adoption.

Christensen purported this resistance is due to faculty perceptions and sentiment of forceful online instruction, as they were not involved in the initial decision-making process. Christensen's (1997) disruptive innovation theory stated that innovations should not be a top-down process, as its proponents are more likely situated at the bottom and ultimately responsible for its widespread adoption.

Covariate Relationships

The covariates of this study were faculty age, gender, ethnicity, employment status, and years at the current institution. Age was included to provide additional details regarding faculty who may possess prior online learning experiences and encounters. Faculty with previous experience in online learning and instructing, as a variable, was an important consideration, possibly to provide further insight into their understanding of student's preference to take online courses and faculty interest in instructing online courses due to its flexibility in class times. This was essential in identifying faculty consideration of how online learning benefits nontraditional students and online faculty. Faculty with limited online experience often expressed difficulty in administering online learning activities appropriate for student learning (Mandernach, Mason, Forrest & Hackathorn, 2012). Likewise, faculty perceptions of online learning were influenced by their understanding of technical support, academic honesty, the reliability of online testing systems, and student and instructor technological comfort levels (Okunji & Hill, 2014; Lichoro, 2015). Additionally, recent studies (Deem, 2003; Bagilhole & White, 2011; de la Cruz, 2011 Overdyke, 2013; Visser, 2015) have shown gender and ethnicity as significant when measuring an institution's culture; therefore, these demographics were included as covariates. The final covariates of adjunct or full-time faculty classifications and number of years instructing at their current university were included. The amount of time faculty has worked at a university, and

their employment status was vital, as faculty typically experience disproportionate amounts of time on campus, which could also affect their level of interactions and experiences within the institution. Therefore, confounding distinctions occur between adjunct and full-time faculty observation and classification of the institution's culture. This study hypothesized that chiropractic institutions would predict a collegium institutional culture typology, among older faculty, with very little faculty possessing prior online experience as an instructor or student. Moreover, similar perceptions of online learning as it pertains to class times, interactions, class structure, learning, quantitative courses, online testing, educational value, self-discipline and their plans to teach online.

Conceptual Diagram

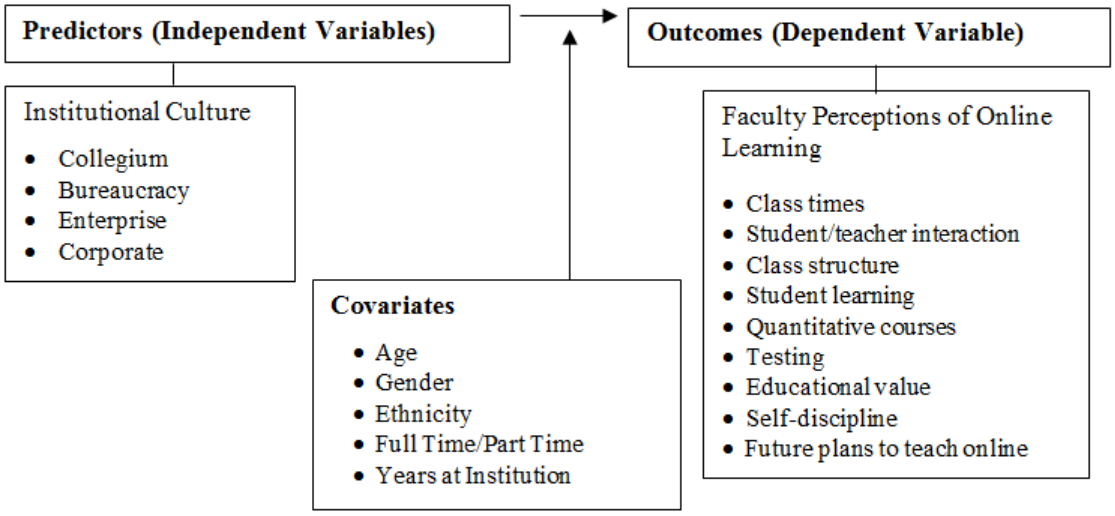


Figure 1: Conceptual Diagram

Chiropractic institutions integrative and complementary practices narrowed the scope of the study's focus. To examine all integrative and complementary areas of practice, one would have to include massage therapy, yoga therapy, acupuncture, homeopathy, naturopathy, and oriental medicine. This study focused on chiropractic institutions as they best represent

integrative and complementary higher education accredited programs and faculty population. The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education.

Hypotheses

This study hypothesized chiropractic institutions possess characteristics aligned with McNay's (1995) collegium institutional culture typology. Conversely, Czerniewicz & Brown (2009) purported collegium and enterprise institutions as more suitable for adoption of innovative educational technologies due to the flexibility and variety of instructional pedagogies required to foster effective online learning. Despite this finding, chiropractic institutions continue to lag in online learning opportunities. Therefore, other factors must also contribute to chiropractic's late adoption. Online learning was recognized by Christensen (1997) as a disruptive innovation due to faculty believing the inferior product, online learning, to possibly replace higher quality traditional residential learning (Chen & Tseng, 2012; Mazoue, 2014), resulting in residential learning losing its top position within higher education. Festinger's (1957) theory of cognitive dissonance also supported this study's hypothesis as faculty experiences guide their perception of online learning. Ho (2010) found that faculty with limited or no familiarity with educational technology as more likely to experience cognitive dissonance. Cognitive dissonance theory purported faculty who are uncomfortable with online learning will attempt to reduce dissonance through rationalizing the uncomfortable event by accepting online learning as ineffective, despite the preponderance of evidence showing the opposite. Consequently, this study hypothesized collegium institution's (IV) as related to faculty perceptions of online learning (DV).

RQ_1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_1: There is a significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_2: There is a significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_3: There is a significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_4: There is a significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_5: What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_5: There is a significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education

CHAPTER III: RESEARCH METHODOLOGY

The purpose of this research study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education among CCE accredited institutions. The significance of these relationships was to inform chiropractic higher education leadership of their institutional culture and faculty perceptions of online learning usage to best meet the requirements of institutional accrediting bodies and enhance future faculty and students online learning experiences and strategic online program initiation. Issues addressed in this study derived from a deficiency in the literature centered on chiropractic's institutional culture and late adoption of online learning and add to the existing body of knowledge. Data were collected from an electronic survey distributed to participating CCE accredited chiropractic institutions and analyzed with the Statistical Package for the Social Sciences (SPSS).

Research Design

A quantitative correlational research design was selected for this study. This study aimed to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education. To investigate any plausible relationships among the variables of interest in this study, participation requests were sent to CCE accredited institutions, asking faculty to complete a validated survey consisting of items to measure the constructs. Consent was obtained from survey developers to utilize the instruments for this study, and the institutions provided consent to distribute electronic surveys to faculty. Survey items were Likert scaled and coded as 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. SPSS was utilized to analyze the institution's culture and faculty perceptions of online learning.

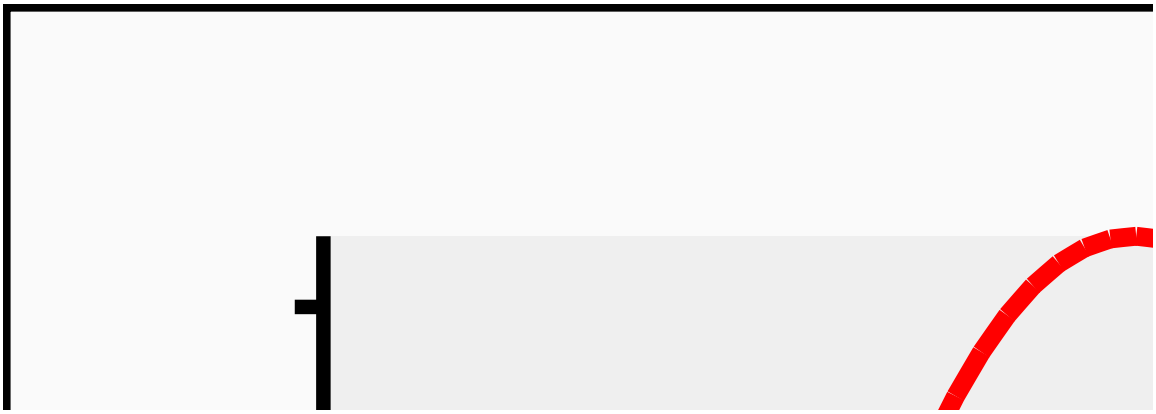
Study Population

This quantitative correlational study consisted of a web-based survey sent to faculty at participating CCE accredited chiropractic higher education institutions. CCE is responsible for adherence and enforcement of online learning standards and guidelines of member institutions. In a similar study, Schwartz (2010) focused primarily on integrative institutions located in the Midwest region of the United States. Appropriate permissions were obtained to include accredited chiropractic education institutions representative of all areas across the United States. Participating institutions lack existing online, or distance learning options for students enrolled in chiropractic degree programs.

Participants were selected by use of total population sampling method, a type of purposive sampling technique. Total population sampling was best appropriate for this research study as the population was relatively small (N = 409) and share purposeful identification based on the criteria of employing chiropractic faculty. By involving the total population, more profound insight into faculty perceptions was accomplished. At the time of this study, CCE (2016) maintained a list of accredited chiropractic higher education institutions and reported 15-member institutions within the United States. Institutions that agreed to participate in this study received a web-based survey disseminated among its chiropractic faculty. Permission was obtained to participate in the study from six, of the 15 CCE accredited higher education institutions, resulting in a 32% response rate (Appendix 10). Data collected from participating institutions were aggregated to satisfy the required sample size identified by a priori analysis. A sample size of 131 was achieved, G* power calculations recommended approximately 118 with a 5% error rate (Faul, Buchner, Erdfelder, Faul, & Lang, 2009), as displayed below:

F tests - Linear multiple regression: Fixed model, R^2 deviation from zero
Analysis: A priori: Compute required sample size

Input:	Effect size f^2	= 0.15
	α err prob	= 0.05
	Power (1-β err prob)	= 0.80
	Number of predictors	=10
Output:	Noncentrality parameter λ	= 17.7000000
	Critical F	= 1.9203099
	Numerator df	= 10
	Denominator df	= 107
	Total sample size	= 118
	Actual power	= 0.8012597



Data Collection

This study utilized a correlational quantitative research design. Creswell stated:

> "A quantitative approach is one in which the investigator primarily uses post-positivist claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data." (Creswell, 2013, p. 18)

Therefore, a correlational quantitative research design was most suitable for examining the concepts of this study and analyzing its results. Quantitative data collected was compiled from a web-based survey containing Likert scaled items distributed to participating CCE accredited higher education institutions to identify chiropractic faculty perceptions of online learning, as

measured by Totaro et al. (2005) Faculty Perceptions of Distance Education Survey, and classify its institutional culture, as measured by Nauffal's (2004) validated survey instrument.

Institutions that granted permission to participate in the study were emailed an invitation (Appendix 8) with details regarding the study, Protection of Human Research Subjects (2009) informed consent, and a Survey Monkey hyperlink to access the web-based survey. Participating faculty were provided two weeks to complete the survey. After one week, a second follow-up email was sent to the institution's primary point of contact, to encourage faculty who had not completed the survey to do so during the remaining survey period. After the survey tie period expired, responses were collected in the web-based tool, exported into Excel, and imported into SPSS.

Variables

This study examined relationships between the independent variable, institutional culture, and dependent variable, faculty perceptions of online learning, at CCE chiropractic higher education institutions. It is common knowledge that chiropractic higher education institutions are integrative and complementary concentrations of healthcare. Chiropractic higher education trains potential graduates on all aspects of integrative and complementary therapies. Therefore, this study was not conducted to investigate the relationship of all integrative and complementary higher education institutions, as that approach would include massage therapy, yoga therapy, homeopathy, naturopathy, acupuncture, and oriental medicine. To narrow the focus of this research study, CCE accredited chiropractic training programs were examined, in addition to demographic and covariables of faculty online experience, age, gender, ethnicity, employment status, and years at current university.

Collected data were analyzed utilizing the statistical package for social sciences software (SPSS) to test relationships between all variables. The dependent variables in this research study were faculty perceptions of online learning, and the independent variable was institutional culture. The institutional culture was classified as the independent variable as it was not to be changed by any of the other variables. However, the identified institutional culture was positioned to affect, alter, or predict faculty perceptions of online learning. Conversely, the dependent variable (faculty perceptions of online learning) was not to change, alter, or predict the independent variable (institutional culture).

Nauffal's (2004) Institutional Culture instrument, as shown in Appendix 3, measured the independent variable, institutional culture. The dependent variable was measured by Totaro et al. (2005) Faculty Perceptions of Online Learning instrument, as shown in Appendices 4 and 5. Nauffal and Totaro et al. developed each survey instrument to measure institutional culture and faculty perceptions of online learning on a 5-point Likert scale, by requesting responses that were ranked and originated from fixed and closed questions. The quantitative surveys were combined and delivered to participants as a 50-item questionnaire to answer research questions 1 - 5. Survey items were Likert scaled as 5= Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree.

Demographic and covariates consisted of age, gender, ethnicity, employment status, and years at the current institution, and measured by use of demographic data included in the web-based survey tools. Descriptive statistics for the quantitative study variables are shown below in Table 2.

Table 2: Description of Quantitative Study Variables

Description of Quantitative Study Variables

Variable	**Role**	**Operationalized**	**Scale**
Institutional Culture	IV	Nauffal (2004) Institutional Culture Instrument 1. Aggregated: Highest mean score for each response determined preferred culture type (Appendix 2)	RQ1 – RQ4: Continuous (Likert) RQ5: Categorical
Faculty Perception	DV	Totaro et al. (2005) Faculty Perceptions of Online Learning Instrument 1. Aggregated: Highest mean score for each item response determined perception (Appendix 2)	Continuous (Likert)
Age	CV	Survey Response	Categorical
Gender	CV	Survey Response	Categorical
Ethnicity	CV	Survey Response	Categorical
Employment Status	CV	Survey Response	Categorical
Years at Current Institution	CV	Survey Response	Categorical

Instrumentation

A valid and reliable instrument created and piloted by Nauffal (2004), with a reliability coefficient of $\alpha = 0.9157$McNay's (1995) measured the institutional culture typologies (collegium, bureaucracy, corporate, enterprise). As survey validity is difficult to obtain with any single statistical measurement, Nauffal tested it with use of Campbell and Fiske's (1959) convergent and discriminate validity paradigm. This study utilized the portion of Nauffal's (2004) survey that measured institutional culture.

Additionally, Totaro et al. (2005) Faculty Perceptions of Distance Education Survey, with a reliability coefficient of $\alpha = 0.8917$, was used to measure faculty perceptions. The survey instrument was pilot-tested in two recent studies (Tanner, Noser & Totaro, 2009; Tanner, Noser & Langford, 2011) as well as used in multiple studies (Totaro, Tanner, Noser, Fitzgerald & Birch, 2005; Tanner, Noser & Totaro, 2009; Brawner & Wyatt, 2010; Tanner, Noser & Langford, 2011) to measure faculty and student perceptions of online learning. Totaro et al. (2005) faculty perception of online learning survey instrument is a five-point Likert scale and operationalized by requesting respondents to choose statements that best describe their view of online education. The study participant's demographic characteristics included gender, ethnicity, and age. Covariables included employment status and years at current university. Demographic and covariables items were incorporated as a part of the combined survey instrument. These characteristics provided a comprehensive view of the participants to examine whether they were impactful to the criterion variables.

Age, sex, ethnicity, employment status, and years at current institution demographic and covariables offered additional control and insight within the analyses. Previous studies indicated a relationship of such demographics to perceptions of online learning and institutional culture (Deem, 2003; Bagilhole & White, 2011; de la Cruz, 2011; Mandernach, Mason, Forrest & Hackathorn, 2012; Overdyke, 2013; Okunji & Hill, 2014; Visser, 2015; Lichoro, 20150. Additionally, Nauffal (2004) study revealed gender and years working at current institutions as impactful to faculty perceptions of institutional culture. Notably, Abraham's (2014) identified relationships between faculty number of years working at the institution and gender-related to faculty perceptions of online engagement. Perception studies have historically examined a wide range of variables, grouped according to different criteria depending on the author. Among the

variables found to influence perception are gender and age (Berge & Muilenburg, 2001; Borstorff & Lowe, 2006; Huang, 2002; Lee, 2007; Liu & Wilson, 2001; Ortiz-Rodriguez, et al., 2005; Rovai & Baker, 2005; Smith & Rupp, 2004; Wyatt, 2005). Moreover, researchers found gender and age influenced attitudes and perceptions toward technology (Liu & Wilson, 2001; Huang, 2002), academic unit (Kim & Lee, 2008; and Lee, 2007), and its role in education (Flynn, Concannon, & Bheachain, 2005; Martens, Bastiaens, & Kirschner, 2007; Orly, 2007). According to these authors, prior studies have recognized the importance of these variables and qualified its inclusion as part of this study.

Statistical Analysis

This study examined relationships between institutional culture and faculty perceptions of online learning while controlling for faculty gender, age, ethnicity, employment status, and years at the current institution of chiropractic higher education. All data were screened before statistical analysis to ensure that it met all required assumptions for each statistical test such as skewness, kurtosis, scatterplots, normality, linearity, and homoscedasticity. Psychometric properties of the survey instrument included validity and reliability of the variables, scales, and factors used in subsequent analyses, in addition to the reliability indices as measured by Cronbach's alpha. Faculty participant's highest mean score per culture type determined institutional culture prominence. Although the highest mean score represented a dominant culture, respondents provided the study with mean scores regarding all other cultures in the process. Markedly, after data, collection reliability tests were performed and Totaro et al. (2005) instrument items reliability coefficients were negative or unacceptably low with one exception: self-discipline, $\alpha = .98$. Therefore, faculty perceptions of online learning were measured by use of a self-discipline subscale.

