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UNIVERSITY OF CALIFORNIA
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Precursors of Professionalism in Senior-level Undergraduate Business Students
and the Implications of these Precursors for Business Education and the
Profession

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Lana Sami Nino

June 2012

Dissertation Committee:

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The Dissertation of Lana Sami Nino is approved:

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University of California, Riverside

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DEDICATION

This project is dedicated to prior scholars whose work influenced, touched, and changed me deeply. The brilliant work of these scholars guided the development of this project. Following are few of their names: Steven Brint, Anne Colby, Thomas Ehrlich, Eliot Freidson, Mary C. Gentile, Thomas P. Imse, Rakesh Khurana, Lawrence Kohlberg, John S. Levin, James O'Toole, Ernest Pascarella, Gary Rhoades, Lee S. Shulman, Sheila Slaughter, William Sullivan, Patrick Terenzini, and many others. I humbly acknowledge the opportunity to engage in this scholarship where I have been able to add a single piece of a jigsaw puzzle to the mystery of knowledge.

ABSTRACT OF THE DISSERTATION

Precursors of Professionalism in Senior-level Undergraduate Business
Students and the Implications of these Precursors for
Business Education and the Profession

by

Lana Sami Nino

Doctor of Philosophy, Graduate Program in Education
University of California, Riverside, June 2012
Dr. John S. Levin, Chairperson

Understanding the professional identity of senior-level undergraduate business students may shed light on the rampant unethical acts of business managers in industry. Business education is the largest segment of undergraduate majors, constituting more than 20% of students in four-year institutions, year after year. To explain the professional identity of business students, this study uses prior theoretical frameworks to model the precursors of professionalism—"autonomy of judgment," "desire for expertise," "self-concept," and "social agency." The study draws on data from the College Senior Survey (CSS) collected by the Higher Education Research Institute (HERI) at UCLA for two academic years 2006-2008. Exploratory and confirmatory factor analysis indicate that the four factors—autonomy of judgment, desire for expertise, self-concept, and social agency—indeed fit a cohesive model for the latent construct "precursors of professionalism." Additionally, the results of this study indicate

statistically significant differences between business students and students of other majors in terms of the four-factors. First, mean factor scores of undergraduate business students for “autonomy of judgment” are lower than 43% of their peers. Second, mean factor scores of undergraduate business students for “desire for expertise” are higher than 83% of their peers in college. Third, the results of this study show that mean factor scores of undergraduate business students in “self-concept” are higher than 74% of their peers in college. Last, the results of this study show that mean factor scores of undergraduate business students in “social agency” are lower than 71% of their peers in college. The results suggest that there are statistically significant differences between business and non-business majors for three of the four factors tested in the study: “desire for expertise,” “self-concept,” and “social agency.” This indicates that business students differ from their peers in college in most of the dimensions of the precursors of professionalism.

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CHAPTER 1: INTRODUCTION

Business scandals have plagued America, sent shudders to millions of investors and shareholders, and shook markets to the core. These examples of unethical and often criminal behavior changed the way that Americans view businesses and the employees of these businesses. Moreover, the aftermath of the crisis caused an outpouring of concern that business education had failed to prepare business leaders to act in an ethical manner. These concerns suggested that the institution of business education condoned, or failed to discourage, unethical business behaviors (Adler, 2002; AFV, 2002; Khurana, 2007; Trank & Rynes, 2003).

Several examples of unethical business practices had major consequences on the United States (U.S.) economy and the lives of thousands of working-class Americans. The Enron scandal resulted in the loss of over 4,500 jobs, and \$80 billion in market value, previously owned by shareholders. Shareholders of Xerox lost \$3 billion, collectively, in a scandal that led Xerox to eliminate 13,600. WorldCom filed for bankruptcy in 2002, depleting most of its market value of more than \$100 billion that was owned by shareholders. In addition to the loss of \$100 billion in market value in the U.S. economy, WorldCom eliminated 17,000 jobs due to bankruptcy. Merrill Lynch and Company eliminated 23,000 jobs and lost \$18.8 billion of shareholders' money after some of the company's analysts purposefully misled investors (AFV, 2002). The Institute for America's Future found that in 2001 alone, more than \$17.5 billion of individual retirement accounts and \$6.44 billion of pension funds – owned by teachers, police, firefighters, and other state and municipal employees – were lost. As a result of

the unethical behavior of Wall Street corporate employees and the resultant scandals prior to 2002, America lost more than \$200 billion in savings, jobs, retirement accounts, pension losses, and tax revenue (AFV, 2002).

More recently, the subprime mortgage crisis was estimated to cost taxpayers between \$150 to \$250 billion according to the Federal Housing Finance Agency, the government regulator of subprime mortgages (Thayer Watkins Home Page, 2011). More than four million citizens lost their homes as a direct or an indirect result of the unethical behavior of business professionals between 2007 and 2012 (Times, 2012). A three-year investigation of Federal National Mortgage Association (Fannie Mae) by the Office of Federal Housing Enterprise Oversight detailed widespread fraudulent accounting practices. Senior management at Fannie Mae manipulated accounting records, reaped maximum financial rewards for their behaviors, and concealed the information about these unethical acts from the public (Thayer Watkins Home Page, 2011; Trumbull, 2011). Many executives at Fannie Mae were accused of plundering the firm's assets with stock option loans and other forms of inappropriate compensation. However, the employees and executives at Fannie Mae who were responsible for this disaster did not act alone; they acted with multiple layers of management from thousands of firms, ranging from lending banks, mortgage brokers, and small and large realtors (Thayer Watkins Home Page, 2011).

These crises prompted the business community, scholars, and critics to question the ethical foundation of the market, its participants, and if an authentic free market model could exist within the parameters of ethical behaviors. Although the business

managers, CEOs, CFOs, vice-presidents, and other managers of firms involved in these scandals were to blame for these financial disasters, the American working class paid for the actions of these individuals through lost investments, retirement accounts, and foreclosed homes. Shareholders' and citizens' confidence in business, and the managers of businesses, plummeted (AFV, 2002; Khurana, 2007). The additional attention that these scandals brought to the business world led to an increased focus on the collegiate preparation of business managers. Khurana (2007), Pfeffer and Fong (2002), and Trank and Rynes (2003) argued that business students' training appeared to be "less successful than meets the eye," and that the outcomes of this education may conflict with the results that society wants to achieve through this educational preparation.

In the wake of these crises, a flurry of scholars and regulators initiated calls for additional regulations and ethical training of business managers (Khurana, 2007; Swanson & Fisher, 2009). Adler (2002) called on business schools to reflect on their training of business graduates. Adler (2002), Brint (1996), and Trank and Rynes (2003) stated that as business students graduate and become managers, their role surpasses the traditional technical business expert roles. They emphasized that business schools should be concerned about training their students as citizens of their polity and as members of their communities, not just as technical experts of business practices (Adler, 2002; Brint, 1996; Trank & Rynes, 2003).

Since many sensitive managerial and chief officer positions in the business world have traditionally been filled by graduates of business schools and MBAs, the need for business schools to emphasize ethical and social components in business education has

grown (Bennis & O'Toole, 2005; Epstein, 2006; Khurana, 2007; Parks, 1993; Swanson, 2004). Managers and chief officers of major companies have routinely affected the quality of life of millions of people in the U.S. and abroad through their decisions. Although business students' professional and fiduciary responsibilities parallel those of doctors, lawyers, social workers, teachers, and other professionals, the training and preparation programs for business professionals have not emphasized ethical practices and behaviors to the same degree as other training programs (Khurana, 2007). The training and the credentialing of business students has clearly affected the ways in which these professionals influenced society (Swanson & Fisher, 2008). No member of society has ever wanted to be represented by an unethical lawyer, doctor, or a business professional (Parks, 1993). In addition to the fact that these corrupt individuals accrued monetary gains because of their unethical decisions, there were other negative ramifications of these choices felt by others. For example, the financial crisis that grew out of the bursting of the real estate and housing bubble involved business professionals at all levels. Most importantly, this experience illustrated how a relatively small number of business professionals acting in an unethical manner could impact our society as a whole (Swanson, 2004; Swanson & Frederick, 2003).

However, some ethical and social values might not be valued by the business world to the same degree as they are in other professions. Khurana (2007), Swanson and Frederick (2003), and Swanson (2004) all pointed to the ethical direction of many agents of corporations as proof of the different valuation of moral and ethical practices across professional fields. Augier and March (2007) and Swanson (2004) laid the blame on the

deficiency of business schools' training of business students on social and ethical issues, and the implications of this training on business decisions for our society. Swanson (2004) suggested that the socialization of business students during the educational training period might lead to an increased likelihood of self-selection into careers perceived to be most lenient on unethical behaviors.

Although there have been several attempts to improve corporate governance, financial market regulations, and rules for prosecuting corporate criminals, no significant changes to the curriculum for business students were made (Swanson, 2004; Traiser, 2007). Khurana (2007), Parks (1993a), and Swanson (2004) suggested that the deans and faculty of reputable business schools did not question their educational practices and policies in order to incorporate ethical training into the curricula of business students. When the major accrediting association for business programs in the U.S. – the Advancement of Collegiate Schools of Business (AACSB) – reviewed its accreditation curriculum standards in 2003, they failed to include a requirement to teach a separate business ethics course (AACSB, 2001). Although this requirement is insufficient to change the extensive socialization process of business students in business programs significantly, AACSB had an opportunity to lead systemic change in the valuation of ethics preparation in business schools by including business ethics curricular requirements. The inclusion of a single ethics course as an accreditation requirement would have sent a strong signal to all accredited business programs regarding the importance of ethics training for business students (Swanson & Fisher, 2008). In a survey of MBA students regarding moral and ethical values in the workplace, students

rated these values as “very important,” but only 22% of the respondents said their schools were doing “a lot” to prepare them to handle moral and ethical conflicts in the workplace (Browning, 2003; Piper, Gentile, & Parks, 1993; The Aspen Institute, 2008). Furthermore, one in five students indicated that they never received ethical training in their programs. Approximately 50% of the students surveyed said that messages and priorities of MBA programs might have contributed to the recent scandals (Piper et al., 1993). The lack of training that would strengthen business students’ professional identity might have also played an important role in these scandals, since these students would not be prepared to defend their ethical and personal principals in the workplace. Students may have observed ethical violations in the workplace but not know how to express their views fully unless they were trained to handle such situations (Petriglieri & Petriglieri, 2009). These studies indicated systemic weaknesses in the professional training of business students concerning ethics.