As ethnicity and years at current institution variables had three or more levels, dummy codes were created and outlined below:

	Non-White	**White**
Non-White	0	0
White	1	0

	Less than 1 year	**1 or more years**
Less than 1 year	0	0
1 or more years	0	1

Descriptive Analyses

Descriptive analysis was used to provide an initial assessment of the data. A request for participation and consent was sent to CCE accredited chiropractic institutions that agreed to participate (*N=6*) in this study and disseminated chiropractic faculty. Study participants submitted responses used to measure institutional culture and perceptions of online learning. Demographical characteristics included age, gender, and ethnicity, with employment status and years at the current institution as covariables. Descriptive analyses were performed to measure continuous variables mean (M), standard deviation (SD), population (N), confidence interval (CI), categorical variable's frequency (F) and percent (%). This analysis provided a comprehensive and in-depth view of this population to examine its impact on the criterion variables.

Bivariate Analyses

Pearson's (r) correlation coefficient assessed if the relationship strength between independent and dependent variables were significant. According to Lee Rodgers & Nicewander (1988), Pearson's (r) assumes linearity and measures the extent to which both variables are

proportionate to one another. Pearson's (r) correlation coefficient ranges in value from -1 to +1 to indicate when one variable changes, the impact on the other. -One determines the variables be changing in the opposite direction (completely negative relationship), 0 designates that when one variable changes, the other does not (no relationship), and +1 indicates the variables are changing in the same direction (completely positive relationship). Data for the independent and dependent variables were collected on a 5-point Likert scale, which allowed its analyzation as continuous. After the collected data passed initial tests for linearity, and homoscedasticity, Pearson's correlation statistical test was employed to analyze relationships between institutional culture and faculty perceptions.

The one-way analysis of variance (ANOVA) was conducted to determine if institutional culture (independent variable) had a statistically significant effect on faculty perceptions of online learning (dependent variable). ANOVA was appropriate as some of the independent variables had more than two groups, and the dependent variable (faculty perceptions of online learning) was continuous, measured on a 5-point Likert scale. ANOVA statistical test was purposed to "predict a single dependent variable by one or more predictor variables" (Cardinal & Aitken, 2013, p. 4). These tests were essential in determining if institutional cultures were significant factors contributing to differences among faculty perceptions of online learning or if an extraneous demographic or covariable was more prominent and needed to be accounted for.

Multivariate Analyses

Once linearity, normality, and homoscedasticity were established, the collected data was tested using a hierarchical multiple regression analysis to determine if there were any significant correlations among the dependent and independent variables. Multiple regression examined the

dependent variable while focusing on the independent variable and controlling for demographic and covariables. The strength and direction of the variance between relationships found among the independent variable, control variables, and dependent variable that possibly attributed to each of the factors involved were analyzed using hierarchical multiple regression. As the institutional culture (independent variable) is categorical, regression coefficients determined whether it predicted faculty perceptions of online learning (dependent variable). A regression analysis for each of the dimensions, or measures, of the outcome variables was conducted for the predictor variable. Demographic and covariables of age, gender, ethnicity, employment status, and years at the current institution were included and controlled in the regression. In step #1 of the model, the demographic and covariables of age, gender, ethnicity, employment status, and years at the current institution were entered. In Step #2 of the model, institutional culture(s) was entered. Regression procedures were repeated for institutional culture typologies: collegium, bureaucracy, enterprise, and corporate. Additionally, hierarchical multiple regression analyses were executed to isolate unique contributions of each institutional culture type when considered together and with faculty perceptions, while controlling for demographic and covariables. Below, Table 3 provides delineation of the study variables, data analysis, and statistical procedures per research question.

Table 3: Statistical Analysis of Variables

Statistical Analysis of Variables

RQ1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Collegium Culture (Continuous)

Statistical Code: 1 = Collegium

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariable

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

1. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

1. Full Model - Relationships between all variables
2. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Collegium Culture Score
3. Tested contributions of collegium culture when added to the regression model

RQ2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Bureaucracy Culture (Continuous)

Statistical Code: 2 = Bureaucracy

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

1. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

1. Full Model - Relationships between all variables
2. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Bureaucracy Culture Score
3. Tested contributions of bureaucracy culture when added to the regression model

RQ3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Enterprise Culture (Continuous)

Statistical Code: 3 = Enterprise

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

1. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

1. Full Model - Relationships between all variables
2. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Enterprise Culture Score
3. Tested contributions of enterprise culture when added to the regression model

RQ4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Corporate Culture

Statistical Code: 4 = Corporate

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

1. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

1. Full Model - Relationships between all variables
2. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Corporate Culture Score
3. Tested contributions of corporate culture when added to the regression model

RQ5: What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Corporate Culture (Categorical)

Statistical Code: 1 = Collegium, 2 = Bureaucracy, 3 = Enterprise, 4 = Corporate

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

ANOVA

1. Determined if the independent variable had a statistically significant effect on the dependent variable

Pearson's (r)

1. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

1. Full Model - Relationships between all variables
2. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Corporate Culture Score
3. Tested contributions of collegium, bureaucracy, enterprise, and corporate culture when added to the regression model

CHAPTER IV: RESULTS

The purpose of this study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education. The findings from this study will benefit chiropractic higher education leadership by informing them of how essential institutional culture and faculty perceptions of online learning are during the implementation of innovative strategic initiatives. Additionally, this study will assist higher education leadership in meeting requirements set forth by programmatic accrediting agencies and enhance future faculty and students' online experiences. The organization of Chapter 4 is by demographical descriptions of the study's sample population, reliability analysis, data screening, and hypotheses testing.

Study Participants

A web-based survey, distributed to faculty at participating CCE accredited chiropractic higher education institutions, obtained the data utilized in this quantitative correlational study. CCE is responsible for adherence and enforcement of online learning standards and guidelines among its chiropractic member institutions. Participating institutions in this study are void of existing online or distance program opportunities for students enrolled in chiropractic degree programs.

Data Integrity

The survey instruments used to measure institutional culture and chiropractic faculty perceptions of online learning was Nauffal's (2004) Institutional Culture and the Faculty

Perceptions of Distance Education Survey (Totaro et al., 2005). Nauffal's (2004) survey instrument, containing 32 items, was constructed on McNay's (1995) classification of institutional culture types defined as either loose or tight, grounded on four culture dimensions: collegium, bureaucracy, enterprise and corporate. Faculty perceptions of online learning were measured using Totaro et al. (2005) Faculty Perceptions of Online Learning Survey. Nauffal and Totaro et al. surveys were combined to form a 50-item questionnaire that was electronically sent to faculty at participating Council of Chiropractic Education (CCE) accredited chiropractic higher education institutions. CCE is responsible for adherence and enforcement of online learning standards and guidelines of its chiropractic member institutions. Survey Monkey, a web-based survey and response collection tool, was used to compile survey data. After the expiration of the survey period, collected data were exported into Microsoft Excel, where it was then imported into SPSS 23 for analysis. Preliminary analyses were conducted using Pearson correlation coefficients and ANOVA to identify any pattern of relationships among the items in Nauffal (2004) and Totaro et al. (2005) surveys. Conclusive analyses were performed with use of multiple regression statistical tests.

Reliability Analysis

The reliability of Nauffal's (2004) Institutional Culture instrument was tested with Cronbach's alpha. The Institutional Culture Survey had four subscales: collegium, bureaucracy, enterprise, and corporate. The minimum acceptable reliability was .70. For collegium, $\alpha = .89$. For bureaucracy, $\alpha = .80$. For enterprise, the initial $\alpha = .67$. An inter-item analysis was conducted on the data and revealed that the reliability could be improved by excluding item #23, "*You feel the management style is one of delegated (passed on or entrusted) leadership*." When item #23 was excluded, $\alpha = .79$. For corporate institutional culture, the initial $\alpha = .65$. An inter-

item analysis indicated that the reliability could be improved by excluding item #30, "*You feel the management style adopted by the University focuses on loyalty to the organization*." When item #30 was excluded, α = .75.

An inter-item analysis was conducted on Totaro et al. (2005) faculty perceptions of online learning instrument and resulted in a Cronbach alpha value of -.31. Negative Cronbach alpha values violate assumptions for reliability. Results indicated reliability could not be improved by excluding additional items. Totaro et al. (2005) most likely incepted the faculty questionnaire based on a logical or rational approach, which was appropriate for their population but lacked in the ability to cross disciplines. Nunnally & Bernstein (1994) acknowledged that when researcher constructs surveys grounded on a logical or rational approach, as potentially problematic in its reliability due to context, rather question construction. Next, the reliability of subscales was examined. For most of the subscales, reliability coefficients were negative or unacceptably low with one exception: self-discipline, α = .98. Table 4 displays acceptable reliability coefficients and subscale.

Table 4: Reliability Coefficients

Reliability Coefficients

Variable	*N* of Items	Cronbach's alpha
Collegium	11	.893
Bureaucracy	9	.799
Enterprise	6	.791
Corporate	4	.749
Faculty Perceptions of Online Learning	2	.979

The self-discipline subscale consisted of question #54: "*Tests in an online course are more difficult for faculty to administer.*" and #57 "*Online courses require the student to be more self-disciplined than in traditional courses.*" Measuring perceptions is a complex issue, and this

subscale was the most favorable to measure of faculty perceptions of online learning, compared to imposing less reliable multiple indicators.

Descriptive Analysis

The descriptive analysis provided an initial assessment of the data. A request for participation and consent was sent to CCE accredited chiropractic institutions that agreed to participate (*N=6*) in this study and disseminated chiropractic faculty. Study participants submitted responses used to measure institutional culture and perceptions of online learning. Demographical characteristics included age, gender, and ethnicity, with employment status and years at the current institution as covariables. Descriptive analyses were performed to measure continuous variables mean (M), standard deviation (SD), population (N), confidence interval (CI), categorical variable's frequency (F) and percent (%). This analysis provided a comprehensive and in-depth view of this population to examine its impact on the criterion variables.

Descriptive Analysis for Categorical Variables

Faculty respondents consisted of 44.3% (*n* = 58) females and 55.7% (*n* = 73) males. Regarding age, 59.5% were between the ages of 31-50 (*n* = 78), whereas 40.5% (*n* = 53) were over the age of 50. For ethnicity, 83.2% (*n* = 109) were White and 16% (*n* = 22) were Non-White. More faculty respondents held part time positions (77.9%, *n* = 102), compared to 22.1% (*n* = 29) who reported full-time. Many respondents had instructed at their current institution for 1 or more years, 84.7% (*n* = 111), and 15.3% reported less than one year (*n* = 20).

Table 5: Descriptive Analysis for Categorical Variables

Descriptive Analysis for Categorical Variables

		Frequency	Percent (%)
Independent Variable			
Institutional Culture			
	Collegium	33	25.2%
	Bureaucracy	56	42.7%
	Enterprise	7	5.3%
	Corporate	30	22.9%
	Undifferentiated	5	3.8%
Demographic/Covariables			
Gender			
	Female	58	44.3%
	Male	73	55.7%
Age			
	31 - 50	78	59.5%
	Over 50	53	40.5%
Ethnicity			
	Non-White	22	16%
	White	109	84%
Employment Status			
	Full Time	35	26.7%
	Part Time	96	73.3%
Years at Current Institution			
	Less than 1	20	15.3%
	1 or More years	111	84.7%

Descriptive Analysis of Continuous Variable

Descriptive statistics presented in Table 6 display values for the continuous variable: faculty perceptions of online learning. Notably, most participants were neutral (M = 3.00, N = 33) in perception responses from survey items of the self-discipline subscale and very few participants agreed (M = 4.20, N = 3) or strongly agreed (M = 5.00, N = 4) with self-discipline subscale items.

Table 6: Descriptive Analysis for Continuous Variable

Descriptive Analysis for Continuous Variable

	Mean	Frequency	Percent (%)
Dependent Variable			
Faculty Perception of Online Learning			
Strongly Disagree	1.00	7	5.3%
	1.50	11	8.4%
Disagree	2.00	22	16.8%
	2.50	23	17.6%
Neutral	3.00	33	25.2%
	3.50	16	12.2%
Agree	4.00	12	9.2%
	4.50	3	2.3%
Strongly Agree	5.00	4	3.1%

Descriptive Analysis for Independent Variables

To gain further insight into the institutional culture, faculty responses were grouped into categories corresponding to the highest degree of endorsement. Survey items were 5-point Likert scaled and ranged from 1 = Strongly Agree to 5 = Strongly Disagree. Aggregated scores for the variables were computed by calculating the mean responses for each item. For instance, if a respondent's aggregated score for collegium culture were higher than all their other institutional culture aggregated scores, then that individual was categorized as faculty from a university with collegium culture. As a caveat, McNay (1995) acknowledged that several cultures often co-exist within a university, and this study recognized that it is common for faculty from the same university to perceive its institutional culture differently and provide dissimilar ratings. As indicated below, in Table 7, approximately 4% (n = 5) of faculty respondents were undifferentiated in their perceptions of institutional culture. This means that two or more

institutional culture types scores were identical based on their aggregated scores. In SPSS, institutional culture was labeled as 1 = Collegium, 2 = Bureaucracy, 3 = Enterprise, and 4 = Corporate. Figure 2 displays institutional culture distribution among chiropractic faculty respondents.

Table 7: Descriptive Analysis of Independent Variable

Descriptive Analysis of Independent Variable of Institutional Culture

Institutional Culture	M (SD)	N (%)	95% CI [LL, UL]
Collegium	2.68 (.908)	33 (25.2%)	[2.36, 3.00]
Bureaucracy	2.72 (.948)	56 (42.7%)	[2.47, 2.98]
Enterprise	3.21 (1.1127)	7 (5.3%)	[2.19, 4.24]
Corporate	2.80 (.952)	30 (22.9%)	[2.44, 3.16]
Undifferentiated	2.80 (.274)	5 (3.8%)	[2.46, 3.14]

The highest endorsed institutional culture was bureaucracy typology (n = 56, M = 2.72, SD = 0.948), followed by collegium (n = 33, M = 2.68, SD = 0.908), corporate (n = 30, M = 2.80, SD = .952), and enterprise (n = 7, M = 3.21, SD = 1.1127), displayed in Figure 2.

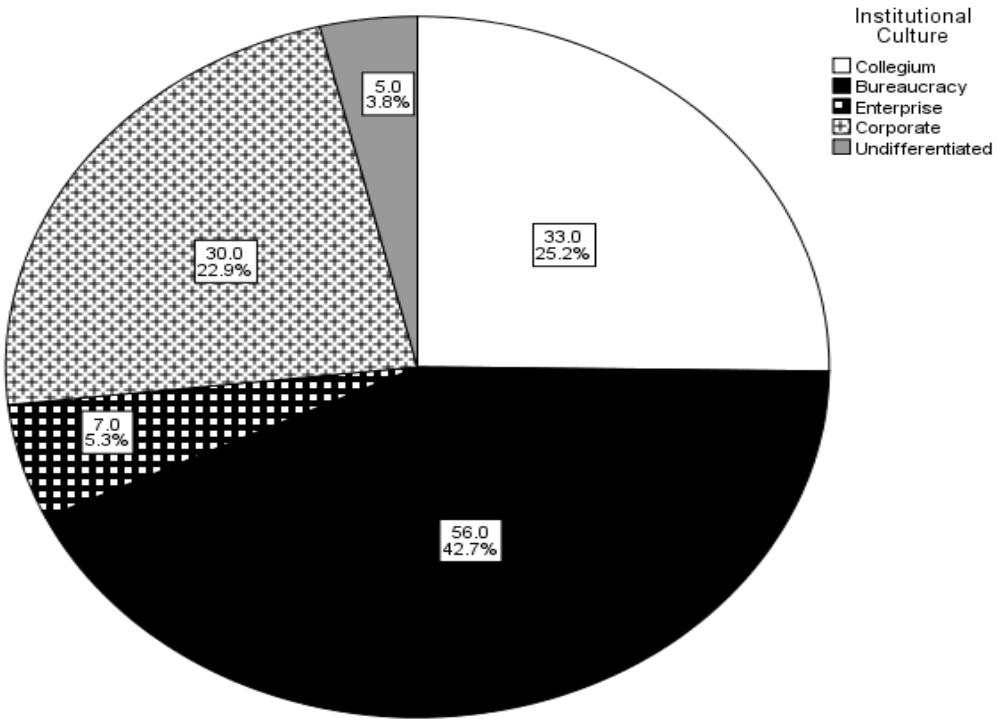


Figure 2: Institutional Culture Distribution

Descriptive Analysis for Dependent Variable

The dependent variable, faculty perceptions of online learning (M = 2.68, SD = .927) was measured on a 5-point Likert scale: 5= Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. The rated items, obtained from the self-discipline subscale, included two items from Totaro et al. (2005) Faculty Perceptions of Online Learning instrument, items #54: "*Tests in an online course are more difficult for faculty to administer.*" and #57 "*Online courses require the student to be more self-disciplined than in traditional courses*". Table 8 shows faculty participants aggregated response values from the self-discipline subscale and measured on a 5-point Likert scale.

Table 8: Descriptive Analysis for Dependent Variable

Descriptive Analysis for Dependent Variable

	M (SD)	N (%)	SD	95% CI [LL, UL]
Faculty Perceptions	2.68 (.908)	33 (25.2%)	.927	[2.36, 3.00]

Descriptive Analysis of Independent Variable by Demographic/Covariables

Descriptive Analysis of Collegium Institutional Culture by Demographic/Covariables

Faculty who identified their institution as possessing McNay's (1995) collegium culture typology (*n* = 33) were mostly male (*n* = 28), between the ages of 31 – 50 (*n* = 19), and of White ethnicity (*n* = 25). Faculty respondents of collegium culture were mainly employed by their institution part time (*n* = 23), with primarily 1 or more years at current institution (*n* = 26).

Table 9: Descriptive Analysis of Collegium Culture by Demographic/Covariables

Descriptive Analysis of Collegium Culture by Demographic/Covariables

		Frequency	Percent (%)
Gender	Female	4	12.1%
	Male	28	84.8%
Age	31-50	19	57.6%
	Over 50	13	39.4%
Ethnicity	Non-White	7	21.3%
	White	25	75.8%
Employment Status	Part Time Faculty	23	69.7%
	Full-Time Faculty	9	27.3%
Years Institution	Less than one year	6	18.2%
	1 or More Years	26	78.8%

Descriptive Analysis of Bureaucracy Culture by Demographic/Covariables

Faculty who more closely identified their institution as possessing McNay's (1995) bureaucracy culture typology characteristics (n = 56) were distributed nearly even between male (*n* = 27) and female (*n* = 28) respondents, they were mostly between the ages of 31 – 50 (*n* = 37), and of White ethnicity (*n* = 49). Faculty respondents of bureaucracy culture institutions were

primarily instructing part-time (*n* = 38), with 1 or more years at current institution (*n* = 48). Bureaucracy culture institutions descriptive statistics are below in Table 10.

Table 10: Descriptive Analysis of Bureaucracy Culture by Demographic/Covariables

Descriptive Analysis of Bureaucracy Culture by Demographic/Covariables

		Frequency	Percent (%)
Gender	Female	28	35.0%
	Male	27	33.8%
Age	31-50	37	46.3%
	Over 50	18	22.5%
Ethnicity	Non-White	6	7.6%
	White	49	61.3%
Employment Status	Part Time Faculty	38	47.5%
	Full-Time Faculty	17	21.3%
Years Institution	Less than one year	7	8.8%
	1 or More Years	48	60%

Descriptive Analysis for Enterprise Culture by Demographic/Covariables

Faculty who identified their institution as possessing McNay's (1995) enterprise culture typology (*n* = 7) were distributed nearly even between males (*n* = 4) and females (*n* = 3), ages 31 - 50 (*n* = 4) and over 50 (*n* = 3), and White (*n* = 25). Faculty respondents of enterprise culture institutions were mainly employed part time (*n* = 6), with 100% of respondents reporting 1 or more years at current institution (*n* = 7). Enterprise culture institutions descriptive statistics are in Table 11.

Table 11: Descriptive Analysis of Enterprise Culture by Demographic/Covariables

Descriptive Analysis of Enterprise Culture by Demographic/Covariables

		Frequency	Percent (%)
Gender	Female	3	42.9%
	Male	4	57.1%
Age	31-50	4	57.1%
	Over 50	3	42.9%
Ethnicity	Non-White	3	42.9%
	White	4	57.1%
Employment Status	Part Time Faculty	6	85.7%
	Full-Time Faculty	1	14.3%
Years Institution	1 or More Years	7	100.0%

Descriptive Analysis of Corporate Culture by Demographic/Covariables

Faculty who identified their institution as possessing McNay's (1995) corporate culture typology (n = 33) were mostly female (n = 19), between the ages of 31 - 50 (n = 16), and of White ethnicity (n = 24). Faculty respondents of corporate culture institutions were mainly employed part-time (n = 28), with primarily 1 or more years at current institution (n = 27). Corporate culture institutions descriptive statistics are below in Table 12.

Table 12: Descriptive Analysis for Corporate Culture by Demographic/Covariables

Descriptive Analysis for Corporate Culture by Demographic/Covariables

		Frequency	Percent (%)
Gender	Female	19	63.3%
	Male	10	33.3%
Age	31-50	16	53.3%
	Over 50	13	43.3%
Ethnicity	Non-White	5	16.6%
	White	24	80.0%
Employment Status	Part Time Faculty	28	93.3%
	Full Time Faculty	1	3.3%
Years Institution	Less than 1 year	2	6.7%
	1 or More years	27	90.0%

Descriptive Analysis for Dependent Variable by Demographic/Covariables

There were 131 participants, consisting of more male (*N* = 73) than female (*N* = 58) faculty respondents. Female faculty mean score (*M* = 2.89) measuring their perception of online learning was higher than male faculty (*M* = 2.66). All respondents reported between the ages of 31 - 50 (*N* = 78) and over the age of 50 (*N* = 53). There were no respondents under the age of 30. This was expected, as chiropractic faculty typically requires a terminal degree. As most respondents were White (*n* = 109), Non-White respondents (*n* = 21) possessed a higher mean score for perceptions of online learning (*M* = 2.93) compared to most participants. Even though respondents widely held employment status of part-time (*n* = 96), part-time faculty (*M* = 2.69) scored lower than full-time faculty (*M* = 3.00) in their perceptions of online learning. Faculty respondents who reported with 1 or more years at current institution (*n* = 104), exceeded those who reported less than one year (*n* = 18). Additionally, respondents with 1 or more years (*n* = 104) at current institution perception of online learning mean scores (*M* = 2.69) were higher than those who reported less than one year (*M* = 2.61) at their current institution. Additional descriptive statistics are in Table 13.

Table 13: Descriptive Analysis of Faculty Perceptions by Demographic/Covariables

Descriptive Analysis for Dependent Variable, Faculty Perception, by Demographic/Covariables

					95% CI			
		N	Mean	SD	LB	UB	Min	Max
Gender								
	Female	58	2.89	.822	[2.67, 3.10]		1.00	5.00
	Male	73	2.66	.996	[2.43, 2.89]		1.00	5.00
Age								
	31-50	78	2.76	.914	[2.55, 2.96]		1.00	5.00
	Over 50	53	2.76	.954	[2.50, 3.03]		1.00	5.00
Ethnicity								

Non-White	21	2.93	.870	[2.53, 3.32	1.00	4.00
White	109	2.63	.916	[2.47, 2.78]	1.00	5.00
Employment Status						
Part Time	102	2.69	.928	[2.51, 2.87]	1.00	5.00
Full Time	29	3.00	.896	[2.66, 3.34]	1.00	5.00
Years at Current Institution						
Less than 1	18	2.61	.557	[2.33, 2.89]	1.00	3.50
1 or More	104	2.70	.846	[2.53, 2.86]	1.00	5.00

Descriptive Analysis for Dependent Variable by Independent Variable

Study participants mostly identified their institutions with McNay's (1995) bureaucracy (*n* = 51) culture typology. Although enterprise (*n* = 7) had the lowest representative culture typology, its faculty reported the highest mean score in their perceptions of online learning (*M* = 3.21), compared to all other culture types.

Table 14: Descriptive Analysis for Dependent Variables by Independent Variable

Descriptive Analysis for Dependent Variables by Independent Variable

				95% CI			
	N	Mean	SD	LB	UB	Min	Max
Collegium	31	2.6774	.82207	[2.3759,	2.9790]	1.00	4.00
Bureaucracy	51	2.6176	.80987	[2.3899,	2.8454]	1.00	4.00
Enterprise	7	3.2143	1.1127	[2.1852,	4.2434]	1.50	5.00
Corporate	28	2.6429	.76808	[2.3450,	2.9407]	1.50	4.00
Undifferentiated	5	2.8000	.27386	[2.4600,	3.1400]	2.50	3.00

Quantitative Analysis of Research Questions

Data was collected and analyzed to identify faculty participants individual institutional culture typology and perceptions of online learning by use of a subscale acquired from Totaro et al. (2005) Faculty Perceptions of Online Learning and Nauffal's (2004) Institutional Culture instruments. Five research questions and associated hypotheses guided this investigation:

RQ_1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_1: There is a significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_2: There is a significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_3: There is a significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_4: There is a significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

H_0: There is no significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

RQ_5: What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution?

H_5: There is a significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution.

H_0: There is no significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution.

Research questions 1 – 4 were statistically tested using Pearson's (r) correlation coefficient and multiple regression for analyses. Pearson's (r) correlation coefficient assessed if the relationship strength between the independent variable and dependent variable were significant. According to Lee Rodgers & Nicewander (1988), Pearson's (r) assumes linearity and measures the extent to which both variables are proportional to one another. Pearson's (r) correlation coefficient ranges in value from -1 to +1, to indicate when one variable changes and its impact on the others. One determines the variables are changing in the opposite direction (completely negative relationship), 0 describes that when one variable changes, the other does

not (no relationship), and +1 indicates the variables are changing in the same direction (completely positive relationship).

Research question #5 statistical tests included one-way analysis of variance (ANOVA) and multiple regression. The one-way ANOVA determined if institutional culture (independent variable) had a statistically significant effect on faculty perceptions of online learning (dependent variable). ANOVA was appropriate for use in this study as some of the independent variables had more than two groups; the dependent variable (faculty perceptions of online learning) was ordinal and measured on a 5-point Likert scale.

A regression analysis for each of the outcome variables measured the predictor variable. With a categorical independent variable (institutional culture); regression coefficients were used to predict faculty perceptions of online learning (dependent variable). Multiple regression procedures tested the dependent variable, focusing on the independent variable while controlling for demographic and covariables. Data were collected and entered SPSS; the Durbin-Watson statistical test checked for the independence of observation. Additionally, observations for linearity, homoscedasticity, and normal distribution validated the appropriate use of multiple regression for this study.

Analysis of Research Question 1

Survey questions sent to the faculty of participating chiropractic institutions resulted in 131 responses to investigate the research question. Pearson's correlation, ANOVA, and multiple regression statistical tests provided the ability to perform analysis:

RQ 1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

Bivariate Statistics

Bivariate analysis using Pearson correlation tested the dependent variable, faculty perceptions, with the independent variable, institutional culture. Before conducting bivariate analysis, outliers were removed after examination of the data.

Bivariate Correlation between Dependent Variable and Collegium using Pearson's r

Faculty perceptions of online learning (M = 2.68, SD = .808) characteristics were not statistically correlated to collegium institutional culture (M = 3.41, SD = .818), r = -.072, p = .430. See Table 15 for results.

Table 15: Bivariate Correlation between Dependent Variable and Collegium Culture

Bivariate Correlation between Dependent Variable and Collegium Culture

		Faculty Perception	Collegium
Faculty Perception	Pearson Correlation	1	-.072
	Sig. (2-tailed)		.430
	N	122	122
Collegium	Pearson Correlation	-.072	1
	Sig. (2-tailed)	.430	
	N	122	122

Tests for Assumptions

Tests for normality, collinearity, autocorrelation, and homoscedasticity checked for skewness and kurtosis to examine normality and linearity in SPSS before inferential statistics. The assumption of homogeneity of variance was determined with Levene's test. Before descriptive analyses, the Levene's test results were at the .05 level with null hypothesis equal

variances acceptable for the present analysis. Lastly, the observation of difference of residual variance resulted in the identification and removal of outliers before analysis.

Normality

In SPSS, normality and distributions are considered normal when the absolute values of their skewness and kurtosis coefficients are less than twice its standard errors. Skewness and kurtosis statistics were analyzed to detect possible violations of data normality assumption. Three out of five distributions were slightly outside the range of normality. To preserve the nature of the data, no data transformations were conducted. However, steps to rehabilitate the non-normality of the data were initiated during hypothesis testing through analysis of the residuals. Skewness and kurtosis statistics were analyzed to detect possible violations of data normality assumption. The distribution for collegium was slightly outside the range of normality relative to skewness and kurtosis. Distribution of bureaucracy was within normal limits. Distribution for the enterprise was slightly outside the range of normality relative to skewness and kurtosis. Distribution of corporate had normal skewness, but its kurtosis was slightly platykurtic. Skewness and kurtosis coefficients are presented in Table 16.

Table 16**:** Skewness and Kurtosis Coefficients

Skewness and Kurtosis Coefficients

	N	Skewness		Kurtosis	
Variable	Statistic	Statistic	Std. Error	Statistic	Std. Error
Collegium	131	-.473	.212	-.743	.420
Bureaucracy	131	-.034	.212	-.708	.420
Enterprise	131	.448	.212	.994	.420
Corporate	131	-.286	.212	-.896	.420
Faculty Perception of Online Learning	131	.201	.212	-.190	.420

Steps to rehabilitate the non-normality of the data were initiated during hypothesis testing through analysis of the residuals. For faculty perception of online learning, the distribution was normal. The test of normality is shown in Table 17.

Table 17: Tests of Normality

Tests of Normality

	Institutional Culture	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Faculty Perception of Online Learning	Collegium	.167	33	.019	.936	33	.053
	Bureaucracy	.168	56	.000	.955	56	.036
	Enterprise	.148	7	.200*	.986	7	.982
	Corporate	.133	30	.186	.930	30	.049
	Undifferentiated	.367	5	.026	.684	5	.006

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Assumptions of homogeneity of variance were determined with Levene's test. Levene's test was conducted at the .05 level with null hypothesis equal variances was found not to be violated for the present analysis, $F(4,126) = 1.138$, $p = .342$. With a *p*-value greater than .05, Levene's test statistic was not significant; indicating the homogeneity of variance assumption was not violated. Test of homogeneity of variance is found in Table 18.

Table 18: Test of Homogeneity of Variances

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.138	4	126	.342

Collinearity

Based on coefficient outputs, collinearity statistics revealed VIF values of 1.056, 1.162, 1.032, 1.200, 1.094, and 1.104. According to Schwarz, Schwarz & Black (2014), a VIF under

the value of five is acceptable and indicates a low level of multicollinearity. Table 19 displays collinearity statistical results.

Table 19: Multicollinearity Coefficients

Multicollinearity Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Collinearity VIF
1	(Constant)	3.488	.629		5.547	.000		
	Gender	-.270	.180	-.145	-1.503	.135	.814	1.229
	Age	-.026	.168	-.014	-.155	.877	.956	1.046
	Ethnicity	-.164	.102	-.153	-1.612	.110	.840	1.190
	Employment Status	.423	.206	.190	2.047	.043	.882	1.134
	Years at Current Institution	-.107	.196	-.050	-.549	.584	.905	1.105
	Institutional Culture	.060	.074	.077	.811	.419	.835	1.198

a. Dependent Variable: Faculty Perception of Online Learning (Self-Discipline)

Autocorrelation

To test the linear regression model for autocorrelation, the Durbin-Watson test was performed. A Durbin-Watson value was of 2.038, which indicated the assumption of little or no autocorrelation among the data was met, as shown in Table 20.

Table 20: Linear Regression Model Summary

Linear Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	Durbin-Watson
1	.061[a]	.004	-.004	.92871	
2	.285[b]	.081	.037	.90958	2.038

a. Predictors: (Constant), Institutional Culture
b. Predictors: (Constant), Institutional Culture, Ethnicity, Age, Years at Current Institution, Employment Status, Gender
c. Dependent Variable: Faculty Perception of Online Learning

Homoscedasticity

The assumption of homoscedasticity was checked by examining the output from the Glejser test. The Glejser test checks for logical patterns in the differences of the errors by approximating a secondary regression where the absolute value of the residuals of its central equation is the dependent variable (Machado & Silva, 2013), in this case, faculty perceptions. As shown below in Table 21, based on coefficients presented in the statistical outputs, the dependent variable, faculty perceptions, value of .617 satisfied the assumption of homoscedasticity.

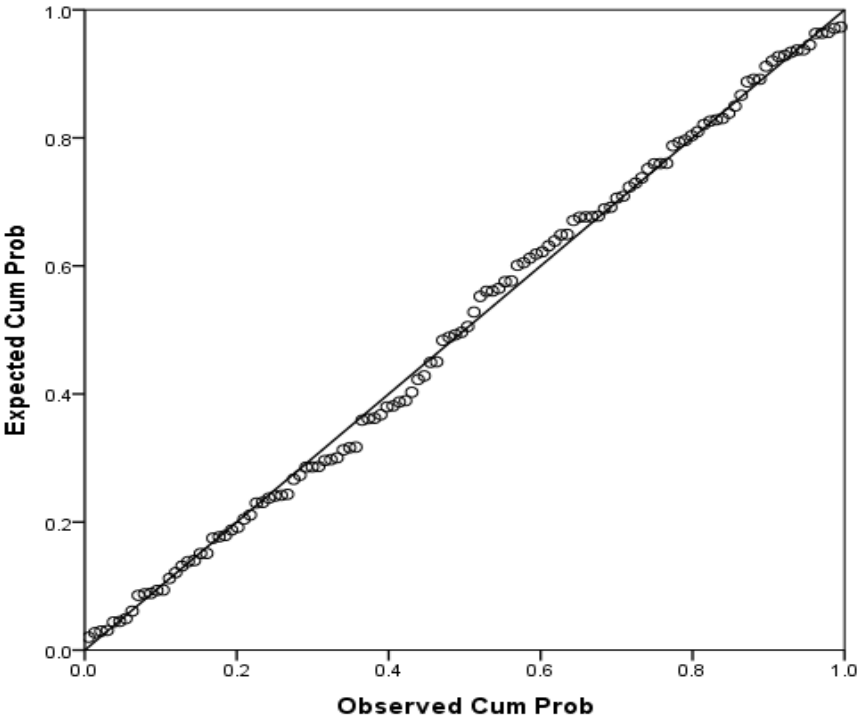
Table 21: Homoscedasticity Coefficients

Homoscedasticity Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.922	.177		5.218	.000
	Faculty Perception of Online Learning	.030	.061	.044	.502	.617

Residual Variance Observation

Before multivariate analyses, residual variances were analyzed. A residual variance is a difference between observed and model-predicted values of the dependent variable. After excluding nine statistical outliers, standardized residuals ranged from -2.05 to 1.93. The remaining residuals were normally distributed, as illustrated in a Normal Probability-Probability (P-P) Plot. Having values closer to the 45-degree line improves residuals ability to approximate a normal distribution. Figure 3 displays results of plotted residuals that were aligned within the acceptable 45-degrees. See Figure 3.