Trank and Rynes (2003) connected ethical challenges in business to a general trend of de-professionalization in business education. This trend described a path of education that diverged from the intended professional path. Several market forces were key influencers on the field and its present direction. The first key influence identified by Trank and Rynes was the corporate, or market influence on business schools due to business schools’ dependence on donations as a component of their revenues. Due to this funding relationship, corporations were able to exert significant influence on curriculum. This redirected business curriculum from theory, abstraction, and general knowledge towards a narrowly focused approach on the skills needed for the first job Trank and

Rynes (2003). Trank and Rynes observed this trend in business schools that attempted to develop specialized courses such as “Marketing for e-business,” or “Technology Management.” The changes to the curricula resulted in a highly specialized educational focus at the expense of business students losing training in the ability to apply critical thinking and analytical skills, essentials of the development of a professional. Employers and businesses have continued to value technical expertise in the employees that they hire, since it allows them to achieve their financial goals with greater speed and efficiency (Bennis & O’Toole, 2005; Trank & Rynes, 2003). In addition, employees who were narrowly focused in their specialized field made it possible for businesses to gain control over the knowledge base by commoditizing and bureaucratizing professional knowledge (Krause, 1999; Slaughter & Rhoades, 2004). By limiting employees’ expertise, businesses were able to systematically make employees more dispensable, thus facilitating the effort of upsizing and downsizing (Krause, 1999; Trank & Rynes, 2003).

A second main influence on business education was the students’ perceptions of the goals of their education. Students understood corporate preferences for technical training, and since most students go to business school to enhance their income and career prospects (Collins, 1996), they actively sought out this type of education. In a recent study of curricular preferences, business faculty reported a decreasing tolerance for theory among students and an expectation that the course work will be tightly connected to their jobs (Zell, 2001).

Moreover, business students perceived education in ethics as irrelevant to their education. A *Business Week* article (2002) stated that in the wake of myriad corporate

scandals, MIT reported no increase in the number of students who signed up to take ethics courses. Additionally, the instructor at the university reported that many students who preregistered for the ethics class later dropped it in favor of the “hard-skills” classes students felt would be more attractive to job recruiters (Hindo, 2002). Students believed that business managers were the main cause of large ethical scandals in business, and that these ethical scandals were largely the result of managers’ efforts to “make the numbers.” Thus, business students rationalized the unethical actions of business managers and the pressure they applied to their subordinates to act in similarly unethical ways as a normal function of the job. New graduates also believed that most unethical managers go unpunished, and reporting unethical behavior would damage the careers of the whistleblowers but not the managers responsible for the unethical behaviors (Near & Miceli, 1996; Trank & Rynes, 2003). These students’ perceptions shaped the curriculum that students demand and course offerings at business schools (Trank & Rynes, 2003).

Research, criminal cases, and news reports indicated a systemic problem regarding ethical behavior in the business world. Researchers have studied business professionals as well as business students in their graduate and undergraduate programs. Several quantitative and qualitative studies examined business students’ ethical attitudes and the influence of training on their professional values and identity (Bricker & Previts, 1990; Browning, 2003; Costello, 2005; Lan, Windsor, McMahon, King, & Rieger; Lowry, 2003; Petriglieri & Petriglieri). Lan, McMahon, King, and Rieger (2003) compared ethical scores of business, nursing, and liberal arts students on the defining issues test (DIT). They found that undergraduate business students’ scores on the DIT

were significantly higher than nursing students, but were not significantly different from liberal arts students, however the sample size of this study was relatively small ($n=153$) and selected from one university. Browning (2003) surveyed over 1800 business students regarding their thoughts on their training and curriculum. Students reported their concern with the business curriculum that it did not provide a sufficient coverage of ethics or ethical issues. Lowry (2003) investigated 288 undergraduate business students for their moral awareness levels, as they progress in their program. She found that students in their second year of the program possessed higher overall moral awareness scores than students in their last year of the program. However, Lowry (2003) reported that her findings were not consistent with results from prior studies. Shaub (1994) studied the moral reasoning ability (MRA) of students majoring in accounting and found that females and individuals with higher grade-point averages scored higher in their moral reasoning skills. In addition, Delaney (2005) studied the influence of receiving ethical training on MRA of students. He found significant differences in MRA in students receiving additional curriculum in ethics (Delaney, 2006). Carpenter, Harding, Finelli, and Passow (2004a) studied the connection between academic dishonesty in college and dishonesty in the profession and found a strong relationship between self-reported involvement in prior academic dishonesty and self-reported involvement in present dishonest behavior in the workplace.

The prior literature discussed thus far highlights challenges currently facing business educators and the institution of business education. In the discussion that

follows, I address the purpose, goals, significance, and questions upon which this research is built.

Statement of Purpose

The purpose of the study is to assess business students' professional characteristics upon completing their undergraduate business degree compared to students completing their degree in other majors, such as education, humanities, physical sciences, and social sciences. I focus on undergraduate students due to their entry into the professional world, which tends to occur after the completion of a bachelor's degree for most business professionals (Hawawini, 2005; Porter & McKibbon, 1988). Although these students are not yet professionals, the assessment of the factors of professionalism at the end of their business training can provide a starting point for the analysis of business professionals. Therefore, this study will look at the precursors of professionalism among the students, since the attitudes and values that students hold at the beginning of their work-life will be likely to influence the type of professionals they become later in their careers (Nyström, 2009).

The term "Professionalism" used in this study refers to the important factors of professional identity to include ethics—the norms of behavior within the framework of Rawls' behavioral duties (Rawls, 1999). Educational institutions and members of the profession are obligated to provide the training and socialization of these norms of ethical behavior to students who are new entrants to a profession (Kohlberg, 1975; Pascarella & Terenzini, 1991).

Nearly all of the definitions dealing with professionalism reference the key word “profession.” Most scholars identify with Moore and Rosenblum’s (1970) definition that a profession involves (a) a full-time occupation; (b) a sense of calling or commitment to the field; (c) a formalized organization; (d) esoteric, useful knowledge and skills based upon specialized training or education of exceptional duration and difficulty; and (e) an autonomy restrained by responsibility. Scholars studying professions assume that common characteristics among professionals exist. These include (a) expertise that all professionals develop through rigorous training in higher education; (b) a sense of duty to the public good or the “social-trustee” element that compels individuals to restrain from actions of self-interest; and (c) autonomy in actions which stems from professional responsibility or the practice of independent judgment guided by special knowledge (Brint, 1996; Freidson, 1985; Goode, 1957; Moore & Rosenblum, 1970).

Imse’s (1962b) work on the professionalization of business management encompassed the aforementioned qualities of professionalism. Imse’s work outlined the components of a profession (a) fund of specialized knowledge; (b) a highly trained membership (intellectual training); (c) a code of ethics; (d) a sense of altruism; and (e) self-organization. The dimensions identified by Imse’s research would influence other scholars to measure the same constructs statistically Haywood-Farmer and Stuart (1990).

Other scholars studying “professionals” added another category to the professionalism framework that they called “self-concept” (Arthur, 1995; Freidson, 1985; Haywood-Farmer & Stuart, 1990). This category predicted readiness for carrying out the responsibilities of a professional role. However, Haywood-Farmer and Stuart (1990)

used “own superiority” as one of the categories to evaluate “self-concept” in doctors and specialists. This category captured survey participants’ self-confidence in the practice of their profession. A study of nursing professionals from Hensel (2009) measured nurses’ professional self-concept as they graduate and enter the profession. The items tested within the “self-concept” category included self-confidence stemming from expertise, communication ability, leadership, and interpersonal relationships (Hensel, 2009).

In addition to the components of professionalism described above, several scholars discussed the influence of the industrial revolution and the growth of a market economy on professionals and their behavior within organizations (Brint, 1996; Freidson, 2001; Krause, 1999). These scholars studied the influence of capitalism on professionals. They identified economic and political pressures that influenced professionals to change from the ideal-type described above (Brint, 1996; Freidson, 1985). These influences allowed professionals to favor elements of professionalism, such as expertise, that draw financial rewards from the marketplace. The emphasis on knowledge and expertise had stronger ties to employment than the social-trustee beliefs that compel professionals to practice their profession while working towards the good of the public (Brint, 1996; Freidson, 1994). Furthermore, Brint (1996) noted that professionals wanted to shake free from pre-capitalist ideals of professionals respecting their “social-trustee” duties. These duties compelled members within the profession to view themselves as aggregations of socially significant functions that work on a single important sphere of social life, such as health, education, and business (Brint, 1996). However, professionals in those spheres

had responsibilities beyond technical expertise, since they served as moral custodians of knowledge and its function in how it served the public (Freidson, 1985).

Other scholars discussed how the organizational structure of professions diminished the power of the professionals within that structure (Krause, 1999). Influences of capitalism and the focus on generating profits within organizations hemmed their interest in professionalism and the pursuit of professionals who were interested in serving the public good.

Yet these economic, political, and structural factors should not have influenced education that students received while pursuing professional tracks. Khurana (2007) stated that when graduate business education started in the late nineteenth century, it had the promise of developing graduates as professionals similar to disciplines such as law or medicine. Additionally, Drucker (1968) stressed that business schools should view themselves as social institutions and not intellectual ones. Social institutions have social missions rather than merely developers of expertise. He expressed disappointment in the direction of business schools becoming more scientific in their applications of business methods, rather than socially relevant (Drucker, 1992). Nevertheless, business schools started to align themselves with market organizations, thus training these graduates to fulfill the needs of the market. The change in the direction of business schools confirms the theoretical frameworks of previously mentioned scholars, who wrote about the trends in professionalism and the role of professionals within organizations (Brint, 1996; Krause, 1999). These scholarly discussions on the changing nature of professionalism

and professionals connect well to changes in the business profession and the training of business students.

In order to study business students within a model of professionalism, I have provided detailed definitions of each of the elements describing all the characteristics that a “professional” possesses according to the literature.

Autonomy of judgment. Professional autonomy was defined as the practice of independent judgment guided by special knowledge (Goode, 1957; Moore & Rosenblum, 1970). The professional autonomy of the subjects was measured by their ability to make independent decisions given their special expertise, without the influence of clients or members not associated with the profession (Moore & Rosenblum, 1970). Professional autonomy of subjects was derived from their connection to a separate body of authority such as a professional association (Abbott, 1988; Krause, 1999). This association provided the professionals with an authoritative source of reference for the rules and regulations of the profession (Freidson, 1994). Several scholars referred to the concept of professional autonomy in reference to many professions such as law, medicine, and accounting (Freidson, 1984; Hall, 1968).