Note. Dependent variable = Faculty Perceptions of Online Learning

Figure 3: Normal P-P Plot of Standardized Residuals

A scatterplot of standardized residuals by standardized predicted values was generated. Results displayed formation of the points as similar to a rectangle shape across the middle of the figure. Therefore, the data met assumptions regarding normality, linearity, and homoscedasticity of residuals. Moreover, random distribution of values around the regression line supported the independence of error terms, which is another assumption of linear regression. See Figure 4.

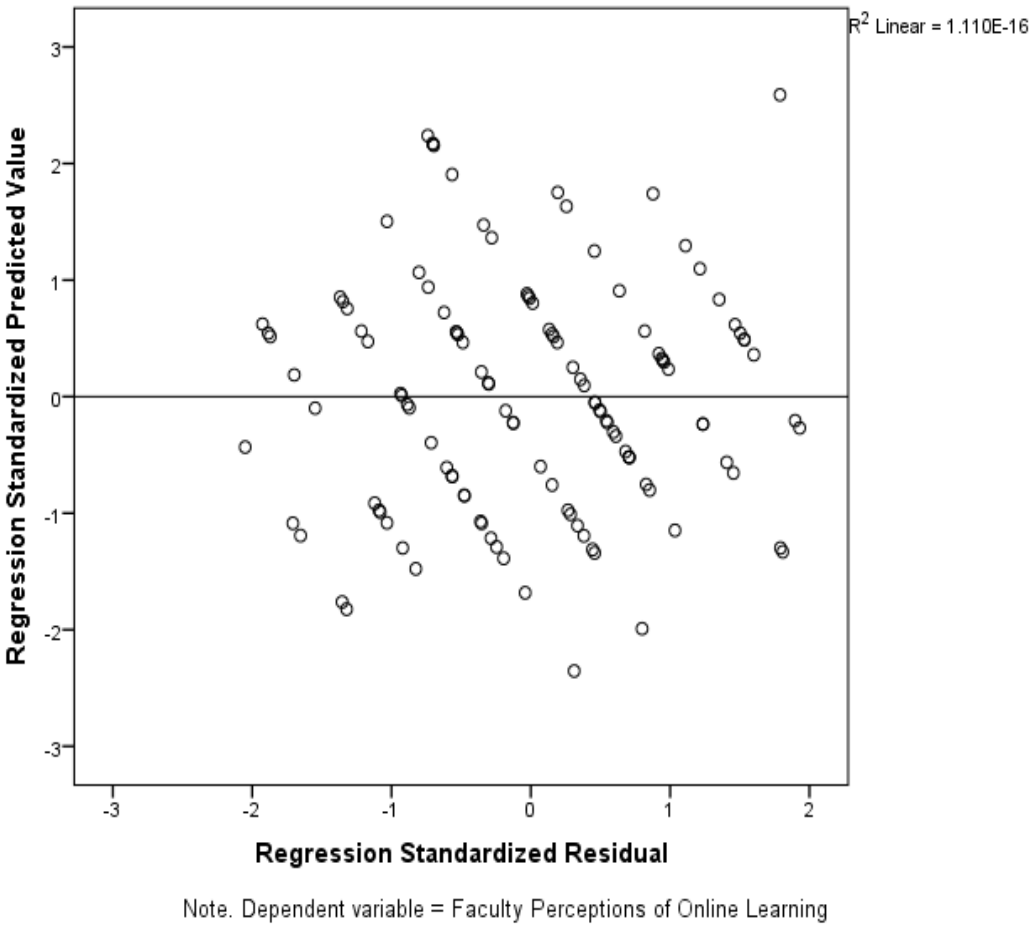


Figure 4: Regression Standardized Residuals by Standardized Predicted Values

Multivariate Statistics

Multiple regression analysis was performed to determine if control variables influenced faculty perceptions of online learning. More specifically, hierarchical multiple linear regression was employed to identify control variables as strong predictors of faculty perceptions. The independent variables were collegium, bureaucracy, enterprise, and corporate, institutional culture typology. The dependent variable was chiropractic faculty perceptions of online learning. Controls were demographics of age, gender, ethnicity, and covariables of employment status and years at the current institution.

In step #1 of the model, demographic and covariables of age, gender, ethnicity, employment status, and years at the current institution were entered. In Step #2 of the model, collegium, bureaucracy, enterprise, and corporate culture typology were entered. Beta coefficients for collegium institutional culture type was (β = -.019, t = -.200), p = .842. The regression analysis displayed collegium institutional culture negatively affected the significance of faculty perceptions of online learning when added to the model. For model 1, the adjusted R^2 was .103. In model 2, when Collegium culture type was added, adjusted R^2 decreased to .096. Collegium institutional culture type was not a significant predictor of faculty perceptions of online learning, p = .842.

Table 22: Coefficients for Faculty Perceptions with Collegium Culture

Coefficients for Faculty Perceptions with Collegium Culture

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.251	.305		10.663	.000
	Gender	-.370	.143	-.229	-2.580	.011
	Age Category	.007	.143	.005	.052	.959
	Ethnicity	-.545	.200	-.256	-2.733	.007
	Years at Current Institution	-.044	.201	-.020	-.221	.825
	Employment Status	.538	.173	.277	3.115	.002
2	(Constant)	3.304	.405		8.148	.000
	Gender	-.360	.152	-.223	-2.364	.020
	Age Category	.002	.146	.001	.017	.987
	Ethnicity	-.540	.202	-.253	-2.679	.008
	Years at Current Institution	-.043	.202	-.019	-.211	.834
	Employment Status	.542	.175	.280	3.103	.002
	Collegium	-.018	.092	-.019	-.200	.842

a. Dependent Variable: Faculty Perception of Online Learning (Self-Discipline)

H_{01} stated that there is no significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education. Collegium culture typology was not a significant predictor to faculty perceptions of online learning in chiropractic higher education, (β = -.019, t = -.200), p = .842. Therefore, the null hypothesis was not rejected.

Analysis of Research Question 2

Bivariate statistical test, Pearson's correlation, and multivariate statistical test, multiple regression, was employed on the following research question:

RQ 2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

Bivariate Statistics

Pearson correlations indicated faculty perception of online learning (M = 2.68, SD = .808) characteristics was significantly correlated to bureaucracy institutional culture (M = 3.76, SD = .649), r = -.309, p = .001.

Table 23: Bivariate Correlation between Dependent Variable and Bureaucracy Culture

Bivariate Correlation between Dependent Variable and Bureaucracy Culture

		Faculty Perception	Bureaucracy
Faculty Perception	Pearson Correlation	1	-.309**
	Sig. (2-tailed)		.001
	N	122	122
Bureaucracy	Pearson Correlation	-.309**	1
	Sig. (2-tailed)	.001	
	N	122	122

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

Multivariate Statistics

Beta coefficients for bureaucracy institutional culture type was (β = -.302, *t* = -3.541), *p* = .001. The regression analysis displayed bureaucracy institutional culture had no significant effect on faculty perceptions of online learning when added to the model. For model 1, the adjusted R^2 was .140. In model 2, when bureaucracy culture type was added, adjusted R^2 increased to .225. Bureaucracy institutional culture type was a significant, and negative, predictor to faculty perceptions of online learning, *p* = .001.

Table 24: Coefficients for Faculty Perceptions with Bureaucracy Culture

Coefficients for Faculty Perceptions with Bureaucracy Culture

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.251	.305		10.663	.000
	Gender	-.370	.143	-.229	-2.580	.011
	Age Category	.007	.143	.005	.052	.959
	Ethnicity	-.545	.200	-.256	-2.733	.007
	Years at Current Institution	-.044	.201	-.020	-.221	.825
	Employment Status	.538	.173	.277	3.115	.002
2	(Constant)	4.507	.459		9.824	.000
	Gender	-.293	.139	-.181	-2.112	.037
	Age Category	-.010	.136	-.006	-.075	.940
	Ethnicity	-.426	.193	-.200	-2.204	.030
	Years at Current Institution	-.036	.192	-.016	-.186	.853
	Employment Status	.609	.166	.314	3.674	.000
	Bureaucracy	-.376	.106	-.302	-3.541	.001

a. Dependent Variable: Faculty Perception of Online Learning (Self-Discipline)

H_{02} stated that there is no significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education. Bureaucracy culture typology was a significant predictor to faculty perceptions of online learning

in chiropractic higher education, (β = -.302, *t* = -3.541), *p* = .001. Therefore, the null hypothesis was rejected.

Analysis of Research Question 3

Bivariate statistical test, Pearson's correlation, and multivariate statistical test, multiple regression, was employed on the following research question:

RQ 3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

Bivariate Statistics

Faculty perceptions of online learning (*M* = 2.68, *SD* = .808) characteristics were not correlated to enterprise institutional culture (*M* = 2.78, *SD* = .787), *r* = .160, *p* = .078.

Table 25: Bivariate Correlation between Dependent Variable and Enterprise Culture

Bivariate Correlation between Dependent Variable and Enterprise Culture

		Faculty Perception	Enterprise
Faculty Perception	Pearson Correlation	1	.160
	Sig. (2-tailed)		.078
	N	122	122
Enterprise	Pearson Correlation	.160	1
	Sig. (2-tailed)	.078	
	N	122	122

Multivariate Statistics

Beta coefficients for enterprise institutional culture type was (β = .119, *t* = 1.368), *p* = .174. The regression analysis displayed enterprise institutional culture had no significant effect on faculty perceptions of online learning when added to the model. For model 1, the adjusted R^2

was .140. In model 2, when enterprise culture type was added, adjusted R^2 increased to .154. Enterprise institutional culture type was not a significant predictor of faculty perceptions of online learning, p = .174.

Table 26: Coefficients for Faculty Perceptions with Enterprise Culture

Coefficients for Faculty Perceptions with Enterprise Culture

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.251	.305		10.663	.000
	Gender	-.370	.143	-.229	-2.580	.011
	Age Category	.007	.143	.005	.052	.959
	Ethnicity	-.545	.200	-.256	-2.733	.007
	Years at Current Institution	-.044	.201	-.020	-.221	.825
	Employment Status	.538	.173	.277	3.115	.002
2	(Constant)	2.855	.419		6.807	.000
	Gender	-.356	.143	-.220	-2.487	.014
	Age Category	-3.776E-6	.143	.000	.000	1.000
	Ethnicity	-.501	.201	-.235	-2.490	.014
	Years at Current Institution	-.025	.201	-.011	-.125	.901
	Employment Status	.529	.172	.273	3.075	.003
	Enterprise	.122	.089	.119	1.368	.174

a. Dependent Variable: Faculty Perception of Online Learning (Self-Discipline)

H_{03} stated that there is no significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education. Enterprise culture typology was not a significant predictor to faculty perceptions of online learning in chiropractic higher education, (β = .119, t = 1.368), p = .174. Therefore, the null hypothesis was not rejected.

Analysis of Research Question 4

Bivariate statistical test, Pearson's correlation, and multivariate statistical test, multiple regression, was employed on the following research question:

RQ 4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

Bivariate Statistics

Faculty perception of online learning (M = 2.68, SD = .808) characteristics were not correlated to enterprise institutional culture (M = 3.12, SD = .973), r = .000, p = 1.00.

Table 27: Bivariate Correlation between Dependent Variable and Corporate Culture

Bivariate Correlation between Dependent Variable and Corporate Culture

		Faculty Perception	Corporate
Faculty Perception	Pearson Correlation	1	.000
	Sig. (2-tailed)		1.000
	N	122	122
Corporate	Pearson Correlation	.000	1
	Sig. (2-tailed)	1.000	
	N	122	122

Multivariate Statistics

Beta coefficients for corporate institutional culture type was (β = .034, t = .379), p = .705. Regression analysis revealed that a corporate institutional culture had no significant effect on faculty perceptions of online learning when added to the model. For model 1, the adjusted R^2 was .140. In model 2, when corporate culture type was added, adjusted R^2 slightly increased to .141. Corporate, institutional culture type was not a significant predictor of faculty perceptions of online learning, p = .705.

Table 28: Coefficients for Faculty Perceptions with Corporate Culture

Coefficients for Faculty Perceptions with Corporate Culture

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.251	.305		10.663	.000
	Gender	-.370	.143	-.229	-2.580	.011
	Age Category	.007	.143	.005	.052	.959
	Ethnicity	-.545	.200	-.256	-2.733	.007
	Years at Current Institution	-.044	.201	-.020	-.221	.825
	Employment Status	.538	.173	.277	3.115	.002
2	(Constant)	3.169	.374		8.484	.000
	Gender	-.363	.145	-.224	-2.502	.014
	Age Category	.008	.144	.005	.058	.954
	Ethnicity	-.555	.202	-.260	-2.749	.007
	Years at Current Institution	-.051	.203	-.023	-.252	.801
	Employment Status	.549	.176	.283	3.123	.002
	Corporate	.028	.074	.034	.379	.705

a. Dependent Variable: Faculty Perception of Online Learning (Self-Discipline)

H_{04} stated that there is no significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education. There was no significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, ($\beta = .034$, $t = .379$), $p = .705$. Therefore, the null hypothesis was not rejected.

Analysis of Research Question 5

Bivariate statistical test, Pearson's correlation, and ANOVA, and multivariate statistical test, multiple regression, was employed on the following research question:

RQ 5: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

Bivariate Statistics

Bivariate Correlation between Independent and Dependent Variables using ANOVA

A one-way ANOVA was conducted to determine if statistically significant differences existed between institutional culture typologies, concerning faculty perceptions of online learning. At the $p < .05$ level, collegium influenced faculty perceptions, $F(8, 122) = 2.054$, $p = .045$.

Table 29: ANOVA Comparison of Means for Faculty Perceptions

ANOVA Comparison of Means for Faculty Perceptions

		Sum of Squares	df	Mean Square	F	Sig.
Collegium	Between Groups	10.304	8	1.288	2.054	.045
	Within Groups	76.497	122	.627		
	Total	86.802	130			
Bureaucracy	Between Groups	4.389	8	.549	1.359	.221
	Within Groups	49.250	122	.404		
	Total	53.640	130			
Enterprise	Between Groups	8.359	8	1.045	1.804	.083
	Within Groups	70.662	122	.579		
	Total	79.021	130			
Corporate	Between Groups	6.727	8	.841	.877	.538
	Within Groups	117.031	122	.959		
	Total	123.759	130			

Post hoc comparisons using Tukey HSD revealed no statistically significant difference between the variables. The differences between variable means were likely due to chance as opposed to manipulation of the independent variable.

Bivariate Correlation between Independent and Dependent Variables using Pearson's r

Bivariate correlations, using Pearson's *r*, were computed to assess the relationships between chiropractic faculty institutional culture and their perceptions of online learning. Predictor variables were comprised of four institutional culture typologies: collegium, bureaucracy, enterprise, and corporate. Faculty perceptions of online learning were the criterion variable. There was no significant correlation between values from institutions with collegium culture $r(129) = .02$, $p = .834$, enterprise culture, $r(129) = .08$, $p = .361$, or corporate culture, $r(129) = .08$, $p = .338$. However, there was a significant and negative relationship between bureaucracy culture institutions and its faculty perceptions of online learning in chiropractic higher education, $r(129) = -.18$, $p = .041$. Bivariate correlations for the relationships tested are presented in Table 30.

Table 30: Bivariate Correlation between Independent and Dependent Variables

Bivariate Correlation between Independent and Dependent Variables

	1	2	3	4	5
Faculty Perception of Online Learning (1)	__	.02	-.18*	.08	.08
Collegium (2)		__	.32***	-.27**	.17*
Bureaucracy (3)			__	-.43***	-.17
Enterprise (4)				__	-.31***
Corporate (5)					__

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

As the perception of faculty from bureaucracy culture institutions increased, there was a corresponding decrease in their perceptions of online learning. The coefficient of determination (r^2) = .0324 determined that 3.24% of the variance in faculty perceptions of online learning be explained by with bureaucracy culture institutions. Figure 5 exhibits a scatterplot summarizing the results.