Expertise. Expertise was determined to be a vital component of professionalism since it represents the foundational knowledge that justifies the reason for the profession (Brint, 1996; Freidson, 1984). Professional expertise was also stated to be the core of professionals’ economic assets that distinguishes them from other social classes (MacDonald & Ritzer, 1988).

Self-concept. Arthur (1995) and Cowin (2001b) suggested that “self-concept” was a key measure for professionalism since it is an attribute that professionals developed with their expertise in the profession. The special knowledge that professionals attained provided them with a feeling of superiority over others (Haywood-Farmer & Stuart, 1990). Self-concept was also associated with higher intellectual and social self-concept ratings (Freidson, 1985; MacDonald & Ritzer, 1988).

Social-trustee. A foundational component of professionalism has been the strong ideological and ethical component that professionals developed (Brint, 1996). Friedson (2001) defined this component as “claim a devotion to a transcendent value which infuses its specialization with a larger and putatively higher goal which may reach beyond that of those they are supposed to serve.” This definition which encompassed “a belief in service to the public” dictated that the work performed by the professional will benefit both the public and the practitioner (Goode, 1957).

The previous categories of professionalism set a foundation for examining business students. Instead of only focusing on the ethical attitudes of senior-level business students, this study uses a comprehensive model of professionalism to capture a more robust measurement of professionalism beliefs. Using a comprehensive model of professionalism is also more consistent with other literature on professionalism, which considers more than ethical attitudes (Freidson, 2001; Hall, 1968). Factors such as “autonomy of judgment” and “self-concept” are critical to enable professionals to perform at higher levels when serving their clients and society (Freidson, 2001). For example, professionals who have high “self-concept” will be more likely to defend their

position in a situation of ethical conflict in the workplace. Also, professionals exert their “autonomy of judgment” skills to express their professional opinions and avoid compromising external influences (Freidson, 1984; Hall, 1968). Strengthening all of the professionalism components is a necessary requirement to reach higher levels of performance and effectiveness for professionals (Hall, 1968; Imse, 1962).

As noted above, this present study focuses on the precursors of professionalism. Since business students have not developed as professionals yet, since they are lacking the experience necessary to be evaluated as professionals, this study will focus on students’ professional values and attitudes toward professionalism at the end of their undergraduate education. By exploring the professional attitudes of senior-level business students, this study will affirm or deny the promise of business education as it was intended by the founders of business programs at the university (Drucker, 1992; Khurana, 2007). In order to explore professionalism notions in undergraduate senior-level business students, it is important to define the precursors of professionalism that will be measured in these students.

Precursors of professionalism. Professional values and characteristics will be explored as precursors of professionalism in undergraduate business students. These precursors are based on the elements of professionalism discussed above.

For the “autonomy of judgment” element, this study measured precursors such as critical thinking, analytical and problem solving abilities, general knowledge, and expertise in the discipline. These notions provided indicators for students’ ability to behave autonomously, once they developed expertise in their disciplines.

For the “expertise” element, the study measured precursors such as students’ desire to become an authority in their discipline and students’ desire to be recognized by colleagues for expertise in their discipline. To represent these concepts accurately, I used the term “desire for expertise” when referring to this element throughout the study.

For the “self-concept” element, the study measured precursors such as students’ social and intellectual self-concept, leadership ability, public speaking ability, and self-understanding. These notions provided indicators for students’ superior feelings of themselves as they progress in their professionalism.

For the “social-trustee” element, the study measured precursors such as students’ desire to be a leader in their community, participate in political affairs, influence social values, or participate in a community action program. These indicators were used by the Higher Education Research Institute (HERI) at UCLA in a construct measuring undergraduates’ social agency. Therefore, I used the same indicators and referred to this element as “social agency” throughout the study. This element represented the social-trustee component of professionalism.

The categories above produced an overall measure of students’ professional attitudes (professionalism precursors) at the end of their undergraduate training and immediately before their entry into the profession. This measure was important to highlight business students’ position on a professionalism scale that was based on a theoretical framework of professionalism. This investigation also compared business students to students in other academic disciplines. The results of this investigation indicated whether additional emphasis was needed in curriculum and instruction to

supplement the professional training of business students (see Chapter five details). The study used the College Senior Survey (CSS) administered by the Cooperative Institutional Research Program (CIRP) at the Higher Education Research Institute (HERI) at the University of California Los Angeles (UCLA). The survey was administered to college seniors at over 110 institutions during the 2006-2007 and 2007-2008 academic years. Following is a discussion of the goals of this study.

Goals of This Study

In this dissertation, I used the statistical techniques of exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to assess the dimensionality of the precursors of professionalism in undergraduate students. I used the analysis of covariance method (ANCOVA) to compare the measures of these precursors in business students to students in other majors (*Figure 1*). I selected the survey items included in the study based on theory that explained professionalism in general concepts such as “autonomy of judgment,” “expertise,” “self-concept,” and “social agency.” Because these concepts cannot be measured via direct observation, they were treated as latent factors and measured with multiple indicators that defined the underlying construct (Hall, 1968; Imse, 1962). In my analysis, I tested the assumptions that the four subtypes of professionalism were the correct theoretical latent factors explained by the indicators collected from participants’ survey responses (Abbott, 1988; Freidson, 1994). I also tested the hypothesis that students’ self-reported items confirmed the presence of the latent factors of professionalism.

The first goal of the study was to test the validity of a model that includes four distinct latent variables that represent the precursors of professionalism. Once I established the validity of these factors using an EFA, I proceeded to use CFA. I used the CFA to specify exactly how the indicators loaded on the four constructs of interest and tested the fit of my model to the data. This process was used to confirm the hypothesized model of professionalism.

The second goal of the study was to determine if undergraduate business students' mean factor scores were different from students who had pursued other majors in college. I used the results from this analysis on business students' precursors of professionalism to draw implications for the business education and business profession. Following is a conceptual model of this present study (*Figure 1*).

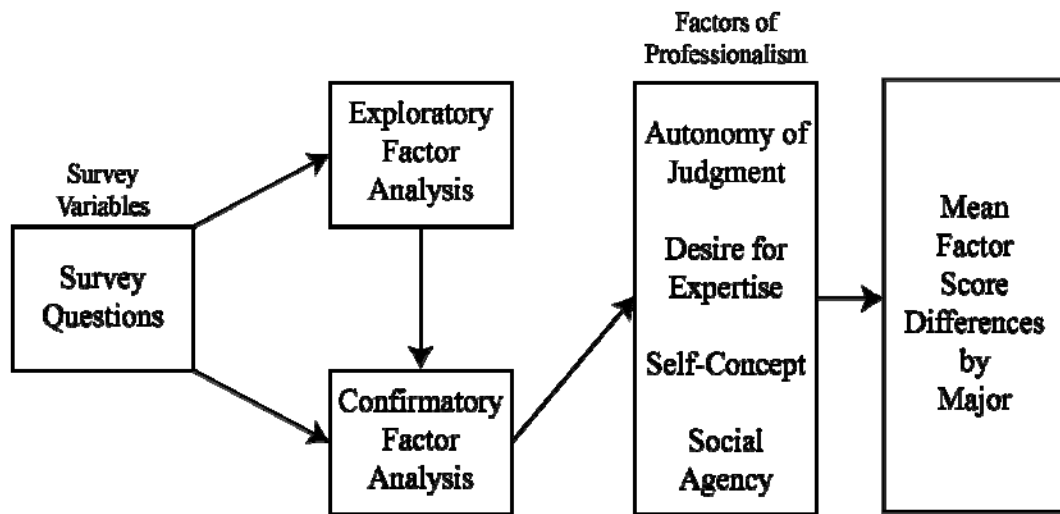


Figure 1. Conceptual Graph of the Study.

Research Questions

This study was guided by the following research questions:

1. (a) Does EFA support the theory that precursors of professionalism can be characterized as a multidimensional construct comprised of four latent variable sub-types of “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency?”

(b) Does CFA support the hypothesis that there are four constructs related to precursors of professionalism that can be characterized as a multidimensional construct comprised of four latent variable sub-types of “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency?”

(c) Are the indicators used for each latent factor consistent with those reported in the research literature?

2. (a) Are the factor scores of “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency” of senior-level undergraduate business majors different from students in all other disciplines?

Research Aims and Hypotheses

The following are the research aims and hypotheses corresponding to the research questions above:

Primary Aim 1: This aim will test whether the theoretical model of professionalism can be supported with an exploratory factor analysis, thus the hypothesis is as follows:

Hypothesis 1.1: Using an EFA, the variables used in this study will optimally load onto four factors.

Primary Aim 2: This aim will test whether the theoretical model of professionalism can be supported with a confirmatory factor analysis, thus the hypothesis is as follows:

Hypothesis 2.1: The CFA will confirm that the survey items load onto the appropriate latent factors supporting the hypothesized theoretical model.

Primary Aim 3: This aim is to test students for specific values espoused by the “autonomy of judgment” aspect of professionalism such as the ability to think critically based on knowledge in the discipline, in order to have responsible professional judgment. This compares business students’ scores to students in other major. The literature indicates that business education emphasizes more practitioners’ aspects of learning; therefore, the hypothesis is as follows:

Hypothesis 3.1: Business students will have lower scores in their “autonomy of judgment” factor of professionalism compared to students from other majors.

Primary Aim 4: This aim is to test students for specific values espoused by the “desire for expertise” aspect of professionalism, such as the intent to become an authority in one’s field and to be recognized by other colleagues in the profession. The literature indicates that the market rewards business students for "expert" type of knowledge; therefore, the hypothesis is as follows:

Hypothesis 4.1: Business students will have higher scores in their “desire for expertise” factor of professionalism compared to students from other majors.

Primary Aim 5: This aim is to test students for specific notions expressed by the “self-concept” aspect of professionalism, such as leadership, self-confidence, and public-speaking skills. The literature indicates that business students have high “self-concept” due to excessive market rewards for their expertise; therefore, the hypothesis is as follows:

Hypothesis 5.1: Business students will have higher scores in their “self-concept” factor of professionalism compared to students from other majors.

Primary Aim 6: This aim is to test students for specific values espoused by the “social-trustee” such as social citizenship as a professional within a community. The literature states that business education has steered away from humanistic aspects of business education, thus the hypothesis is as follows:

Hypothesis 6.1: Business students will have lower scores in their “social-trustee” factor of professionalism compared to students from other majors.