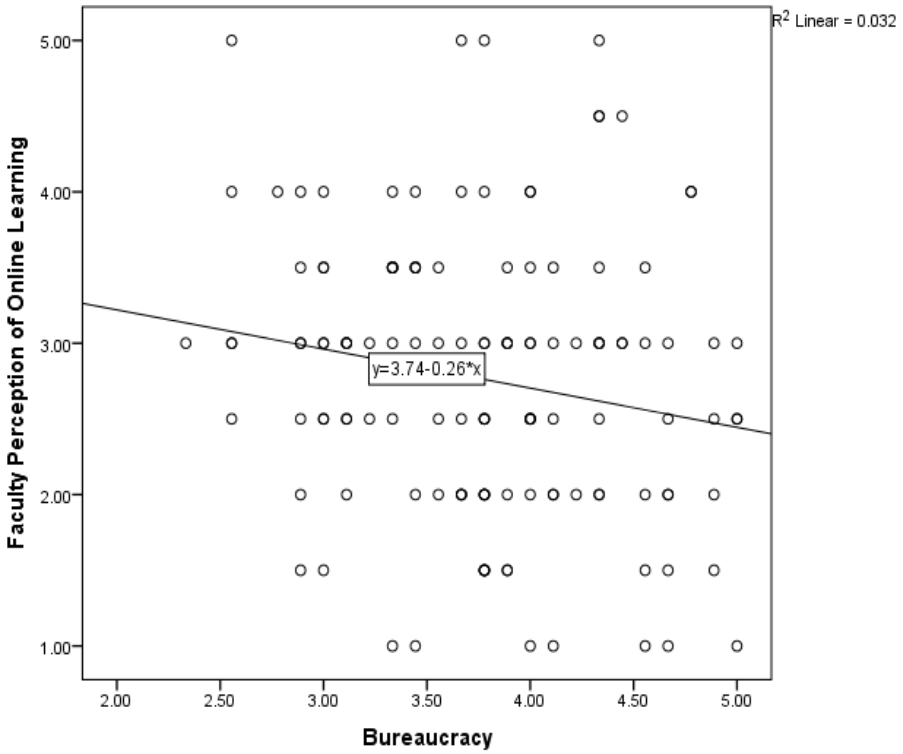


Figure 5: Scatterplot Bureaucracy and Faculty Perceptions of Online Learning

Multivariate Statistics

Hierarchical multiple linear regression was employed to determine relationships between institutional culture and its faculty perceptions of online learning in chiropractic higher education. In Step 1 of the model, demographic variables were entered, and results revealed statistical significance, $F(5, 121) = 3.78$, $p = .003$, $R^2 = .14$. Demographic variables explained 14% of the variance in faculty perceptions of online learning. Demographic variables that contributed significantly to Step 1 of the model included gender, ethnicity, and employment status. There was a significant F-change from Step 1 to Step 2 of the model, $F(4, 112) = 3.22$, $p = .015$, R^2 change = .09. When added, institutional culture typologies significantly explained 9% more variance than demographic variables alone. Therefore, the model can explain 23% of the variance in faculty perceptions of online learning. Specifically, female faculty had higher

perceptions of online learning than male faculty, and gender was significantly and negatively related to faculty perceptions of online learning (β = -0.21, t = -2.23), p = .028. Ethnicity was significantly and negatively related to faculty perceptions of online learning, (β = -.20, t = -2.15), p = .034, as Non-White faculty had significantly higher perceptions of online learning than White faculty. Employment status was significantly and positively related to faculty perceptions of online learning, (β = .30, t = 3.42), p = .001, as full-time faculty had significantly higher perceptions of online learning than part-time faculty. However, age, (β = .004, t = 0.05), p = .964, and years at current institution, (β = -.02, t = -0.18), p = .855, were not significantly related to faculty perception of online learning.

Bureaucracy institutional culture was statistically significant and negatively related to faculty perceptions of online learning, (β = -0.33, t = -3.18), p = .002. As bureaucracy institutional culture decreased by 1 standard deviation, faculty perceptions of online learning increased by 0.33 standard deviations. Collegium (β = 0.07, t = 0.73), p = .47, enterprise, (β = -0.01, t = -0.11), p = .909, and corporate, (β = -0.04, t = -0.42), p = .676, institutional culture typologies were not significantly related to faculty perceptions of online learning.

H_{05} stated that there is no significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for demographic variables of age, gender, ethnicity, employment status, and years at the current institution. However, bureaucracy institutional culture was statistically significant and negatively related to faculty perceptions of online learning, (β = -0.33, t = -3.18), p = .002. Collegium institutional culture was not significantly related to faculty perceptions of online learning, (β = 0.07, t = 0.73), p = .47. Enterprise institutional culture was not significantly related to faculty perceptions of online

learning, (β = -0.01, t = -0.11), p = .909. Corporate institutional culture was not significantly related to faculty perceptions of online learning, (β = -0.04, t = -0.42), p = .676. Therefore, the null hypothesis was partially rejected.

Three demographic variables were significantly related to the outcome variable of faculty perceptions of online learning. Gender, with (β = -0.206, t = -2.23), p = .028, was significant, and negatively, related to faculty perceptions of online learning. Female faculty mean score (M = 2.89) measuring their perception of online learning was higher than male faculty (M = 2.66). Ethnicity, with (β = -0.199, t = -2.15), p = .034, was significant, and negatively, related to faculty perceptions of online learning. Non-White (M = 2.93) faculty had significantly higher perceptions of online learning compared to White faculty (M = 2.63). Employment status, with (β = .303, t = 3.42), p = .001, was significant, and positively, related to faculty perceptions of online learning. Part-time faculty (M = 2.69) scored lower than full-time faculty (M = 3.00) in their perceptions of online learning.

Age, (β = .004, t = .045), p = .964, and faculty years at their current institution, (β = -.016, t = -.183), p = .855, were not significantly related to faculty perceptions of online learning. The regression model explained 23% of the variance in faculty perceptions of online learning.

Table 31: Coefficients for Faculty Perception and Institutional Culture

Coefficients for Faculty Perception and Institutional Culture

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	3.25	.305		10.66	.000
Gender	-.370	.143	-.229	-2.58	.011

Age Category	.007	.143	.005	.052	.959
Ethnicity	-.545	.200	-.256	-2.73	.007
Years at Current Institution	-.044	.201	-.020	-.221	.825
Employment Status	.538	.173	.277	3.12	.002
R^2		.14**			
F for change in R^2		3.78**			
2 (Constant)	4.56	.844		5.41	.000
Gender	-.332	.149	-.206	-2.23	.028
Age Category	.006	.140	.004	.045	.964
Ethnicity	-.425	.198	-.199	-2.15	.034
Years at Current Institution	-.036	.195	-.016	-.183	.855
Employment Status	.587	.172	.303	3.42	.001
Collegium	.069	.095	.070	.725	.470
Bureaucracy	-.411	.129	-.330	-3.18	.002
Enterprise	-.012	.104	-.012	-.114	.909
Corporate	-.034	.082	-.042	-.419	.676
R^2		.23*			
F for change in R^2		3.22*			

Note. Dependent Variable = Faculty Perception of Online Learning.

H_{05} stated that there is no significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, position, and years at the institution. Bureaucracy institutional culture was statistically significant and negatively related to faculty perceptions of online learning, (β = -0.33, t = -3.18), p = .002. Three demographic variables, gender, (β = -0.206, t = -2.23), p = .028, ethnicity, (β = -0.199, t = -2.15), p = .034, and employment status, (β = .303, t = 3.42), p = .001, were significantly related to the outcome variable of faculty perceptions of online learning. Therefore, the null hypothesis was partially rejected. A summary of the hypotheses tested, and their outcomes are presented below in Table 32.

Table 32: Summary of Hypotheses Tested and Outcomes

Summary of Hypotheses Tested and Outcomes

Hypothesis	Statistical	Significance	Outcome

	Test		
H_1: There is a significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.	Pearson r Multiple Regression	p = .430 p = .842	Not Supported
H_2: There is a significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.	Pearson r Multiple Regression	p = .001 p = .001	Supported
H_3: There is a significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.	Pearson r Multiple Regression	p = .078 p = .174	Not Supported
H_4: There is a significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education	Pearson r Multiple Regression	p = 1.00 p = .705	Not Supported
H_5: There is a significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution.	ANOVA Multiple Regression	p-values range = .045 to .538 p-values range = .001 to .909	Partially Supported

The survey instrument used to determine these findings consisted of Nauffal's (2004) Institutional Culture and the Faculty Perceptions of Distance Education Survey (Totaro et al., 2005). This quantitative correlational study was developed, in part, by use of data collected from faculty at participating Council of Chiropractic Education (CCE) accredited chiropractic higher education institutions, responses to a web-based survey. Permission was obtained from six institutions, resulting in responses from 131 faculty participants. The sample consisted of 44.3% female and 55.7% male faculty. The majority of faculty was between the ages of 31-50 (59.5%), whereas 40.5% reported over the age of 50. Most of the respondents were White 84%, compared

to 16% who reported a Non-White ethnicity. Regarding employment status, 73.3% held part-time positions, and 26.7% reported as full-time, with most instructing at their current institutions more than one year (84.7%). Based on McNay's (1995) classification of institutional culture, participating chiropractic faculty for this study mostly identified their institutions with characteristics of the bureaucracy (n = 56) typology and least identified with enterprise (n = 7) characteristics. However, respondents who their institution as having an enterprise culture, presented with the highest scores in their perceptions of online learning (M = 3.21). Statistical analysis of the collected data supported rejection of four of the five null hypotheses tested. These findings require further interpretation, discussion, and conclusions, along with an examination of their implications on how these results can advance the field of online learning in higher education. These considerations, as well as limitations of the study, recommendations for future research, and implications, are addressed in Chapter V.

CHAPTER V: DISCUSSION AND CONCLUSIONS

The purpose of this study was to examine the relationship between institutional culture and faculty perceptions of online learning in chiropractic higher education among CCE accredited institutions. This study aimed to inform chiropractic higher education leadership of institutional culture and faculty perceptions of online learning to best meet the requirements of institutional accrediting bodies and enhance future faculty and student's online learning experiences. Chapter V is the final chapter and presents interpretations of Chapter IV findings, describe solutions to address limitations, provide recommendations for future research, and the study's implications. Research questions addressed in this study were:

RQ_1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

RQ_2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

RQ_3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

RQ_4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

RQ_5: What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution?

Interpretation of Findings

Introduction

While the focus of this study was to identify relationships between institutional culture and faculty perceptions of online learning, it was clear the institutional culture variable had a profound impact on online learning. Research questions 1 – 4 were analyzed using Pearson's correlation and multiple regression. Research question 5 was analyzed using Pearson's correlation, ANOVA, and multiple regression. One hypothesis was supported, and one was partially supported. A subscale, self-discipline, was used to measure faculty perceptions of online learning. The self-discipline subscale consisted of survey question #54: "*Tests in an online course are more difficult for faculty to administer*." and #57 "*Online courses require the student to be more self-disciplined than in traditional courses*." There was a statistically significant and negative relationship between institutions with bureaucracy culture and its faculty perceptions of online learning in chiropractic higher education. As the perception of bureaucracy culture increased, there was a corresponding decrease in faculty perceptions of online learning. Collegium, enterprise, and corporate, institutional cultures were not statistically related to faculty perceptions of online learning.

The demographic variables of gender, ethnicity, and employment status were significantly related to the outcome variable of faculty perceptions of online learning. Gender was significant, and negatively, related to faculty perceptions of online learning. Female faculty had significantly higher perceptions of online learning compared to male faculty. Ethnicity was significant, and negatively, related to faculty perceptions of online learning. Non-White faculty had significantly higher perceptions of online learning compared to White faculty. Employment status was significant, and positively, related to faculty perceptions of online learning. Full-time

faculty had significantly higher perceptions of online learning compared to part-time faculty. Age and faculty years at their current institution were not significantly related to faculty perceptions of online learning.

Conceptual frameworks were provided by Christensen's (1997) Disruptive Innovation theory, Festinger's (1957) theory of Cognitive Dissonance and McNay's (1995) Model of Institutional Culture. Christensen's (1997) disruptive innovation theory described a product that enters the market and disturbed a process, procedure or replaces an existing product. Festinger's (1957) theory of cognitive dissonance purported that when individuals are uncomfortable with change, they will rationalize the situation in the direction of most resistance. McNay's (1995) institutional culture model outlined four culture types and purported the balance and shifting of these culture types to guide faculty actions and impact change implementation. A knowledge gap was identified in chiropractic higher education leader's lack of complete awareness of faculty perceptions of online learning, made apparent in its absence in online education. Results of this study identified relationships between institutional culture and faculty perceptions of online learning.

Higher Education Institutional Culture

Several institutional culture models are noted in the literature to examine higher education institutions. Institutional culture models provided a conceptual framework to recognize and appraise a college or university's culture. Schein (1992) defined organizational culture as "a set of basic tacit assumptions that a group of people shares about how the world is, and ought to be, and that determines their perceptions, thoughts, feelings and, to some degree, their overt behavior." An institution's culture forms one's perspective of the organization (Czerniewicz & Brown, 2009) and impacts innovation acceptance (McNay, 1995). Considering

the institutional culture type of a university is essential when addressing strategic initiative implementation, institutional goal attainment, and leadership's decision-making approach. Higher education scholars expressed the most desirable policy direction of higher education institution as McNay's (1995) enterprise and collegium culture classifications (Davies, 1997; Czerniewicz & Brown, 2009). Enterprise and collegium culture are believed as most suitable for innovation implementation due to the flexibility and variety of instructional pedagogies required to foster effective online learning (Davies, 1997; Czerniewicz & Brown, 2009). An institution's culture affects faculty perceptions of online class structure in its determining the role in which faculty is placed during the initial decision-making process. Christensen's (1997) theory of disruptive innovation suggested successful innovations are decided from bottom-up to ensure buy-in from those tasked with its daily use. However, according to McNay's (1995), decisions are made top-down in some institutions. Therefore, institutions that practice decision making of online learning by use of a top-down methodology are likely to face resistance from faculty, as they were not involved in its decision-making and implementation planning. Festinger's (1957) theory of cognitive dissonance underpins faculty response to innovation that is disruptive, which could further hinder an online program's success.

Chiropractic faculty that participated in this study mostly identified their institutions as McNay's (1995) bureaucracy (n = 56, M = 2.72, SD = 0.948), followed by collegium (n = 33, M = 2.68, SD = 0.908), corporate (n = 30, M = 2.80, SD = .952), and enterprise (n = 7, M = 3.21, SD = 1.1127) institutional culture with the lowest representation. Bureaucracy was the sole institutional culture found statistically related to faculty perceptions of online learning, (β = -0.33, t = -3.18), p = .002, as bureaucracy institutional culture decreased by one standard deviation, faculty perceptions of online learning increased by 0.33 standard deviations. This

finding aligned with Czerniewicz & Brown (2009) predisposition of enterprise and corporate culture types as most favorable in perceptions of online learning innovation. Moreover, Owusu-Ansah et al. (2011) contended that universities known to uphold traditional culture are less conducive to the introduction of innovative technologies, experience prohibitive factors in its acceptance of online learning and instructional technologies. McNay's (1995) bureaucracy culture type is characterized by loose policy definition and tight control over implementation. It allows a degree of independence for individuals in the selection of goals and objectives within a context of precise rules for implementation. Bureaucracy institutions rely on regulatory agencies to set standards, decision-making is rule-based, centered on standard procedures, and numbers driven (McNay, 1995). As this study found a significantly wide margin between respondents who identified their institutions as bureaucracy (n = 56) compared to all other culture types, enterprise (n = 7) was identified as the least recognized culture type, yet its faculty displayed the highest score in positive perception of online learning. These results also supported Davies (1997) and Czerniewicz & Brown (2009) argument of individuals within enterprise institutions as best suited to adopt innovative change. Moreover, bureaucracy institutions rely heavily on top-down decision-making, and Christensen's (1997) theory of disruptive innovation envelopes this concept in maintaining that successful adoption and perception of innovation requires bottom-up implementation.

In recent years, education scholars have increasingly examined online learning and its associated contexts. In a dissertation by Nauffal (2004), the author identified principal organizational features and management cultures in four traditionally and historically grounded Lebanon universities and examined its impact on performance outcomes. The results of this study found respondents primarily categorized their institution as McNay's (1995) bureaucracy

culture types (85%) among all other institutional cultures. Nauffal did not support bureaucracy as a dominant institutional culture among the sampled population, as there was a minimal representation of females. McNay described bureaucracy cultures as having equal opportunity, where operating procedures are the responsibility of all its members. This was not the case with Nauffal's participating universities, as power and control were primarily distributed among males within the institutions. Nauffal also disagreed with bureaucracy as the primary representation of culture types as managers revealed a culture of inconsistent treatment within their institutions. McNay characterizes bureaucracy culture as encompassing decision-making and strategies to follow pre-determined rules and not rely on personal relationships or feelings in institutional decisions. Similar to Nauffal's findings, this study consisted of mostly male faculty (n = 73) compared to female (n = 58). However, bureaucracy demographics were evenly distributed between male (n = 27) and female (n = 28) respondents yet found to be statistically significant and negatively related to faculty perceptions of online learning. As Nauffal's study did not examine online learning specifically, its results acknowledge how a bureaucracy culture in higher education institutions affect performance outcomes of students and influences faculty perceptions. Nauffal recommended future researchers to investigate the way these culture types determine institutional change and the efficiency of its implementation.

Faculty Perceptions of Online Learning

As online learning is increasingly becoming a strategic goal in higher education, faculty perceptions of its usefulness are integral to the success of programmatic implementation and institution's ability to meet strategic goals. Although Festinger (1957) theory of cognitive dissonance was introduced before online learning, its underpinnings support faculty prior experiences as guiding their perception of online learning. Christensen's (1997) theory supports

plausible faculty view of online learning as an inferior product, replacing traditional residential learning (Chen & Tseng, 2012; Mazoue, 2014), losing its position within higher education (Windes & Lesht, 2014), which defines disruptive innovation. When all McNay's (1995) institutional culture types were accounted for, bureaucracy was statistically significant about faculty perceptions of online learning. A subscale, self-discipline, was used to measure faculty perceptions of online learning. The self-discipline subscale consisted of survey question #54: "*Tests in an online course are more difficult for faculty to administer.*" and #57 "*Online courses require the student to be more self-disciplined than in traditional courses.*" Statistical tests revealed that when bureaucracy institutional culture decreased by one standard deviation, faculty perceptions of online learning increased by 0.33 standard deviations. This study prematurely hypothesized that chiropractic institutions would predominately possess characteristics aligned with McNay's collegium institutional culture. This created an assumption that chiropractic's absence in online learning is due to faculty perceptions of the innovation. Instead, statistical results indicated chiropractic's absence in online learning was likely due to institutional culture, as faculty perceptions of online learning were not statistically significant until bureaucracy institutional culture was added to multiple regression models ($\beta = 0.07$, $t = 0.73$), $p = .47$.