Significance of the Study

The historical influences on business education and the concurrent changes in higher education exacerbated the problem in the quality of instruction of business students in their programs (Gumport, 2000; Khurana, 2007; Slaughter & Rhoades, 2004). Prior studies emphasized literature from higher education – and its influence on students in general – or literature from business, and how it related to business students. This study merges literature from two disciplines and reports on the resulting influence on business education.

Additionally, this study uses the sociological concepts of professionalism to address apparent ethical challenges in the business field. Previous professionalism studies were carried out on small samples of participants or focused on one area of professionalism, such as “social agency” or “self-concept” of professionals (Cowin & Hengstberger-Sims, 2006; Hall, 1968; Haywood-Farmer & Stuart, 1990). This study uses a large secondary dataset to confirm previous theoretical models of professionalism and to validate the elements of professionalism—“autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency.” Several studies on ethical issues were carried out on a small sample of business students in several classrooms in colleges and universities (The Aspen Institute, 2008; Traiser, 2007; Wilbur, 1984). This study was the first effort at using a national dataset covering two years and compared a large sample of business students to all other students in college using public and private institutions.

Scholars who studied professionalism and used empirical models to test theories regarding professionalism have generally surveyed professionals in the field after they started their careers (Cowin, 2001; Hall, 1968; Haywood-Farmer & Stuart, 1990). This study bridged the gap between professionalism in the workplace and in a collegiate education setting, thereby facilitating researchers and educators’ assessment of the goal of building professionalism in all of its aspects—“autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency”—in colleges’ educational programs.

Until recently, the promise of professionalism in college education was only theoretical. This study allows researchers and educators to bridge from theoretical concepts to evidential data that can lead to further improvements in designing educational

programs. Additionally, prior researchers who studied ethics in business education did not use a comprehensive professionalism model to study business students. Instead, they focused only on explaining students' ethical behavior as a response to a change in curriculum or exposure to ethical case studies (Borkowski & Ugras, 1998; Lowry, 2003; McNeel, 1994; Parks, 1993). Their research is grounded in the moral development of adolescents and college students. Although these studies have acknowledged variations in students' moral development and their construction of an ethical identity during college, they did not assess all of the accepted dimensions of professionalism in business students.

This study answers several questions regarding the professional values that business students start with in their careers. Business education is a large segment of overall education: approximately 20% of undergraduate students at four-year institutions, year after year, select business as their undergraduate major (Snyder, Dillow, & Hoffman, 2009). For example, in 2008-09 academic year, of the 1,601,000 bachelor's degrees conferred, the greatest number of degrees were conferred in the field of business, totaling 348,000 bachelor's degrees (National Center for Educational Statistics, 2010). The knowledge of business students' values and attitudes at the end of their undergraduate degree can help educators tailor curriculum and course offerings to these students in order to develop students in all the attributes of professionalism, and not just practitioners' type of expertise. A study of this large population justifies the importance of this research.

Understanding the significance of this study leads to the review of the literature that provides background for the study as well as a recapitulation of previous studies performed in this area. The following chapter provides a summary of the prior scholarship on business education that has influenced the field, in addition to the research conducted on professionalism in business education, as well as in other disciplines. This literature review builds a foundation for the methodology selected for the study.

CHAPTER 2: LITERATURE REVIEW

The purpose of this literature review is to identify the strengths and gaps in the literature relative to the education of business students and the ramifications of the educational process on the development of ethics. The review of the literature is organized to discuss (a) the history of business education; (b) the discourse of practitioners' training in business schools and the emphasis on practical over theoretical knowledge; (c) powerful contemporary influences on business education, such as market economy and professional organizations; (d) moral development in business students; and (e) studies of professionalism in business and other disciplines. Following the review of the literature related to the aforementioned topics, I will then turn to the theoretical frameworks that have been advanced to explain the function of business education and training in college. This discussion addresses (a) hidden curricula and its influence on professional identity (b) the business profession and professionalism discourses. I conclude this chapter with a discussion of the conceptual basis of the study, the constructs that will be studied, the rationale supporting the quantitative approach to this study, and the presentation of the conceptual model of the precursors of professionalism.

History of business education. Since the inception of business education at the start of the 20th century, the marketplace has exerted substantial influence on the practice of business education. Unlike other academic disciplines, business education did not develop from research and scientific methods used in the field; instead, it evolved from industry procedures and practices that were formalized as business theory and textbooks (Foundation, 1959; Pierson, 1959; Porter & McKibbon, 1988). Two major research

reports – the Pierson (1959) study and the Gordon and Howell (1959) report – that discussed the status of business education emerged at a point when business school flourished into a major component of American higher education. These reports found weak business curriculum, poor faculty quality, and greater emphasis on the vocational curricula in U.S. business schools. The reports advocated for rigorous curricular content in business school courses, the integration of liberal arts courses, and additional academic training of business faculty to bring them up to the level of other university faculty (Hugstad, 1983; Pierson, 1959; Porter & McKibbon, 1988).

However, the high demand for business schools to produce an increasing number of graduates set the conditions that allowed these programs to continue using the same methods that were known weaknesses. The educators in business schools were composed of faculty from primarily professional tracks which substantially influenced the instruction in the classes (Khurana, 2007; Martensson, Bild, & Nilsson, 2008). Given the qualifications and training of the faculty, greater emphasis was placed on teaching the students applied skills over theoretical knowledge, critical thinking, and the integration of theory into practice.

The quality of business schools influenced the courses offered to business students, increasing the emphasis on applied skills while decreasing the attention given to professional training. Khurana (2007) indicated that business schools proliferated during a time when there were numerous unresolved questions about the role of business and corporations in society, as well as uncertainty about their willingness to comply with broader societal objectives. Khurana (2007) suspected that the change in business

schools' focus on professional education occurred subsequent to the publication of Milton Friedman's (1970) doctrine on "business." According to Khurana (2007), Friedman's doctrine argued that the primary concern of U.S. business should be the maximization of corporate profit and shareholder value, since any other system in his view would become a battleground for the conflicting interests of stakeholders. This conflicting arrangement of varying interests would damage corporations and subsequently the economic well-being of society. The impact of this framework reached beyond the policies governing educational practices of the day by shifting attention towards the interests of economic policy, businesses, and stakeholders in the market. This framework also provided business managers with the justification to place the interest of the institutions first, without balancing the other interests of society with business practices and policies (Augier & March, 2011; Khurana, 2007). As this doctrine permeated the academic field of business, it became the prevailing theory that business schools used to guide business school practices, beginning with one of the most prominent business schools of the day at the University of Chicago (Augier & March, 2011; Khurana, 2007).

The doctrine advanced by Friedman had a major influence on business students and managers' indoctrination, thinking, and practice in the business world. The ratio failure-to-success in business in the U.S. has suggested that business students had deficits regarding their understanding of the influence of this doctrine on their business decisions and society (Augier & March, 2011; Khurana, 2007; Nino, 2011). Several studies revealed that business students vacillate between business values learned in their

programs – that emphasize the maximization of shareholders’ wealth – and societal values, which require a balance between the needs of all stakeholders and society (Augier & March, 2011; Browning, 2003; Khurana, 2007; Swanson, 2004; Swanson & Frederick, 2001, 2003). As Ehrensals (2001) noted, instead of an emphasis on pluralism and cultural sensitivity, the business curricula shifted toward competitiveness, which encourages students to have a competitive mentality and a primary goal of outperforming everyone with little, to no sensitivity regarding the costs incurred by others.

The historical influences on business education highlighted important trends and drivers of the curricula and instructional practice in business schools (Augier & March, 2011; Khurana, 2007; Swanson & Fisher, 2009). The effects of these policies have continued to affect practices in business education and can be observed at many business schools today. These policies and practices influenced business education and the training that business students received in their undergraduate and graduate programs. Yet there were other influences on the business discipline, as discussed below.

Practical-knowledge emphasis in business education. The success of business enterprises in the twentieth century helped to fuel the growth of business schools (Pierson, 1959). During the onset of the globalization of the economy on a large scale, the commercial sector pressured the States and the corporate sector to introduce educational programs that would fill the demand for a commercial labor force that could compete in a global marketplace. The influence of the corporate sector encouraged institutions to direct their efforts to the development of programs that fulfilled the needs of the market (Slaughter & Leslie, 1997). The close ties between business concerns and

academia caused business schools to emphasize the experiential aspects of business education over general education and the values of the business profession (Brint, 1996; Khurana, 2007). As industries demanded more practitioners' knowledge, business schools increased the emphasis on specialized skills in areas such as marketing, accounting, and finance (Porter & McKibbin, 1988).

A consequence of the education that practitioners received resulted in significant changes in the instruction workforce. The percentage of adjunct and professional faculty who worked in business education has consistently remained above 51% of the total instructional workforce, an indicator of weak instruction. Of the adjunct and professional educator population, only 11% held Doctoral degrees, while the majority taught with only a Master's degree (Cataldi, Bradburn, Fahimi, & Zimbler, 2004). The teaching workforce that lacked training in research has influenced business students' development of professional values in a manner consistent with other undergraduate programs of study (Cataldi, Bradburn, Fahimi, & Zimbler, 2004; Gordon & Howell, 1959). In 1950, an internal memorandum of a Ford Foundation assessment report described the quality of business faculty as

...generally inferior, a fact admitted by many responsible individuals in the field of business education. Indeed, to put the matter in its harshest light...the problem consists of unimaginative, non-theoretical faculties teaching from descriptive, practice-oriented texts to classes of second-rate vocationally-minded students (as quoted in Khurana, 2007; p. 249).

The emphasis of business schools on experiential knowledge resulted in higher salaries for students, since this knowledge was responsive to corporate needs. This satisfied the desires of students and business schools. The minimum requirements for a business degree identified by the market were met, which led to complacency in business schools concerning the need to improve the educational standards. Hugstad's (1983) studied business schools' offerings as compared to industry's preferences. He aimed to verify whether the industry still preferred practical training to analytical/theoretical training, and whether the attitudes of academicians and industry executives displayed any evidence of convergence. Hugstad surveyed 125 personnel directors, 250 deans of liberal arts schools, and 125 deans of business schools. He found that business personnel directors displayed continued indifference to the inclusion of the liberal arts training in business programs. Business's preference for applied skills and influence on the curricula of business schools was a significant contributing factor to the lack of emphasis on the liberal arts in business schools (Porter & McKibbin, 1988).

However, this emphasis on applied skills in business schools resulted in a myopic training paradigm. These training practices facilitated the development of expertise in students, at the expense of the other domains of the knowledge that business professionals needed to possess to develop as professionals. The influence of industry is a strong factor, but there are other influences on business education as follows.