Furthermore, the subscale used in this study to measure faculty perception, self-discipline, displayed faculty perceptions decreasing as bureaucracy institutional culture scores increased. The subscale consisted of two survey items: questions #57: "*Online courses require the student to be more self-disciplined than in traditional courses*" and #54: "*Tests in an online course are more difficult for faculty to administer.*" Results indicated faculty from bureaucracy institutions were likely to disagree or strongly disagree with items #57 and #54. Faculty and students alike must have self-discipline and autonomy in an online course (Vesely, Bloom &

Sherlock, 2007) as participation in online discussions and interactions are characteristically asynchronous. McNay's (1995) characterized bureaucracy institutional culture as having loose policy definition and tight control over the implementation. Therefore, online instructors who identified their institution as a bureaucracy culture may not experience or believe that self-discipline is affected by whether students take courses online or on-ground. They are likely to have tight deadlines and strict policies in place to hinder full autonomy and self-discipline.

In a dissertation by Abraham's (2014), the author investigated faculty and administrator perceptions of online learning, compared to traditional face-to-face instruction, by exploring factors impacting online instruction. Results of Abraham's study suggested positive relationships between faculty number of years at current institution and gender as related to faculty perception of online engagement. Abraham examined public universities, private learning institutions, and community colleges. Conversely, Abraham's study revealed no significant difference in perceptions of faculty by type of higher education institution (p = .463), between administrators and faculty (p = .428), or faculty years at current institution (p = .895). However, Abraham's study found perceptions of male faculty (M = 3.65, SD = .80) regarding online student engagement significantly higher when compared to female faculty (p = .004). Abraham's results contrast with Windes & Lesht (2014) who found institutional type as influential to faculty perceptions. These authors compared faculty attitudes toward teaching online across institution type, including community colleges and four-year public and private institutions. Windes & Lesht research concluded that faculty from public institutions agreed with online student engagement as more important in online courses, compared to the ground or traditional courses in larger numbers (48%) than the faculty of community college (33%) and private institutions (28%). As Abraham (2014) and Windes & Lesht (2014) defined institutional

types based on degree offerings, their studies were performed during similar technological epochs, measured with similar survey instruments, yet conclusions were profoundly dissimilar. These studies also provided an additional context for examining an institutions' culture and degree offering, as opposed to solely the type of institution by degree offerings.

Gender, ethnicity, and employment status, were significantly related to this study's outcome variable of faculty perceptions of online learning. Age and faculty years at their current institution were not substantially related to faculty perceptions of online learning. Recent studies (Deem, 2003; Bagilhole & White, 2011; de la Cruz, 2011 Overdyke, 2013; Visser, 2015) have shown gender and ethnicity as significant when measuring institutional culture. However, education researchers are showing more interest in examining faculty gender and its relationship to technology use. For example, gender and intentional technology usage were examined by Zelick's (2013) exploratory study, which found a significant relationship between faculty gender and their perceptions of technology and intentional use. Zelick faculty population consisted of more male (n = 96) than female (n = 81), but female faculty had higher perceptions of technology and utilized Web 2.0 technology more often. Additionally, in a dissertation by Marrs (2013), the author found that more female faculty accepted mobile learning (m-learning) when compared to male faculty, although not statistically significant.

Ethnicity was statistically significant as Non-White faculty members had higher perceptions of online learning than White/Caucasian faculty. In a dated study Lewis, Snow, Farris, Levin & Greene (1999) purported minority faculty was less likely to participate in distance learning. In 2008, Tabata & Johnsrud further examined these claims by accessing data from the National Center for Education Statistics. Here, the authors discovered annual base salaries of minority faculty were much less when compared to their white counterparts. Tabata

& Johnsrud concluded that financial strain might have contributed to Lewis et al. (1999) initial findings.

Faculty respondent's employment status was significant in this study. Full-time faculty exhibited increased positive perceptions of online learning, compared to part-time faculty. The amount of time faculty has worked at the university, and their employment status is important as the faculty experience different amounts of time spent on campus affecting their level of interactions and experiences within the institution. This results in confounding distinctions between adjunct and full-time faculty's observation and classification of the institution's culture. According to study that examined factors predicting the full time and part time faculty participation in online instruction, Akroyd, Bracken, Patton, & Jackowski (2012) found the difference as faculty level of education. Interestingly, the authors discovered faculty who possessed a bachelor's degree, or less, were more likely to instruct online compared to faculty with graduate degrees. Moreover, subject and discipline were significant, and Akroyd et al. found faculty involved with the arts and science were more likely to instruct online, compared to the faculty of technical and vocational disciplines.

Age and years at the current institution were not statistically significant. Age was included as a covariable to provide additional details regarding faculty who may possess prior online learning experiences and encounters. Faculty with previous experience in online learning and instructing was an vital consideration to give more insight into their understanding of student's preference to take online courses and faculty interest in instructing online courses due to its flexibility in class times. This was essential in identifying faculty consideration of how online learning benefits nontraditional students and online faculty. Faculty with limited online experience often expressed difficulty in administering online learning activities appropriate for

student learning (Mandernach, Mason, Forrest & Hackathorn, 2012). Likewise, faculty perceptions of online learning were influenced by their understanding of technical support, academic honesty, the reliability of online testing systems, and student and instructor technological comfort levels (Okunji & Hill, 2014; Lichoro, 2015). Tabata & Johnsrud (2008) study of predictive factors for faculty to instruct online found that as faculty age increased, their likelihood of instructing online increased. Contrary to previous perception study's findings of gender and age influencing attitudes and perceptions toward technology (Liu & Wilson, 2001; Huang, 2002), academic unit (Kim & Lee, 2008; and Lee, 2007), and its role in education (Flynn, Concannon, & Bheachain, 2005; Martens, Bastiaens, & Kirschner, 2007; Orly, 2007).

Significant Results Related to Research Questions

In reviewing the literature, several principal findings aligned with this study. In a recently published study, Kelly & Brennan (2015) suggested university's that exhibited collegium culture characteristics as appropriate for higher education innovation. The authors also suggested for institutions to significantly reduce bureaucracy culture characteristics and ensure institutions possess no characteristics associated with corporate culture for innovative change to occur. During an examination of their study's participating institutions, Kelly & Brennan found an abundance of bureaucracy characteristics as the primary culture, consisting of bottom-up academics, hierarchical structure, and a propensity to maintain close control of implementation. The authors acknowledged that a slight amount of bureaucracy culture was needed, however, at a minimal level, to protect students and faculty. Their recommendations aligned with Nauffal (2004), Davies (1997), and Czerniewicz & Brown (2009) in the necessity for collegium culture characteristics to outweigh all others, however, Kelly & Brennan suggested bureaucracy and corporate culture types may slightly co-exist where appropriate. These studies

examined innovation implementation within higher education and cohesively propose that without collegium culture qualities, a university will likely face resistance during these initiatives. In a qualitative examination of universities with bureaucracy characteristics, Nauffal (2004) found it more challenging to navigate for faculty and staff who supported innovation; they trailed behind other institutions in their ability to adapt to change, incorporate inclusiveness, and practice diversity. Institutions are maintaining close control over implementation, focusing on knowledge acquisition, and discipline-based are likely to face difficulty in their attempts to progress (Davies, 1997). Institutions with unstructured bureaucracy qualities, Czerniewicz & Brown (2009) found these characteristics to hinder adoption of innovation in higher education, though, unstructured collegium qualities as best to foster new technology and innovation implementation.

Research Question 1

What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_0: There is no significant relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education.

While statistical test results did not reveal a significant relationship between participating chiropractic institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education, its descriptive statistics exhibited a large margin between males (n = 28) and females (n = 4) who identified their institution with collegium culture. McNay's (1995) classification of collegium institutional culture purported that decision-making is consensual and these institutions focus on the freedom to pursue personal goals.

Although this study concentrated on chiropractic faculty and did not request faculty positions of tenure, management, or supervisory, Nauffal (2004) found that males predominately held higher positions within higher education institutions. This study experienced a higher percentage of male respondents. Coincidentally, data was collected during most university's summer sessions, which indicated an increase of male faculty on-campus, compared to female faculty. Most likely, these males were in leadership positions, and more closely agreed with collegium culture characteristics regarding consensual decision-making and freedom to pursue goals.

Research Question 2

What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_2: There is a significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

Significant, and negative, correlations were identified between institutions with bureaucracy culture typology and its faculty perceptions of online learning, indicating that faculty from institutions with bureaucracy culture characteristics were less positive in their perceptions of online learning. Notably, faculty from bureaucracy institutions comprised of nearly equal males (n = 27) and females (n = 28), contained the highest amount of respondents over the age of 50 (n = 18), and identified their institution with bureaucracy (n = 56) characteristics more frequently than all other culture types.

These findings indicated that institutional culture permeates not only faculty perceptions of online learning but also an institutions ability to implement innovation and manage change. Several possible explanations for this finding emerged in exploring studies of higher education

and change implementation. As this study found and in agreeance with its results, McNay's (1995) bureaucracy characteristic propositioned that universities known to uphold traditional culture are less conducive to the introduction of innovative technologies, experience prohibitive factors in its acceptance of online learning and instructional technologies, made evident in chiropractic's mostly absent online learning presence. Additionally, since its inception in 1895, chiropractic medicine has primarily remained the same, with a few exceptions of radiologic procedures and techniques, which has created a culture of holding tight to traditional practices and the reliance of regulatory bodies for industry compliance.

Moreover, these findings coincide with the literature on institutional culture affecting innovation. Christensen's (1997) disruptive innovation theory purported a phenomenon of products once viewed as inferior, obstinately advancing, and ultimately surpassing its competitors. Christensen et al. (2011, 2013) acknowledged online learning as a disruption to traditional higher education. Today, Christensen continues to argue that institutions will have to evolve to meet innovative demands or face the possibility of failure. However, Christensen does not delve into characteristics or qualities that determine an institutions outcome. Therefore, this study hypothesized that chiropractic faculty perception of online learning to affect its online learning adoption in the context of Festinger's (1957) cognitive dissonance theory. Relationships between bureaucracy institutional culture and faculty perceptions discovered in this study are imperative to an institution's uptake of innovation.

Research Question 3

What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_0: There is no significant relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education.

According to McNay (1995), an institution identified as possessing enterprise culture characteristically are flexible in decision-making, work closely with students, utilize small teams for projects, and set standards based on market strength. Czerniewicz & Brown (2009) suggested enterprise and collegium as preferable culture types when implementing change and incorporating innovation. This aligns with this study's findings as an enterprise (n = 7) was least frequently identified among participating chiropractic faculty. Conversely, faculty who identified with enterprise culture exhibited the highest scores in positive perception of online learning. Czerniewicz & Brown (2009) expressed a preference for collegium and enterprise institution culture in higher education due to its flexibility and variety of instructional pedagogies, which is often required to foster effective online learning. Historically, discipline-centered institutions, similar to chiropractic, follow strict regulatory guidelines and requirements (Bussières, Patey, Francis, Sales & Grimshaw, 2012; Adams, 2014; Innes, Leboeuf-Yde & Walker, 2016). Therefore, one expects enterprise institutional culture type as least representative of chiropractic faulty. Literature suggests that institutions holding tight to traditions are less likely to adapt as institutions that are comfortable with change. Participants in this study primarily identified with bureaucracy culture and had the lowest perception of online learning. However, the few respondents who identified with enterprise culture were found to have the highest positive perception of online learning. These discoveries also contradicted Schein's (1992) argument that organizational culture determines member perceptions, thoughts, feelings, and overt behavior. Extraneous regulations also form discipline-centered higher education institutions culture.

Research Question 4

What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

H_0: There is no significant relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education.

Chiropractic higher education institutions follow heavily regulated guidelines set forth by CCE and local regulatory bodies. In a corporate culture, decision-making would be tactical, students are customers, loyalty to the organization is regarded, and evaluations are measured by performance indicators (McNay, 1995). Corporate culture institutions are more likely to adhere to upper management decisions and take on innovation simply as an additional task. The literature suggests faculty of corporate institution as less likely to push back on innovation even if they perceive its value as less than what is currently in place (Lacatus, 2013; Schulz, 2013; Kelly & Brennan, 2015). Therefore, one would expect chiropractic faculty from corporate institutions as less likely to display statistical significance in their perception of online learning. Nauffal (2004) argued that American universities are structured more closely with corporate culture, as senior leaders maintain strong control of the institution and typically delegate power to a team of loyal senior officers. In support of Nauffal's argument, Chiropractic institutions typically comprise of a Provost, Vice Provost, President, and Deans. Most notably, regression analyses showed a mild improvement from enterprise (β = -0.01, t = -0.11), p = .909 when corporate (β = -0.04, t = -0.42), p = .676 was added to the model.

Research Question 5

What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution?

H_5: There is a significant relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education, controlling for the demographic variables of age, gender, ethnicity, employment status, and years at the current institution.

Statistical tests and analyses resulted in partial support of research question #5 alternative hypotheses. Bureaucracy institutional culture was significant, and negatively related to faculty perceptions of online learning. Three demographic variables were significantly related to the outcome variable of faculty perceptions of online learning. Gender, employment status, and ethnicity were significant, and negatively, related to faculty perceptions of online learning. Female, full-time, non-White faculty revealed significantly higher perceptions of online learning. Faculty years at their current institution and age were not statically related to their perception of online learning.

As previously mentioned, this study was comprised of more males than females, yet, many participating males associated their institution with collegium culture. Female faculty were less representative in the study but displayed significantly higher perceptions of online learning and associated more with bureaucracy institutions. Similar to Zelick (2013) and Marrs (2013) investigation of gender and technology adoption and use, this study results supported female faculty as more likely than male faculty to adopt education technology. Particularly,

Zelick (2013) study found women as more likely to adopt Web 2.0 technologies, and Marrs (2013) found a non-significant increase of women with more positive perceptions of m-learning. One would assume this is due to m-learning as a relatively new educational technology in higher education and faculty may express indifference due to unfamiliarity.

Ethnicity was statistically significant in this study. Non-White faculty members had significantly higher perceptions of online learning than White/Caucasian faculty. In a dated study Lewis, Snow, Farris, Levin & Greene (1999) purported minority faculty was less likely to participate in distance learning. In 2008, Tabata & Johnsrud further examined these claims by accessing data from the National Center for Education Statistics. Here is where the authors discovered annual base salaries of minority faculty were much less when compared to their white counterparts. Tabata & Johnsrud concluded that financial strain might have contributed to earlier findings. Contrastingly, this study found minorities as having a higher perception of online learning when compared to whites.

Faculty respondent's employment status was significant in this study. Full-time faculty displayed increased positive perceptions of online learning, compared to part-time faculty. Akroyd et al. (2012) examined full time and part time faculty predictive factors to online instruction. Their study concluded a significant difference between full time and part time faculty grounded on faculty level of education. Notably, Akroyd et al. study found that faculty with graduate degrees in vocational and occupational disciplines as less likely to instruct online. Correspondingly, faculty respondents of this study are chiropractic and considered vocational and occupational, which may partially account for part-time faculty displaying a less positive perception of online learning.

Faculty age and years at the current institution was not statistically significant. This covariable was included in this study to provide additional details regarding faculty who may possess prior online learning experiences and encounters. Faculty with limited online experience often expressed difficulty in administering online learning activities appropriate for student learning (Mandernach, Mason, Forrest & Hackathorn, 2012). Equally, faculty perceptions of online learning were found to be influenced by their technical understanding and comfort levels (Okunji & Hill, 2014; Lichoro, 2015). Tabata & Johnsrud (2008) study of predictive factors for faculty to instruct online found that as faculty age increased, their likelihood of instructing online increased. Contrary to previous perception study's findings of gender and age influencing attitudes and perceptions toward technology (Liu & Wilson, 2001; Huang, 2002), academic unit (Kim & Lee, 2008; and Lee, 2007), and its role in education (Flynn, Concannon, & Bheachain, 2005; Martens, Bastiaens, & Kirschner, 2007; Orly, 2007). Participants for this study were all over the age of 31. The demographic variable of age was collected by use of categorical ranges under 30, 31 – 50, and over 50 years of age, and years at current institutions were collected by use of categorical ranges of less than 1 year, 1 – 5 years, and more than 5 years. This method of examining age and years at the current institution as categories did not yield significant results. If these covariables were collected as continuous, improved results to best represent individual faculty age demographic and years at current institution covariable as a predictor to their perceptions of online learning.

The study findings are supported in theory, and the literature, as institutions with the highest male respondents expressed negative perceptions of online learning compared to female respondents. Festinger's (1957) cognitive dissonance theory suggested that when individuals are uncomfortable with a situation, they are likely to support negative feelings towards it.

Regression analysis displayed that as faculty scores for bureaucracy culture increased, their perceptions of online learning decreased. As previously mentioned, the study findings align with suggestions from the literature, Festinger's (1957) theory of cognitive dissonance, Christensen's (1997) disruptive innovation theory that universities characterized by McNay's (1995) bureaucracy institutional culture, typically uphold traditional ethos and are less conducive to implementing innovative technologies. Similarly, these institutions are likely to experience prohibitive factors in faculty acceptance of online learning and instructional technology.