Powerful contemporary influences on business education. Colleges and universities developed as non-profit organizations that were highly dependent on state and federal funding (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004). They had

high aims and aspirations for their institutional missions. However, when federal and state funding decreased, these institutions and the programs within it were restructured to depend on other sources of funding, such as private and industry funds. The construct of academic capitalism, as noted by Slaughter and Leslie (1997), was based on the premise that administrators of educational institutions had slowly separated their enterprises from state and federal government and became closer and more connected to the market. Knowledge became a commodity to be extracted, manufactured, and sold as a private good, and the original aim of making knowledge available to all was thwarted by market mechanisms.

Academia and industry were organized in intermediating networks and were actors in arrayed networks that mediate between public, non-profit, and private sectors utilizing academic capitalist knowledge (Slaughter & Rhoades, 2004). In these networks, organizations brought different sectors from industry and academia to address common problems that belonged solely to academia. For example, in 1980 corporations and legislators worked together to create individual education accounts (IEAs). The IEAs allowed workers to make tax-free contributions to savings accounts that workers could later use to retrain themselves in professional tracks or special certifications at colleges and universities offering to develop these specialized programs (Slaughter & Rhoades, 2004). The network of businesses and universities redrew educational boundaries to take advantage of the new markets that were served by the new economy.

Donations to business schools did not stop at specific contributions to programs. Corporations continually made generous contributions to business programs. One study

estimated that there were fourteen major donations to U.S. business schools between 1997 and 2003, ranging from \$23 million to \$100 million (Starkey & Tiratsoo, 2007). These contributions were likely to have influenced the ideology of faculty and administrators at these campuses by inciting them to customize educational offerings as if it were a “private good.” Slaughter and Rhoades (2004) described this phenomenon by saying that the public, the faculty, the students, the corporations, and the state were “actors” rather than passive bystanders in this network that generated social changes. The power of this network resided in academic capitalism, which blurred the boundaries between the private and public sector and allowed significant influence from the private sector on education.

Arguably, business schools with their tight connections to the business field were a prime example of the application of the theory of “Academic Capitalism” (Slaughter & Leslie, 1997). They taught management principles that helped corporations and not society at large (Browning, 2003; Parks, 1993). For example, these institutions taught business principles that served the power of the corporation and its shareholders, rather than its societal stakeholders, in order to ensure the survival of the school and the success of the students (Augier & March, 2011; Khurana, 2007; Swanson & Fisher, 2009).

Another influence on business education was the main accrediting agency for business programs in the United States, the AACSB. This agency had the most authoritative power to dictate requirements at business schools. The AACSB failed to impose rigorous requirements to prepare business students to face the challenges of professional and ethical conundrums (Swanson & Frederick, 2003; Trank & Rynes,

2003). In addition, the AACSB often remained silent in response to the growing number of corporate financial scandals affecting the U.S. In 2003 the AACSB included a recommendation that all business school curricula include content covering ethical practices as a requirement for accreditation, they did not specify how business schools should incorporate this requirement into current courses and/or course sequences (Miles, Hazeldine, & Munilla, 2004). Instead, the AACSB allowed business programs to decide how they would integrate ethical curriculum within their courses and failed to require a single course on ethics for accreditation (Miles et al., 2004; Swanson & Frederick, 2003).

As a result, the coverage of professional ethics in business coursework was superficial and inconsistent (Miles et al., 2004; Swanson & Frederick, 2001). Deans from business schools claimed that ethics and professional training was integrated in several courses, such as marketing, finance, operations management, accounting, and strategic management. However, this still failed to address the primary concern of included content specifically focused on ethical behaviors, choices, and practices. Swanson (2004) found a large number of business professors who found it burdensome to include well-developed case points on ethics. Swanson further explained that the professors rationalized their decision based on the desire to cover the required material in the courses the lack of training in teaching these concepts effectively. This deficient training influenced the moral development of business students.

Moral development of business students. During college, business students might have developed a different moral identity than their peers due to historically weaker academic backgrounds and continuing business training that emphasizes practical

skills, competitiveness, and inadequate coverage of ethical challenges (Ehrensals, 2001; Hugstad, 1983; Pierson, 1959; Porter & McKibbin, 1988). Several documented approaches for the development of ethics in education emerged in recent time. Four models, in particular, were repeatedly referenced in the literature (Davis & Welton, 1991; Knotts, Lopez, & Mesak, 2000). The first model was based on Kohlberg's (1973) theory of moral development, which attempted to stimulate students' thinking about moral issues and examine the implication of moral problems. This approach developed students' levels of moral judgment by allowing them to engage in thoughtful consideration of moral issues (Kohlberg, 1973). The second model was based on "Values Transmission" which attempted to instill certain values in students, such as standards and rules of behavior that were considered desirable for the society (Superka, 1976). The third approach "Values Clarification" allowed students to perform a self-examination, through rational thinking and emotional awareness, to clarify personal values without indoctrinating students in specific rules and ethical standards (Morrill, 1980). The final approach "Moral Action" helped students advance through the stages of Kohlberg's developmental framework of morality (Kohlberg, 1975; Kohlberg & Candee, 1984). The unifying theme that underpinned each of these models was the idea that students would grow, in terms of moral development, as they interacted with moral issues and examined the implications of their thoughts and actions. Moreover, students improved in their ability to evaluate ethical dilemmas, when their college programs afforded them the opportunity to engage in thoughtful consideration of ethical issues.

An alternate theoretical framework based on moral development through stages of maturation was also developed by Kohlberg (1976). The stages were divided into two phases of pre-conventional and post-conventional levels of moral development. Within the pre-conventional level, there are four stages. Kohlberg characterized the first stage of development by individuals' avoidance of rule breaking when punishments were expected. During the second stage moral reciprocity emerged, which meant following rules when in one's best interest. The third stage was marked by the awareness of shared feelings of others and seeking of approval from friends and family. The fourth stage was reached when individuals displayed obedience for law and order, thus preventing breakdown of society. Kohlberg felt that many individuals in a given society were able to advance to this level of ethical development. The two stages of the post-conventional level, however, were reached by far fewer people. People who had advanced to the fifth stage had developed an awareness of other people's rights and universal principles of justice. The final stage of this developmental framework was reached when individuals were concerned with consistent ethical principles, equality of human rights, and respect for the dignity of human beings in general.

These moral development theories above show that through education, students can mature in terms of ethics. When these theories are tested with business students, they continue to illuminate the path of students' ethical development through the exposure to ethical dilemmas, experiences, and thoughtful engagement in the process of moral development (Davis & Welton, 1991; Lysonski & Gaidis, 1991).

Little research has addressed business students' attitudes towards societal issues and their ethical development during college. Piper et al. (1993) interviewed forty-two first-year Harvard MBA students in a study evaluating their moral constructs. The study found that these students had a limited understanding of systemic harm and societal injustice and the consequences of their decisions, although they had a strong sense of interpersonal accountability for trustworthiness and honesty (Education, 2008; Piper et al., 1993). Many of these students lacked encouragement to think critically about societal issues and the influence of business on society (Piper et al., 1993). However, (Pascarella & Terenzini, 1991) found evidence that college students' moral reasoning abilities were enhanced during undergraduate study.

Shaub (1994) studied moral reasoning ability (MRA) of students majoring in accounting and found that females and individuals with higher grade-point averages scored higher in their moral reasoning skills. Yet, the researcher did not find any evidence that could explain why females scored higher on their MRA. In addition, Delaney (2005) studied the influence of receiving ethical training on MRA on students. He found significant differences in MRA in students receiving additional curriculum in ethics (Delaney, 2006).

McNeel (1994) conducted a meta-analysis on studies of students' moral development in undergraduate programs finding an average advantage of 28% on the Defining Issues Test (DIT) for seniors over freshmen in principled moral reasoning. For business students, if these patterns of moral development in college did not result in

similar improvement, it may have led to problems in their professional lives (Khurana, 2007; Parks, 1993; Swanson, 2004; Swanson & Frederick, 2003).

Some studies indicated that business schools did not attempt to change their programs in spite of the rise in ethical misconduct in the corporate environment (Khurana, 2007; Swanson & Frederick, 2003). However, business programs that lacked the instruction necessary to develop business students' societal values were not in compliance with AACSB accreditation requirements which stated that the responsibility for the education related to "individual ethical behavior and community responsibilities in organizations and society" is the responsibility of business schools (Procedures, 2006). It was not surprising that the reputation of several prominent business schools was harmed, given the association of their alumni with a number of infamous corporate scandals (Swanson, 2004). The scholars that were mentioned evidenced a strong signal that business students were not developing as well as they should as professionals during their graduate and undergraduate programs.

Professionalism studies in business and other disciplines. Numerous scholars outlined models of professionalism that included the following components (a) belief in service to public; (b) belief in self-regulation; (c) sense of calling to field; (d) a feeling of autonomy; and (e) professional organizations as a source of authority and reference (See *Figure 2* and *Figure 3*). Hall (1968) used a 50-item instrument known as Hall's Professionalism Scale. He compared and ranked different professionals in accounting, advertising, law, engineering, medicine, business, and social work. Hall's studies focused on the structural and attitudinal facets of professionalization that influenced the

strength of professional values. He stated that there was a link between the strength of professional attitudes and socialization that took place in the training program and the profession itself. One of Hall's findings indicated an inverse relationship between bureaucratization and professionalism. An increase in bureaucracy in the workplace resulted in employees achieving lower scores on the professionalism scale. Hall (1968) attributed these results to employees' loss of autonomy due to the established hierarchy in the work environment that reduced employees' decision-making ability. This was an important finding due to the presence of a formal organizational structure in most businesses (Hall, 1968).

Haywood-Farmer and Stuart's (1990) study examined professional values. They developed an instrument to measure the degree of professionalism within medical services professionals (*Figure 3*). Haywood-Farmer and Stuart used EFA to test an instrument that measured the following scales of professionalism: (a) job autonomy; (b) societal role and impact; (c) expertise; (d) self-confidence; and (e) feeling of superiority. They found that the dimensions generated by the study were more useful to assess the degree of professionalism than individual components, such as expertise or autonomy.

Several professionalism studies conducted in the nursing profession examined the dimensions of nurses' general self-concept in connection with their profession (Cowin, 2001; Hensel, 2009). One study by Cowin (2001) used factor analysis to identify the following dimensions of professional self-concept: (a) a nurses' general self-esteem; (b) empathetic support given to another; (c) communications, defined as effectively sharing information and ideas; (d) knowledge using nursing skills and theories; (e) staff relations

such as collegial relationships; and (e) leadership. These dimensions of “self-concept” were matched closely in this present study.