Research Implications

Study Significance

This study's significance is to inform chiropractic higher education leadership that a relationship exists between institutional culture and faculty perceptions of online learning. The literature review suggested these variables as closely related to overall innovation implementation within organizations. By comparing an institution's culture with perceptions of their faculty, this study provided an understanding of the essential need for higher education leaders to consider faculty perceptions and the institution's culture during initial stages of innovation implementation. The results of this study were significant and constructed on two points. First, providing higher education leaders with insight into faculty identification of institutional culture and perspectives on online learning, second, the study added to existing institutional culture literature, both in the context of faculty perceptions and potential influence on strategic planning.

Limitations

As this study was correlational and quantitative, qualitative interview responses were not obtained for further clarification. Utilize caution when generalizing based solely on these research findings, due in part to the following: (a) internal consistency of Totaro et al. (2005) survey instrument resulted in a low Cronbach alpha of -.31, and as a result, the study utilized a subscale. Replication of this study will require the researcher to determine a method of assessing faculty perceptions that coincide with the tenets of the research theory and deliver a more reliable measure. (b) Survey instruments were deployed and responses were collected from participants through a web-based tool, where it was then downloaded and converted to SPSS for analysis. (c) Responses were collected within a 2-week timeframe. However, if the survey were available longer, additional faculty may have been able to participate. (d) Surveys often force respondents into answering items based on a limited range of responses. As the survey instruments used in this study were pre-existing, and the research methodology was quantitative, there was no opportunity for respondents to elaborate on survey answers, which created a vulnerability to the study's internal and external validity. (e) The study was conducted over summer session, and higher education institutions typically have minimal access to faculty during this time. (f) Lastly, the study was limited to CCE accredited chiropractic institutions.

Delimitations

The scope of participants delimits this study. Respondent population solely consisted of chiropractic faculty from CCE accredited institutions. The CCE (2016) maintains a list of accredited chiropractic higher education institutions and report to accredit 15 institutions within the United States. In reviewing these 15 institutions, the combined faculty population was 409,

at the time of this study. Approval was received from six out of 15 institutions. Chiropractic faculty respondents from the participating six institutions were invited to partake in this study. Due to anonymity, the survey questionnaire did not request respondent's geographic location or any identifying information related to their respective institution. It would have been beneficial to obtain geographic data from respondents; however, with the limited amount of Chiropractic institutions within CCE's member roster, anonymity could have been compromised.

Theoretical Implications

The theoretical basis of this study are the presumptions that online learning is a disruptive innovation, chiropractic institutions are collegium, and internal faculty views affect innovation implementation. The data from this study does not fully support its presumptions. The statistical analysis discovered a significant, and negative, relationship solely between bureaucracy institutional culture and faculty perceptions of online learning. Specifically, as faculty scores for bureaucracy culture increased, their perceptions of online learning decreased. This is an expected characteristic in the context of Festinger's (1957) theory of cognitive dissonance. Cognitive dissonance implications are that faculty will express negative perceptions of online learning, as they are less likely to be familiar with this mode of instruction and experience discomfort with its implementation. Christensen (1997) argued that for innovation to be disruptive, it must have originated from a position situated at the bottom of the market and progress to the top, where it will eventually become superior to all other competitors. Critics of Christensen's theory focus heavily on the use of the term 'disruption' as described in theory. However, Christensen clarified that disruption occurs dependent on the industry in which the innovation took place. Innovation in higher education is to be examined based on individual institutions and its various sectors. Regarding healthcare higher education, blended and hybrid

online course formats are not yet disruptive, compared to traditional on-campus formats, but students seeking an associate degree are more likely to attend a university with online learning programs (Bichsel, 2013). With this perspective, the disruption occurs, not institutionally, but on a degree offering level, which applied to chiropractic institutions, as the only credential approved by CCE are doctoral and terminal degrees.

Gaining deeper insight into the higher education institutional culture and faculty perceptions of online learning inform chiropractic higher education leadership of how to best meet the requirements of institutional accrediting bodies and enhance future faculty and student's online learning experiences. Additionally, when implementing strategic initiatives, knowledge of cultural perspectives could advise leadership during initial planning stages. Results of this study provide support in recognizing faculty perceptions of online learning as related to enterprise institutional culture. Czerniewicz & Brown (2009) and Davies (1997) identified enterprise institutions as more suitable for adoption of innovative educational technologies due to the flexibility and variety of instructional pedagogies required to foster effective online learning. Enterprise culture is characterized by tight policy definition with loose control over implementation, with an emphasis on entrepreneurship (Vellas & Cummins, 2015). Leadership who embrace this theory will need to increase entrepreneurial activities among its faculty by reassuring motivation, drive, problem-solving, and self-confidence. As online instructors work with limited supervision, Owusu-Ansah, Neill & Haralson (2011) also advised universities to approach online faculty as entrepreneurs, holding them accountable for student satisfaction. Bureaucracy institutions seeking to possess a culture more closely identified with enterprise will need to place high importance on improvement by institutional restructuring, implementing

enterprise-friendly policies and fostering individuals attempting to launch, manage, or progress towards an enterprise culture.

To advance from bureaucracy to an enterprise culture, leadership will need to consider groups of individuals. Owusu-Ansah et al. (2011) purported that universities upholding a traditional culture are least favorable to adopting innovative technologies, as they experience increased prohibitive factors in its acceptance and use of online learning and educational technology. To remedy this, leadership will need to depend on the strict and extensive use of policies, as the set of philosophies, standards, and values that provide the structure of a group's culture may consist of individuals who rely heavily on tradition. Chiropractic faculty who participated in this study were primarily male (55%), White (84%), and over the age of 30 (59.5%). Nationally, chiropractic faculty is male (78%), White (72%), and over the age of 30 (Johnson & Green, 2012). Wiese (1994) reported, "The Palmer School of Chiropractic blatantly stated, `Negros are not accepted' in its catalogs of the 1920s through 1950." Diversity within an organization and healthcare sector is required to experience progress and ultimately survive (Borkowski, 2015, p. 40). Statistical data and empirical studies support chiropractic higher education as holding onto traditional beliefs and practices. Chiropractic leadership will need to confront its prevalent diversity issues faced in the industry if they seek to embark on transforming from bureaucracy into an enterprise culture. To achieve this, initiation should begin with recruiting diverse students and hiring diverse faculty and leadership. There needs to be further analysis conducted to determine the scope and level of significance regarding this effect on learning and overall acceptance of innovative technology in relationship to higher education institutional culture and faculty perceptions of online learning.

Recommendations for Future Research

Exploring chiropractic institutional culture and faculty perception of online learning is merely the beginning. As this study displayed differences among colleagues, constructivism's relativism can be multidimensional with contradictory realism amid members of an organization. However, retaining a capacity to transform as those members obtain advanced knowledge (Tan, 2015) is ideal. Research should expand to the faculty of other disciplines and incorporate a qualitative component to identify if these results are generalizable to a larger population. Therefore, a mixed method research methodology is ideal for future studies on this topic. A mixed method design would encompass empirical statistics and narrative participant contributions to support quantitative findings. Additionally, this study utilized Totaro et al. (2005) Faculty Perceptions of Online learning to measure the independent variable, and future researchers should consider an alternative instrument or develop an instrument more appropriate for their population and variables. As this study was not causal, further examination of bureaucracy faculty's negative perceptions of online learning may determine if institutional culture is the cause or is it due to factors related to individual faculty. An analogous study could offer valuable data in preparation for distance learning initiatives pertaining to other discipline-specific fields and provide a more systematic approach to classifying a variety of instructional delivery options.

These findings are generalizable and integrate into discipline-specific universities online learning or strategic innovation initiatives. These findings provide higher education leadership with the awareness to adequately engage during initial discussions and analysis of online learning and institutional change. Measuring dynamics, such as faculty determination, student graduation proportions, and program time to degree completion for traditional campus programs,

has yet to mitigate deficient data of this type for discipline-specific online programs. Researchers should further investigate a universal data collection method to provide detailed information regarding faculty effect on discipline-specific online programs, similar to data collected for traditional campus faculty. Research that examines the value of instructing online would make available essential information to institutions of higher education.

Some healthcare institutions are offering hybrid and blended courses, which allow the benefit of students attending class sessions online and on campus. Healthcare disciplines, such as nursing, have already begun a movement toward hybrid and blended course formats. Future researchers should compare hybrid, online and traditional campus faculty experiences, and student outcomes. Lastly, as other studies have examined perceptions based on diversity among demographics, a further investigation into these two constructs may provide sufficient detail to investigate their effect on discipline-specific higher education institutional culture and change responsiveness.

Summary

With online education as a subject of increased interest in higher education, institutions will need to develop sustainable and effective programs to meet faculty needs and student demands. The ability for higher education institutions to exude innovation and adaptability to emerging technologies is necessary and requires a high level of faculty buy-in. Faculty who seek to instruct online must be trained and knowledgeable on how to accomplish the delivery of appealing and effective instructional content in an online environment. Developing online connections, or communities, among and within faculty and students is imperative for online instructing and learning. Supporting and encouraging faculty to participate in online

communities and learning, alongside possessing positive attitudes and perceptions of online instructing and learning is vital.

This study examined relationships between institutional culture and faculty perception of online learning. In this study, Chiropractic faculty respondents primarily associate with bureaucracy institutional culture. Faculty of these institutions also possessed the highest negative perception of online learning. Also, this study shed light on how gender may affect faculty perspective of institutional culture and perceptions of online learning. Of the four research questions presented in this study, r*esearch question 2*: "What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?" presented the only significant relationship. The findings revealed:

H_2: There is a significant relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education.

The significant, and negative, correlations between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education, indicates that faculty from institutions with bureaucracy culture characteristics were less positive in their perceptions of online learning. These findings should encourage health care and discipline-specific higher education institutions to start developing a strategic approach to implementing online learning while considering institutional culture and faculty perceptions. Online learning is an effective mode of instructional delivery, and the future of technology supports it embrace by highly kinesthetic disciplines, as those typically found in integrative healthcare disciplines. This study provides support for the critical relationship between institutional culture and faculty perceptions. Analytical results validate a bureaucracy culture experienced within a university is

related to negative perceptions held by faculty, and an enterprise culture is related to positive perceptions. From a higher education leadership perspective, findings have significant implications for executing innovation within institutions that typically uphold traditional practices. Leadership should promote enterprise culture activities to improve faculty perceptions of online learning. Most importantly, faculty perception is critical to technology uptake and successful implementation.

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Appendix 1: Description of Quantitative Variables

Description of Quantitative Study Variables

Variable	Role	Operationalized	Scale
Institutional Culture	IV	Nauffal (2004) Institutional Culture Instrument 1. Aggregated: Highest mean score for each response determined preferred culture type (See Appendix 2)	RQ1 – RQ4: Continuous (Likert) RQ5: Categorical
Faculty Perception	DV	Totaro et al. (2005) Faculty Perceptions of Online Learning Instrument 1. Aggregated: Highest mean score for each item response determined perception (See Appendix 2)	Continuous (Likert)
Age	CV	Survey Response	Categorical
Gender	CV	Survey Response	Categorical
Ethnicity	CV	Survey Response	Categorical
Employment status	CV	Survey Response	Categorical
Years at Current Institution	CV	Survey Response	Categorical

Appendix 2: Corresponding Operationalized Variable Descriptions

Corresponding Operationalized Variable Descriptions

Operationalized Variable	Survey Question/Item All survey items are Likert scaled as: 5 = Strongly Agree, 4 = Agree3 = Neutral, 2 = Disagree, 1 = Strongly Disagree
Institutional Culture (IV)	**Collegium** 1. Holds on to traditional management practices hinders change in the University. 2. University goals (such as to achieve equality, excellence, etc.) are loosely defined. 3. There is loose control over the implementation of institutional goals. 4. The management style adopted by the University allows participation of individuals in determining University goals. 5. The management style adopted by the University allows a degree of freedom for indi towards the University goals they think most important. 6. As an institution, the University is a self-governing community of scholars. 7. Decision-making is consensual (by agreement) within the University. 8. The management style adopted by the University allows considerable freedom for faculty to teach courses of interest to them. 9. The management style adopted by the University allows faculty considerable freedom to conduct research in areas of interest to them. 10. Faculty members enjoy considerable freedom to decide their own job description. 11. The management style adopted by the University views students as apprentice (trainee) academics. **Bureaucracy** 12. The University has set standards at which participants are to perform academically. 13. The University has standard operating procedures highlighting the way participants are to relate to one another within the institution. 14. The University has standard operating procedures highlighting the way activities are to be performed within the institution. 15. Committees negotiate University goals to be pursued by the institution. 16. Within the University, faculties are the main organizational unit. 17. There is a strong centralized control of administrators in the institution. 18. The management style is liberal (laissez-faire or nonjudgmental). 19. Decisions are made by appointed rather than elected committees or working parties. 20. The management style adopted by the University views students as a statistic. **Enterprise** 21. The management style adopted by the University allows a high degree of freedom for faculties (discipline-based departments) in the selection of their goals. 22. Within the University, a small project team (or teams) is the dominant organizational unit. 23. The management style is one of delegated (passed on or entrusted) leadership. 24. The management style adopted by the University encourages research with more commercial application as opposed to pure, curiosity driven research. 25. The management style adopted by the University favors offering courses having greater direct job applicability (commerce, computing, and media) as opposed to university courses as history, philosophy, classics. 26. The University has developed support mechanisms for management development of all concerned parties in decision- making. 27. The management style adopted by the University views students as customers who are entitled to receive satisfaction with the product (education) they are

purchasing.

Corporate

28. The University is a top-down managed institution.
29. Decision-making is rule-based (follows a fixed set of rules).
30. The management style adopted by the University focuses on loyalty to the organization.
31. The management style adopted by the University focuses on loyalty to senior management.
32. Job descriptions of faculty members considerably match reality.

Faculty Perception of Online Learning (DV)	**Self-discipline** 5. The online course format allows students to study at their own pace. *(Self-discipline)* **Class times** 1. One of the advantages, for the instructor, of teaching an online course is that "class times" are flexible. *(Class times)* 2. One of the advantages, for students, in taking an online course is that "class times" are flexible. *(Class times)* **Student/teacher interaction** 3. The interaction/lectures with the instructor are more frequent in a regular classroom setting than in an online class. *(Student/teacher interaction)* 12. The lack of student-to-student interaction in an online class would hinder their learning experience. *(Student/teacher interaction)* 11. I would miss the face-to-face interaction with students in an online class. *(Student/teacher interaction)* 7. Meeting face-to-face with students outside the classroom is important to me. *(Student/teacher interaction)* **Class structure** 8. The fact that an online course has no structured classroom type environment appeals to me. *(Class structure)* 9. Online courses appeal to students because there is no required classroom setting. *(Class structure)* **Student learning** 13. The textbook is more crucial in an online class than in a traditional class. *(Student learning)* 16. Online courses require the students to teach themselves the material more so than in a "traditional" in-class course. *(Student learning)* **Testing** 14. Tests in an online course are more difficult for students. *(Testing)* 15. Tests in an online course are more difficult for faculty to administer. *(Testing)* **Quantitative courses** 4. Quantitative courses in an online setting are among the most difficult for college students. *(Quantitative course)* 6. Non-quantitative courses should be offered online. *(Quantitative course)* **Educational value** 17. The technology required to take an online course increases the educational value of the experience. *(Educational value)* 18. Online courses require the student to be more self-disciplined than in traditional courses. *(Self-discipline)* **Future plans to teach online** 10. In the future, I will teach as many online classes as possible. *(Future plans to teach online)*
Faculty Online Experience (CV)	<1 year, 1 - 3 years, >3 years

Age (CV)	18 - 30, 31 - 50, >50
Gender (CV)	Gender (Male/Female)
Ethnicity (CV)	Ethnicity (AA, White, Asian/Pacific Islander, Hispanic, Other)
Employment Status (CV)	Employment status Type Category (Full time, Adjunct)
Years at Current Institution (CV)	< 1, 1 - 5, >5

Appendix 3: Statistical Analysis of Variables

Statistical Analysis of Variables

RQ1: What is the relationship between institutions with collegium culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Collegium Culture (Continuous)

Statistical Code: 1 = Collegium

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariable

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

2. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

4. Full Model - Relationships between all variables
5. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Collegium Culture Score
6. Tested contributions of collegium culture when added to the regression model

RQ2: What is the relationship between institutions with bureaucracy culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Bureaucracy Culture (Continuous)

Statistical Code: 2 = Bureaucracy

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

2. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

4. Full Model - Relationships between all variables
5. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Bureaucracy Culture Score
6. Tested contributions of bureaucracy culture when added to the regression model

RQ3: What is the relationship between institutions with enterprise culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Enterprise Culture (Continuous)

Statistical Code: 3 = Enterprise

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

2. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

4. Full Model - Relationships between all variables
5. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Enterprise Culture Score
6. Tested contributions of enterprise culture when added to the regression model

RQ4: What is the relationship between institutions with corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Corporate Culture

Statistical Code: 4 = Corporate

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

Pearson's (r)

2. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

4. Full Model - Relationships between all variables
5. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Corporate Culture Score
6. Tested contributions of corporate culture when added to the regression model

RQ5: What is the relationship between institutions with collegium, bureaucracy, enterprise, and corporate culture typology and its faculty perceptions of online learning in chiropractic higher education?

Independent Variable

Corporate Culture (Categorical)

Statistical Code: 1 = Collegium, 2 = Bureaucracy, 3 = Enterprise, 4 = Corporate

Dependent Variable

Faculty Perceptions of Online Learning (Continuous)

Statistical Code: FPOOL

Demographic/Covariables

Gender (Categorical)

Statistical Code: 0 = Female, 1 = Male

Age (Categorical)

Statistical Code: 0 = ages 31 - 50 = 2, 1 = over the age of 50

Ethnicity (Categorical)

Statistical Code: 0 = Non-White, 1 = White (dummy coded)

Employment status (Categorical)

Statistical Code: 0 = Part-time, 1 = Full-time

Years at Current Institution (Categorical)

Statistical Code: 0 = Less than 1 year, 1 = 1 or more years (dummy coded)

Statistical Analysis

ANOVA

2. Determined if the independent variable had a statistically significant effect on the dependent variable

Pearson's (r)

2. Relationship strength between independent and dependent variables

Hierarchical Multiple Regression:

4. Full Model - Relationships between all variables
5. R squared change - *Step 1:* Control variables; *Step 2:* Control variables + Aggregate Corporate Culture Score
6. Tested contributions of collegium, bureaucracy, enterprise, and corporate culture when added to the regression model

Appendix 4: Institutional Culture Survey Instrument

Institutional Culture (Nauffal, 2004)

Gender: Male( ) Female( )

Age: 20-30( ) 31-40( ) 41-50( ) 51-60( ) above 60( )

University:_____

Faculty:_____

Department:_____

Academic position(s) held:_____

Administrative position(s) held:_____

Number of years of service at the University:_____

5=Strongly agree 4=Agree 3=Neutral 2=Disagree 1=Strongly disagree

	Question	1	2	3	4	5
1	Holding on to traditional management practices hinders change in the University.					
2	University goals (such as to achieve equality, excellence, etc.) are loosely defined					
3	There is loose control over the implementation of institutional goals.					
4	The management style adopted by the University allows participation of individuals in determining University goals.					
5	The management style adopted by the University allows a degree of freedom for individuals to work towards the University goals they think most important.					
6	As an institution, the University is a self-governing community of scholars.					
7	Decision-making is consensual (by agreement) within the University.					
8	The management style adopted by the University allows considerable freedom for faculty to teach courses of interest to them.					
9	The management style adopted by the University allows faculty considerable freedom to conduct research in areas of interest to them.					

10	Faculty members enjoy considerable freedom to decide their own job description.					
11	The management style adopted by the University views students as apprentice (trainee) academics.					
12	The University has set standards at which participants are to perform academically.					
13	The University has standard operating procedures highlighting the manner in which participants are to relate to one another within the institution.					
14	The University has standard operating procedures highlighting the manner in which activities are to be performed within the institution.					
15	Committees negotiate University goals to be pursued by the institution.					
16	Within the University, faculties are the main organizational unit.					
17	There is a strong centralized control of administrators in the institution.					
18	The management style is liberal (laissez-faire or nonjudgmental).					
19	Decisions are made by appointed rather than elected committees or working parties.					
20	The management style adopted by the University views students as a statistic.					
21	The management style adopted by the University allows a high degree of freedom for faculties (discipline-based departments) in the selection of their goals.					
22	Within the University, a small project team (or teams) is the dominant organizational unit.					
23	The management style is one of delegated (passed on or entrusted) leadership.					
24	The management style adopted by the University encourages research with more commercial application as opposed to pure, curiosity driven research.					

25	The management style adopted by the University favors offering courses having greater direct job applicability (commerce, computing, media) as opposed to university courses as history, philosophy, classics.					
26	The University has developed support mechanisms for management development of all concerned parties in decision- making.					
27	The management style adopted by the University views students as customers who are entitled to receive satisfaction with the product (education) they are purchasing.					
28	The University is a top-down managed institution.					
29	Decision-making is rule-based (follows a fixed set of rules).					
30	The management style adopted by the University focuses on loyalty to the organization.					
31	The management style adopted by the University focuses on loyalty to senior management.					
32	Job descriptions of faculty members considerably match reality.					

Appendix 5: Faculty Perceptions Survey Instrument

Faculty Perceptions of Distance Learning
(Totaro et al, 2005)

Gender: ___ Male ___ Female

Employment Status: ___ Full Time ___ Part Time

Rank: ___ Instructor ___ Assistant Professor ___ Associate Professor ___ Professor

Years of College Teaching Experience: _____

Have you taught an online course before? ____ Yes ____ No

Years of online teaching experience ___ Years of online learning experience ___

5=Strongly agree 4=Agree 3=Neutral 2=Disagree 1=Strongly disagree

	Question	1	2	3	4	5
1	One of the advantages, for the student, of taking an online course is that "class times" are flexible.					
2	One of the advantages, for the instructor, of teaching an online course is that "class times" are flexible.					
3	The interaction/lectures with the instructor are more frequent in a regular classroom setting than in an online class.					
4	Quantitative courses in an online setting are among the most difficult for college students.					
5	The online course format allows students to study at their own pace.					
6	Non-quantitative business courses should be offered online.					
7	Meeting face-to-face with students outside the classroom is important to me.					
8	The fact that an online course has no structured classroom type environment appeals to me.					
9	Online courses appeal to students because there is no required classroom setting.					
10	In the future, I will teach as many online classes as possible.					
11	I would miss the face-to-face interaction with students in an online class.					
12	The lack of student-to-student interaction in an online class would hinder their learning experience.					

13	The textbook is more crucial in an online class than in a traditional class.					
14	Tests in an online course are more difficult for students.					
15	Tests in an online course are more difficult to administer.					
16	Online courses require the students to teach themselves the material more so than in a "traditional" in-class course.					
17	The technology required to take an online course increases the educational value of the experience.					
18	Online courses require the student to be more self-disciplined than in traditional courses.					

Appendix 6: Permission for Faculty Perception Survey Use

6/6/2016 Outlook.com - keyonda_smith@hotmail.com

New Reply Delete Archive Junk Sweep Move

Keyonda Smith

totaro

Folders

Inbox 1

Junk 68

Drafts 58

Sent

Deleted

BBN

Harvard

Letters of Recommendati...

Novus Law School

Registered Dietitian

rooms for rent

Sedona Ag

Trinity

Writing 6

Search Results

New folder

Permission to Use Faculty Perceptions of Distance Education Survey

Michael W Totaro (mwt3774@louisiana.edu) Add to cc Actions

To: Keyonda Smith Cc: jrt4671@louisiana.edu, jeanne76@bellsouth...

Hello, Ms. Smith:

Thank you so much for your thoughtfulness in sending an email request for permission to use use our survey instrument as part of your dissertation proposal. I am perfectly fine with this, especially in light of the conditions you've articulated in your email. I shall, of course, defer to my coauthors regarding their views regarding your request.

I wish you all the very best in your doctoral program.

Have a great summer!

Michael Totaro

Michael W. Totaro, Ph.D.
Associate Professor
School of Computing and Informatics
Ray P. Authement College of Sciences
University of Louisiana at Lafayette
James R. Oliver Hall, Room 203

Promoted Links

4 Cards You Can Transfer To And Pay $0 Interest For All... LendingTree

PwC's Experience Center Is Ranked As A Best Place To... PwC

Two US Navy jets collide off N. Carolina, crew safe-... Reuters on MSN

Wirelessly send what's on your phone, tablet or laptop.. Microsoft Store

by Taboola

© 2016 Microsoft Terms Privacy & cookies Developers English (United States)

https://blu183.mail.live.com/?fid=cvtQk3E4HQlwnsnhoaNgPvrw2&fid=fisearch&srch=1&skws=totaro&sdr=4&saft=0 1/1

Appendix 7: Permission for Institutional Culture Survey Use

THIRD PARTY COPYRIGHT MATERIALS APPROVAL FORM

DEAR Dr. Diane Nauffal,

I am a research student in the Department of Education at Trident International University. I am seeking permission to use the following material in my doctoral thesis entitled "*The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Acupuncture and Chiropractic Higher Education*" for the purposes of examination and subsequent deposit in the Trident International University Repository if available.

If you are agree to grant permission, please sign the authority at the bottom of this letter and return a copy to me. You may also add instructions regarding the attribution statement that I will include in my doctoral thesis, and any additional terms and conditions that you require.

If you wish to discuss the matter further, please contact me at diane.nauffal@lau.edu.lb or telephone +961 1 786456 Ext: 1232.

Thank you for considering this request.

Yours sincerely,

Keyonda Smith

Keyonda Smith

I, as Copyright Owner (or the person with authority to sign on behalf of the Copyright Owner) of the material described above, grant permission for Keyonda Smith to copy the material requested for the stated purposes, with no further action required.

Diane Nauffal

June 24, 2016

ATTRIBUTION STATEMENT

Acknowledgement of Copyright: Please note any specific instructions you would like included in the acknowledgement of copyright.

Permission to use this survey has been granted by Dr. Diane Nauffal
https://core.ac.uk/download/files/121/77780.pdf

Appendix 8: Letter to Request Survey Participation

Invitation to Participate in the Study

Dear Program Director,

I am a doctoral candidate in the College of Education at Trident University International. I am conducting research as part of the requirements for a Ph. D in Educational Leadership. The title of my research project is "*The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Chiropractic Higher Education*".

I am pleased to extend to you an invitation to participate my doctoral research, in which your chiropractic higher education institution has graciously agreed to take part. Your participation is greatly appreciated, and will assist in uncovering if relationships exist between institutional culture and faculty perceptions of online learning in chiropractic higher education among CCE accredited institutions with limited, or no, online education presence. This research targets factors such as institutional governance, faculty perceptions and favorable conditions for strategic implementation of online learning initiatives.

Please allow 15 to 20 minutes to complete the survey. It will be available between xx/xx/xxxx and xx/xx/xxxx. All responses will remain anonymous, and participation is voluntary. Respondents will be asked to complete a survey that measures the institutional culture and their perceptions of online education. Participants will only be asked to complete one survey for this study. There are 50 questions in this survey and aggregated results will be shared with your institution's leaders.

Please click the link below to access the online survey:
www.xxxxxxxxx.com (SurveyMonkey)

The institutional review board (IRB) of Trident University International has approved this research as complying with safe and proper research procedures. Members of my doctoral committee supervise this research study.

If you have any questions, comments, or concerns about this study, please feel free to contact me by e-mail at Keyonda.smith@my.trident.edu , or contact the IRB at Trident University International, 5757 Plaza Drive, Suite 100, Cypress, California 90630; Telephone: (714) 226-9840; E-mail: IRB@trident.edu. You may also contact my dissertation chairperson, Dr. Pamela Wilson, at pamela.wilson@trident.edu.

THE RELATIONSHIP BETWEEN INSTITUTIONAL CULTURE AND FACULTY PERCEPTIONS OF ONLINE LEARNING IN CHIROPRACTIC HIGHER EDUCATION

Your feedback is very important, and your perspective is greatly valued. Thank you so much in advance for your assistance with this research study, and for your time in completing the survey.

Warm regards,

Keyonda M. Smith

Additional Web-Based Survey Consent

Appendix 9: IRB Approval

TRIDENT UNIVERSITY
INTERNATIONAL

Institutional Review Board - IRB
5757 Plaza Dr., Suite 100 Cypress, California 90630 • Tel: (714) 816-0366 • Fax: (714) 226-9844

Date: 7/25/2016

Dear Keyonda Smith,

Thank you for submitting your application to the Institutional Review Board. We reviewed your application for your proposed study, 'The Relationship Between Institutional Culture and Faculty Perceptions of Online Learning in Chiropractic Higher Education.' Per federal guidelines, we have determined that your study is exempt from further IRB review for the following reason(s):

- Research involves only the use of survey procedures in an adult population, and the information is not recorded in a manner that human subjects can be identified (45 CFR 46.101(b)(2))

This approval is valid for one year from the date of this notice. The research must be conducted according to the proposal submitted to the Trident IRB. In order to preserve the anonymity of participants, data may not be reported without a minimum of ten subjects in a subgroup. If changes to the approved protocol need to be made, a revised protocol must be submitted both to your Dissertation Chair and IRB for review and approval.

Sincerely,

Heidi Sato

Heidi Sato, Ph.D., MPH
Chair - Institutional Review Board (IRB)
Director of Institutional Research

Appendix 10: Letters of Approval from Participating Institutions

FIVE BRANCHES UNIVERSITY

Graduate School of Traditional Chinese Medicine

Santa Cruz Campus

200 Seventh Avenue

Santa Cruz

California

95062

Tel (831) 476-9424

Clinic (831) 476-8211

San Jose Campus

1885 Lundy

Suite 108

San Jose

California

95131

Tel (408) 260-0208

Clinic (408) 260-8868

www.fivebranches.edu

June 7, 2016

Keyonda Smith M.Ed., NMD
College of Education at Trident University International
Cypress, California

Dear Keyonda Smith,

In response to your email request, I here confirm our approval to circulate your survey related to your PhD research on "***The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Chiropractic Higher Education***".

Sincerely,

Ron Zaidman, MBA, DAOM Fellow
President & CEO

Reply all | Delete Junk | ...

FW: Keyonda Smiths's Survey

JP Judy Pocius
Today 11:17 AM
irb@trident.edu; Keyonda Smith

Reply all |

Inbox

To Trident University IRB:

Dr Randy Swenson, National University of Health Sciences Vice President of Academic Services, approved Chiropractic faculty participation in the survey project *"The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Acupuncture and Chiropractic Higher Education"* conducted by Dr Keyonda Smith and ethically approved by the Trident University IRB.

Any questions feel free to contact me.

Judy Pocius
Research Coordinator
National University of Health Sciences
200 E. Roosevelt Road
Lombard, IL 60148
P#: 630-889-6479
F#: 630-495-6664

From: Greg D. Cramer
Sent: Wednesday, August 03, 2016 10:34 AM
To: Judy Pocius
Subject: Fwd: Keyonda Smiths's Survey

For your records.
Greg

Gregory D. Cramer, DC, PhD
Professor and Dean of Research
National University of Health Sciences
200 E. Roosevelt Rd.
Lombard, Illinois 60148
Phone: (630) 889-6536
gcramer@nuhs.edu

Begin forwarded message:

Northwestern Health Sciences University

June 1, 2016

Dear Keyonda,

Thank you for your request to survey faculty of Northwestern Health Sciences University as part of your dissertation research.

Please consider this letter official approval to move forward with your survey of our faculty as outlined in your email dated May 31, 2016.

Best of luck to you with your research and dissertation.

Sincerely,

Dale Healey DC, PhD
Dean – College of Health and Wellness

2501 West 84th Street | Bloomington, MN 55431-1599 | 952-888-4777 | nwhealth.edu

PALMER
College of Chiropractic

July 21, 2016

Keyonda Smith

Dear Ms. Smith:

I will be your point of contact for distribution of information to Palmer faculty for the survey comprising part of your doctoral work. I am Palmer College's Human Protections Administrator, as well as Senior Director for our CTL. You letter was sent to me from our research center, and I have an okay from our provost to allow this to occur. I would be grateful if you could forward to me a copy of your final IRB approval letter. Once I have that and your email information and url, I can then send it out to our faculty. Please feel free to include this in information to your IRB.

Thank you so much.

Dana J. Lawrence, DC, MMedEd, MA
Senior Director, Center for Teaching and learning/CEE
Human Protections Administrator

Reply all | Delete Junk | •••

Approve disseminating to our faculty, the invitation to participate with the link to Keyonda Smith online survey "The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Chiropractic Higher Educ"

MS **Monica Smith**
Today 12:43 PM
irb@trident.edu; Keyonda Smith; Scott Donaldson <sdonaldson@lifewest.edu>

Reply all |

Inbox

TO: irb@trident.edu
(cc: keyonda.smith@my.trident.edu).

Dear colleagues,

Our institution, Life Chiropractic College West, has received from doctoral candidate Keyonda Smith, her request that we forward to our faculty, the invitation to participate with a link to the online survey:

"*The Relationship between Institutional Culture and Faculty Perceptions of Online Learning in Chiropractic Higher Education*", the purpose of the research being to examine the relationship between institutional culture and faculty perceptions of online learning chiropractic higher education among and CCE accredited institutions. Upon approval, a web-based link will be sent to our institution for distribution to faculty. Participants will be eligible to win gift cards for survey completion.
Faculty will be presented with informed consent information prior to participating and will be asked to go to SurveyMonkey.com to complete a brief research survey. The survey questionnaire will measure their perceptions of online learning and institutional culture. Faculty responses are anonymous and there is no risk to anyone involved in this study. Taking part in this research is completely voluntary and participants are welcome to discontinue participation at any time.

Both the VP AcademicAffairs (DrScottDonaldson) and DirectorResearch (DrMonicaSmith) have reviewed this request and the supporting documents, and we approve disseminating to our faculty, the invitation to participate with the link to your online survey.

Sincerely,

Monica Smith, DC, PhD
Director of Research

P +1 (510) 780-4500ext2500
E MSmith@lifewest.edu

LIFE CHIROPRACTIC
COLLEGE WEST

BASTYR UNIVERSITY

22 July, 2016

Keyonda Smith M.Ed., NMD, Ph. Dc
Trident University International

Dear Ms. Smith,
On behalf of Bastyr University's Department of Acupuncture and East Asian Medicine, I am pleased to inform you that your request to access faculty input for the purpose of doctoral research has been approved. Please send the appropriate link to the email address below, along with the informed consent forms, and they will be distributed to faculty who express an interest in participating.

If you have any additional questions, please feel free to contact me.

Regards,

Skye Sturgeon, DAOM

Skye Sturgeon, DAOM
Chair, Department of Acupuncture and East Asian Medicine
Bastyr University
lpetersburg@bastyr.edu

14500 Juanita Drive NE • Kenmore, Washington 98208 • (425) 823-1300 • FAX (425) 823-6222
• www.Bastyr.edu