As mentioned in the discussion above, several researchers studied professionalism in various fields. The prior studies highlighted the importance of studying the multi-faceted area of professionalism to better understand the dimensionality and factors that have influenced this latent attribute (Cowin & Hengstberger-Sims, 2006; Haywood-Farmer & Stuart, 1990). Additionally, the prior studies indicated that the scale of professionalism varies as a function of the organizational environment (Hall, 1968).

The previous review of the literature described the areas related to professionalism values in business education. In the next section, I discuss the theoretical frameworks that guided this study and their relationship to the questions that this research seeks to address.

Theoretical Frameworks

Business education has been influenced by institutional and economic theories since its inception. These theories can be classified as traditional or contemporary discourses that framed the collective and individual practices of academics in business schools. The categories of applicable theories included academic capitalism, hidden curriculum, ethics development in education, and professional theory. Hidden curriculum elucidated how business students were influenced by messages implied in curricula and faculty lectures. . Professional theory provided background on the development of professionals.

Hidden curriculum and its influence on business students. Various studies have explored the presence of hidden curriculum in educational environments. Several scholars (Giroux, 2001; Margolis, Soldatenko, Acker, Gair, et al., 2001) have developed explanations for the hidden curriculum in higher education. Hidden curriculum is defined as the socialization process that students undergo in their educational training in college (Lynch, 2006). It includes the norms that students encounter in their education that will prepare them to be involved in the public sphere. Lynch (2006) defines some of these norms as values that include independence, achievement, universalism, and specificity; these norms are required so that students are able to develop the skills to collaborate with the modern industrial society. Lynch (2006) argues that some of these norms are not always universal, but often are particular, producing unequal environments for students. Margolis, Soldatenko, Acker, and Gair (2001) discuss how a “hidden curriculum” helps explain schools’ hegemonic function(s) that also maintains power of state.

Hidden curriculum in business education is a topic that has been discussed by scholars from the areas of business and sociology as well as other disciplines (Bowles & Gintis, 1976; Ehrensall, 2001). These scholars argued that management education, in a symbolic manner, separates business graduates from other graduates by preparing them to be future business executives, thus separating them as the “white collar” crowd (Ehrensall, 2001). Bourdieu and Passeron (1990) take this thought even further by asserting that through schooling and pedagogical action there is perceived differentiation of class interests between blue-collar and white-collar employees. In business education, there is

an understood alliance between the interests of the trained white-collar business managers and the power elite. This training helps pass the power to the newly trained agents—business students—to exercise pedagogical authority via their claim to expertise (Ehrensall, 2001; Ottewill, McKenzie, & Leah, 2005).

Hidden curriculum is also conveyed in business textbooks. These textbooks portray capitalistic environments as ideal. Bowles and Gintis (1976) demonstrated that schooling under capitalism is dominated by the imperatives of profit and domination rather than human need. There is an overemphasis in business pedagogy to protect the interests of the shareholders of an organization without the explicit suggestion of taking into account other societal stakeholders' interests in the decision-making-process (Ehrensall, 2001). This may lead to the reduction of business students' sensitivity to overall societal interests, and social-trustee professional values (Brint, 1996; Ehrensall, 2001; Ottewill et al., 2005). This study tests for business students' "social agency" dimension and compares them to other students in college. The hidden messages in business curriculum may lead to lower "social agency" scores for these students.

Professional theory and professionalism discourses.

Professional theory as posited by Abbott (1988) borrowed from institutional theory in its use of organized constructs to classify expertise. Knowledge has always required an extensive quantity of learning and human decision making to manage resulting expertise. Professional organizations held individuals together once they graduated from college, based on institutionalized arrangements that created economic returns to their constituencies (Abbott, 1988). The promise of a profession in areas of

prestige, compensation, and social network has remained a consistent goal for individuals in Western cultures. These professions formed organized bureaucracies in fields such as law, medicine, accounting, engineering, and architecture. However, colleges and universities were the dominant mechanisms for producing professionals.

Recent transformations in the business and academic profession at universities were partly explained by ideological, economical, and structural models that were generated from the dynamics of neoliberalism, technology, and globalization (Gumport, 2000; Honan & Teferra, 2001; Slaughter & Leslie, 1997). New modes of production mechanized the production of graduates and increased the emphasis on the bottom line in business schools. This resulted in a new organizational structure that placed more emphasis on the financial results of the institutions rather than the goals of educating the masses to improve democracy and raise the standard of living for all (Levin, 1987; Slaughter & Rhoades, 2004; Torres & Schugurensky, 2002). The transformed business profession has reinvented itself to become a new capitalistic profession, with an eye on exploiting the markets rather than training students to uphold a code of ethics for the profession.

After World War II, the business sector was influenced by the pressure of implementing the principles of professionalism in the midst of the proliferation of college graduates and professions (Brint, 1996). College graduates acquired knowledge and expertise in the different careers and were compensated in the market place due to the growth of business enterprises. This economic shift placed more value on “expert knowledge” and indirectly reduced emphasis on the social-trustee facets of

professionalism (Brint, 1996). Yet, professional organizations were supposed to thwart the trend that degraded the quality of professionals.

Professional organizations formed a code of ethics that all participants were expected to follow and respect. Krause (1999) argued that professional organizations were losing control over their professionals and that control shifted largely to the state and the capitalists. This theory assisted the explanation of the strong connection between business schools and business organizations, which influenced business schools' educational strategies. The direction of the market has proven itself to be a strong influence on business schools, which acquiesced to any demand or requisite from the market (Swanson, 2004). Since business organizations have not placed any stipulations on business schools to train business students as professionals in a manner consistent with other fields such as law and medicine, business schools have not modified their curriculum to include training requirements – such as ethics training—corresponding to the remainder of the professional world (Bennis & O'Toole, 2005; Khurana, 2007). The promise that business schools would train managers into a culture of professionalism dissipated in the face of competing claims for corporate control and the business managers that help accomplish it (Khurana, 2007).

However, the original intent of university education promised more than the teaching of expertise (Khurana, 2007; Swanson & Fisher, 2008). In theory, the university should have emphasized all elements that supported the development of a professional: “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social-agency”(Arthur, 1995; Brint, 1996; Khurana, 2007). The theoretical framework outlined

the use of professional theory and models for understanding the business profession. The following sections outline the conceptual basis for this study.

Conceptual Basis of Study

The conceptual basis for this study included the components of professionalism identified in prior research in professions such as medicine, law, accounting, nursing, and management (Cowin, 2001; Hall, 1968; Haywood-Farmer & Stuart, 1990; Imse, 1962). The graphic models for these studies, including this one, are presented below (see *Figure 2*, *Figure 3*, and *Figure 4* for additional information). The following are definition of each element of the professional framework used in this study.

Autonomy of judgment. As defined previously the “autonomy of judgment” is the practice of independent judgment guided by special knowledge (Moore & Rosenblum, 1970). It is the professional’s ability to make decisions without the influence of external members to the profession, based on the expertise and the rules and regulations of the profession. Since this study measures the precursor of “autonomy of judgment” in undergraduate education, I selected indicators that elicited responses about critical thinking, analytical and problem solving, development of general expertise, expertise in the discipline, and readiness for employment as proxies for this precursor. Undergraduate college education seeks to develop students’ ability to have independent judgment by teaching critical thinking skills and problem-solving skills, and by developing their general knowledge and special expertise in their chosen discipline (McNeel, 1994; Pascarella & Terenzini, 1991). These indicators are representative of the

“autonomy of judgment” element of professionalism, as described in the literature (Freidson, 1985; Moore & Rosenblum, 1970).

Desire for expertise. As defined previously “expertise” is an important component of professionalism, since it provides professionals with the foundational knowledge that justifies the reason for the profession (Brint, 1996; Freidson, 1984). Professional expertise is the core of professionals’ economic assets and distinguishes them from other social classes (MacDonald & Ritzer, 1988). Since this study measures the precursor of expertise, the term “desire for expertise” will be used to describe this category. This concept will use indicators such as students’ motivation to become experts in their field of study. Undergraduate education allows students to develop expertise in different disciplines that tie to their desired profession. The indicators used in this study are representative of descriptions of the “expertise” factor in the literature (MacDonald & Ritzer, 1988).

Self-concept. As defined previously “self-concept” is a key measure for professionalism, and it is a latent attribute that professionals build as they develop expertise in their profession (Arthur, 1995; Cowin, 2001). Indicators such as self-esteem, knowledge, leadership, and communication measure this attribute. The special knowledge that professionals attain provides them with a feeling of superiority over others (Haywood-Farmer & Stuart, 1990). This allows professionals to derive a higher intellectual and social self-concept than others (Freidson, 1985; MacDonald & Ritzer, 1988). Undergraduate education allows students to develop expertise in different disciplines that ties them to their desired profession; this increases their self-concept.

Social agency. Finally, as defined previously, “social agency” is the ideological and ethical component that professionals are expected to portray. Friedson (2001) defines this component as “claim a devotion to a transcendent value which infuses its specialization with a larger and putatively higher goal which may reach beyond that of those they are supposed to serve” (Freidson, 2001). In this study, the “social agency” elements focused on whether students perceived social issues and their contribution to these societal issues as an important goal. The term describes students’ allegiance to societal issues within the realm of their chosen profession (Brint, 1996; Morrill, 1980). Undergraduate business education is expected to develop students’ sense of societal duty, if it fulfills its original promise when it was integrated with other disciplines at the university level (Khurana, 2007; Kohlberg, 1975). The indicators within the “social-agency” construct are used as proxies to measure students’ call of duty to society.

The models that follow show the components used in other professionalism studies as well as the ones used in the present study. The first model is based on the Hall study, conducted in 1968 (*Figure 2*). The second model is based on the Haywood-Farmer and Stuart Study, conducted in 1990 (see *Figure 3*), and the third model is the conceptual professionalism model used in this study (see *Figure 4*)

While it is clear that we need to know more about business students and their training, the previous literature review noted the influencing factors on the business discipline and on the profession. In the next section I discuss the methodology selected for this study.

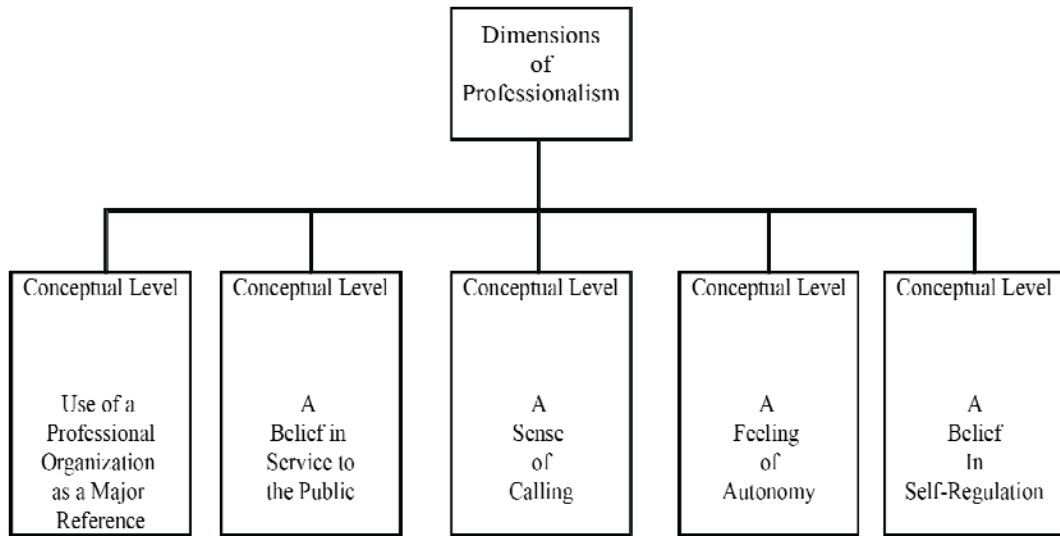


Figure 2. Professionalism Model (Hall Model, 1968).

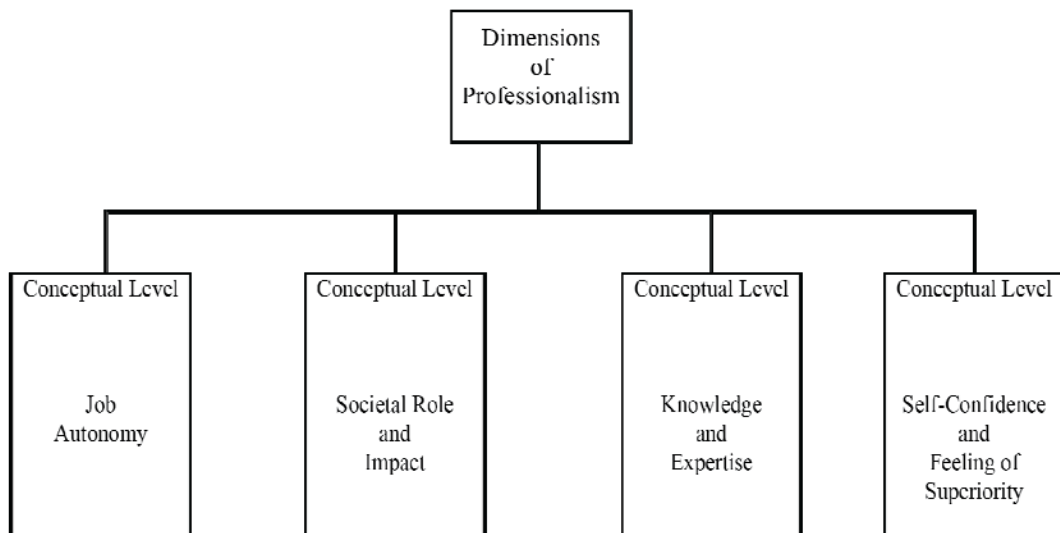


Figure 3. Professionalism Model (Haywood-Farmer and Stuart Model, 1990).

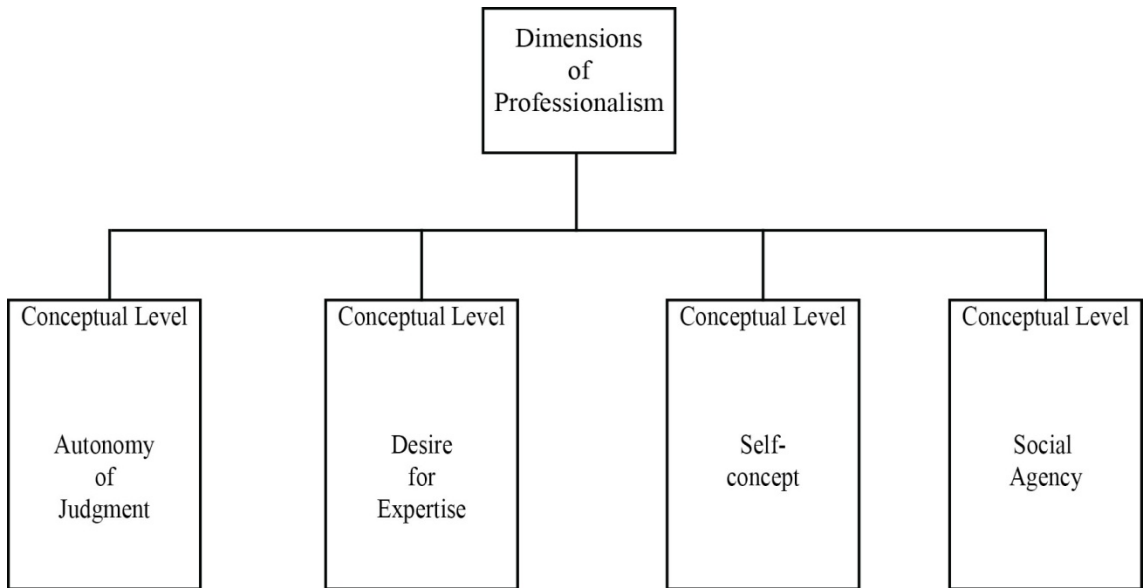


Figure 4. Professionalism Model in this Study.

CHAPTER 3: METHODOLOGY

I used Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) statistical methods to test the multidimensional nature of professionalism. The two techniques model latent variables using multiple indicators of the underlying construct. The EFA and CFA explore the measurement of several aspects of the underlying construct of professionalism: “autonomy of judgment,” “desire for expertise,” “self-concept” and “social agency” factors presented in this study.

In this chapter, I first begin with a discussion of the secondary datasets used in this study, the sample selected for the analysis, and the time period selected. Second, I describe the process of variable selection, and how the literature supports the choices in this study. Third, I outline the data preparation process including the initial screening of any violation of assumptions of multivariate normality. Fourth, I explain how I analyzed missing data and the treatment of missing data. Fifth, I identify the latent constructs and their respective support in the literature. Finally, I discuss the testing of the models using EFA, CFA the estimation process, and the testing for group differences. To lay out my research methodology, I examined EFA and CFA dissertations to help guide my work (BaileyShea, 2009; McCaffrey, 2011; O’Malley, 2011; Rotermund, 2010). The referenced dissertations studied latent constructs and used similar methodology to my study.

Selection of Secondary Datasets

The College Senior Survey (CSS) dataset was selected for this study. The CSS is administered annually by The Cooperative Institutional Research Program (CIRP) at the

Higher Education Research Institute at the University of California, Los Angeles (HERI). The survey is used to collect data from a nationally representative sample of over 100 baccalaureate colleges and universities, and it is typically administered to college seniors as an “exit” survey. Traditionally, colleges use CSS data to evaluate students’ satisfaction, collect information on students’ involvement, measure retention, understand students’ values, attitudes, and goals, assess post-college plans and aspirations, and study specific campus issues (HERI, 2012).

I selected data from the 2006-2007 and 2007-2008 academic years for use in this study. HERI surveys seniors in college who may or may not be graduating in the year of the study. These students finished most of their educational requirements and were most likely to be in the process of considering employment or graduate schools. This assumption is based on the nature of the transition from college completion to graduate study and/or entrance into the labor market. In each case, the standards that society applies to judge acceptable behaviors increase. For example, graduate students and professionals are expected to meet commitments on time, be prepared, and be dressed appropriately.

The demographics in the datasets varied from year to year, depending on the colleges that participated. In the 2006-2007 CSS dataset, there are data from 108 baccalaureate-granting colleges and/or universities, and of the 108 schools, 91% were private institutions. Of the 28,728 graduating seniors who elected to participate in the survey, 61% were female (Table 1).

Table 1.

Participation in the 2006-2007 CSS by Institutional Type and Selected Sample

	Entire Dataset Males	Entire Dataset Females	Male Sample	Female Sample	Total	No. of Colleges	Percent of Total
Public Colleges and Universities							
Public Universities (with graduate programs)	879	1630	879	1630	2509	5	
Public 4yr Colleges	460	1134	460	1134	1594	5	
Percent of Public Institutions of Total							0.20
Private Colleges and Universities							
Nonsectarian 4yr Colleges	3196	4887	3196	4887	8083	30	
Private Universities	3051	3659	3051	3659	6710	9	
Catholic 4yr Colleges	1889	3768					
Other Religious 4yr Colleges and HBCU	1569	2504					
Private 2yr Colleges	30	72					
Percent of Private Institutions of Total							0.80
Total	11074	17654	7586	11310	18896	49	
Percent			40%	60%	100%		100%

Source: HERI 2006-2007 CSS dataset used in this study

In the 2007-2008 dataset, 145 baccalaureate institutions elected to participate. Ninety-two percent of these institutions were private. Of the 23,423 graduating seniors, who elected to participate in the survey, 65% were female (Table 2).

The CSS survey instrument included more than 200 items related to *outcomes*, such as academic achievement, retention, satisfaction, and self-assessment; *environments* which include activities students engage in during college; *changes during college* such as changes in students' attitudes toward societal issues; and *future plans*. HERI did not know what students within each institution participated in the study prior to collecting the data. Institutions distributed surveys to graduating seniors via mail, e-mail, or exit interviews. To increase the response rate, many institutions administered a second wave of surveys. Once the institution collected as many surveys as it expected to receive within a selected period of time, the completed surveys were sent to HERI for processing.

After all the data were collected, HERI used modern statistical methods to compile data (HERI, 2012). HERI studied underlying latent traits, such as student satisfaction and student-faculty interaction, by combining individual survey items into measures. HERI used exploratory factor analysis (EFA) and Item Response Theory (IRT) in their analysis and summarization of data. Factor analysis is a method that can reveal patterns of interrelations among variables (1980). IRT is a method employed by researchers to construct measures of latent traits because these traits are unobservable (Hambleton & Swaminathan, 1989). HERI used the individual survey item responses and grouped them into constructs. These constructs were groups of individual items that together measured one trait or aspect of a student's life. Therefore, the latent traits

extracted using IRT provided a more reliable measure for comparisons of latent variables related to the students.

Survey items in the CSS did not ask students directly about the latent construct of interest, such as “student-faculty interaction.” The CSS survey did not ask students whether they had interactions with faculty members, but rather asked them to rate on a scale of 1 to 4 the following item “communicated regularly with professors.” Thus, the data collected from students allowed HERI to infer the quality of the student-faculty interaction from the responses. HERI constructed the survey items in such a way that students responded to statements by selecting a response from an ordered list, such as a Likert scale. This methodological design allowed the CSS data to support inferences about the quality of students-faculty interactions from the responses to items such as “occasionally asked professors for advice” or “communicated regularly with professors.” The survey tool was designed this way to obtain more information about the latent trait using the underlying questions, rather than to inquire about the latent trait directly (Hambleton & Swaminathan, 1989).

The CSS dataset contained data on a wide range of constructs associated with students’ behaviors, attitudes; values, self-assessment, and ambitions post college. There were multiple constructs developed from the CSS data: academic engagement, student-faculty interaction, satisfaction with coursework, satisfaction overall, positive cross-racial interaction, negative cross-racial interaction, sense of belonging, social-trustee, social self-concept, and civic awareness. Few of these constructs and their underlying indicators related well theoretically to students’ professional attitudes and values.

However, the CSS data were viewed as an appropriate selection for this research because different combinations of survey items could be used to measure the constructs of interest.

Sample Included in the Study. The sample selected excluded students who attended religious and two-year or community colleges ($n = 9,832$ in 2006-2007 and $n = 13,321$ in 2007-2008) from the analysis based on previous research that identified a relationship between religious institutions and ethical values of students (Delaney, 2006; Knotts et al., 2000). The sample contained a high percentage of private institutions (80%). These studies found a high correlation between religions and measured moral scores of students. The remaining sample in the 2006-2007 dataset, after removing observations of students who attended religious private schools, had 18,896 respondents, of which 60% were females, and 80% of the institutions participating were private (Table 1). The remaining sample in the 2007-2008 dataset had 12,996 respondents, of which 62% were females, and 81% of the institutions participating were private (Table 2).

Table 2.

Participation in the 2007-2008 CSS by Institutional Type and Selected Sample

	Entire Dataset		Entire Dataset		Male Sample	Female Sample	Total	No. of Colleges	Percent of Total
	Males	Females	Males	Females					
Public Colleges and Universities									
Public Universities (includes graduate)	1045	1688	1045	1688	2733		6		
Public 4yr Colleges	373	927	373	927	1300		5		0.19
Percent of Public Institutions of Total									
Private Colleges and Universities									
Nonsectarian 4yr Colleges	2310	3732	2310	3732	6042		40		
Private Universities	1178	1743	1178	1743	2921		8		
Catholic 4yr Colleges	1730	4036							
Other Religious 4yr Colleges and HBCUs	2525	4964							
Private 2yr Colleges	17	49							
Percent of Private Institutions of Total									0.81
Total	9178	17139	4906	8090	12996		59		
Percent			38%	62%	100%				100%

Source: HERI 2007-2008 CSS dataset used in this study

Time period. I examined data from the 2006-2007 and 2007-2008 academic years; these years were representative of CSS data collected in other years since few items in the CSS survey (2006-2007) changed and few institutions were added or deleted annually (HERI, 2012). The data from the academic year ending in 2007 were used to conduct an EFA, and data from the following academic year ending in 2008 were used to conduct a CFA, based on the results of the EFA. HERI allowed researchers access to datasets three years after the initial data collection; therefore, the academic year 2007-2008 included the most recent data available for this study. The datasets included all variables of interest. Two academic years offered a sufficient period of time for the analysis and comparability of the results, since the objective of the study was not to generate a trend analysis of students' attitudes, but rather to test a hypothesis using a large sample of students for a one-year period.

Selection of Variables

I used 20 variables to perform my analysis of the selected datasets. The variables selected for this study are listed in Table 3. These variables were selected from the CSS Codebook for 2006-2007 and 2007-2008. The method of variable selection was based on matching theoretical frameworks on professionalism with the questions that were included in the dataset. As stated previously, the main theoretical concepts of professionalism selected for this study were as follows: "autonomy of judgment," "desire for expertise," "self-concept," and "social agency." I reviewed all of the questions in the dataset and selected variables that appear to be good proxies for testing the professionalism constructs. All of these variables had a theoretical connection to the

dimensions of professionalism identified in the prior literature. In addition, the variables selected for the “social-trustee” dimension were matched to the variables used by HERI to create their social agency construct.

Finally, variables were only selected if they were considered appropriate for “factor” testing by meeting the following criteria: variables were either continuous or categorical (ordinal); variables were rated on a Likert- scale of at least 1 to 4 (minimum); and the indicators tested were a good theoretical match (Meyers, Gamst, & Guarino, 2006).

Twenty variables were selected from the base-year survey 2006-2007 and then from the second year 2007-2008. I used only the variables that were represented in the two years of the study in order to make comparisons. These variables measured students’ professional attitudes and values. All were Likert-type scale items with four to five response categories. Information about each of the items – including the variable name, description of item, the original scale, and whether any items required reverse coding – used in the analysis in this study can be found in Table 3.

Once the variables were selected from the CSS survey, I computed descriptive statistics to examine the distribution of responses and to assess whether the relationship between the variables was reflective of the theoretical associations; thus, variables that were associated with one another returned a high correlation (e.g. .40 to .70) and variables that were not associated with one another displayed low correlation (e.g. .06 to .29). Correlation results are displayed in Table 9. The variables were checked for violations of linearity, normality, and homogeneity.

I checked the wording of each of the items and the response choice and noted that all scales went from negative to positive in terms of characteristics associated with student professionalism. For example, all items were based on students' responses that corresponded with the lowest to the highest value of the professionalism scale. The most common items were those with response choices based on a continuum that ranged from "Much weaker" to "Much stronger," "Lowest 10 percent" to "Highest 10 percent," or from "Not important" to "Essential."

Table 3.

Measured Variables Used in This Study

Factor	Variables	Description	Scale ^a	Reversed
Autonomy of Judgment	SLFCHG04	Change: Ability to think critically	1-5 ¹	No
	SLFCHG08	Change: Analytical and problem-solving skills	1-5 ³	No
	SLFCHG17	Change: General knowledge	1-5 ³	No
	SLFCHG19	Change: Knowledge of a particular field or discipline	1-5 ³	No
	SLFCHG25	Change: Preparedness for employment after college	1-5 ³	No
Desire for Expertise	GOAL04	Goal: Become an authority in my field	1-4 ³	No
	GOAL10	Goal: Having administrative responsibility for the work of others	1-4 ³	No
	GOAL20	Goal: Obtain recognition from colleagues for contributing to my special field	1-4 ³	No
Self-Concept	RATE12	Self-Rating: Leadership ability	1-5 ²	No
	RATE18	Self-Rating: Public speaking ability	1-5 ²	No
	RATE22	Self-Rating: Self-confidence (intellectual)	1-5 ²	No
	RATE23	Self-Rating: Self-confidence (social)	1-5 ²	No
	RATE24	Self-Rating: Self-understanding	1-5 ²	No
	GOAL02	Goal: Becoming a community leader	1-4 ³	No
	GOAL11	Goal: Helping others in difficulty	1-4 ³	No
	GOAL12	Goal: Helping to promote racial understanding	1-4 ³	No
	GOAL15	Goal: Influencing social values	1-4 ³	No
	GOAL18	Goal: Keeping up to date with political affairs	1-4 ³	No
	GOAL21	Goal: Participating in a community action program	1-4 ³	No

a. 1 = Much weaker, 2 = weaker, 3 = No Change, 4 = Stronger, 5 = Much Stronger

b. 1 = Not Important, 2 = Somewhat Important, 3 = Very Important, 4 = Essential

c. 1 = Lowest 10%, 2 = Below Average, 3 = Average, 4 = Above Average, 5 = Highest 10%

Data Screening for Violations of Assumptions

The next step in this study after the selection of the sample and the variables was to screen the data to ensure that they met the assumptions for the EFA and CFA estimation methods. The first assumption that was tested was the univariate and multivariate normal distribution of observed variables. I generated descriptive statistics for each variable, including estimates of mean, standard deviation, frequencies, and histograms for each variable. Visual inspection of histogram showed that 15 out of the 20 variables used in the study had approximately normal distribution, with no significant outliers or skewness, and kurtosis values were within acceptable limits. The other five variables SLFCH08, SLFCHG04, SLFCHG17, SLFCHG19, and SLFCHG25 were highly skewed with high kurtosis values at considerably higher values than the acceptable cutoff values of 3.0. I chose to retain these variables in the study and do further checking on their multivariate normality. I generated histograms of the four factors used in this study and found that three of the four factors, “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency,” met the normality assumption, but the first factor, “autonomy of judgment,” was not normally distributed. Although this factor was not normally distributed, it was less skewed than the individual variables underlying it. The reason that these variables were skewed is that students tend to answer the questions related to change in their abilities during their undergraduate years as “stronger” or “much stronger,” rating themselves at four or five on a 1-5 scale. Students may overrate the change that occurs in their abilities during their undergraduate education.

I used Mplus 6.11 software to perform my EFA and CFA. Robust estimation methods that deal with violations of multivariate non-normality were available and selected. This lessens the critical nature of addressing these issues. Because the variables used in this study were categorical, I used the Weighted Least Square parameter estimates with mean- and variance-adjusted chi-square test statistics for the EFA and CFA. The estimator WLSMV provides appropriate parameter estimates for models based on categorical and moderately skewed data (Muthen & Asparouhov, 2002).

Testing for the assumption of independence, the CSS dataset meets the test of independence since students surveyed were from different schools that are geographically dispersed. In addition, the students surveyed did not complete the questionnaire under a similar classroom setting within these institutions. Students participating in the CSS were not surveyed in the classroom; instead, they each responded individually as part of the exit or graduation process at their college, thus reducing the risk of violating the assumption of independence. However, institutional-type differences such as liberal arts colleges as compared to public institutions may influence the independence assumption. Testing the independence assumption of CSS data using “structural nested models” can be followed up on in a later study.

Missing Data

A blank or a zero value may not always represent missing data, and therefore missing data patterns may need to be analyzed further. I analyzed the data based on the survey items and the variables in question to determine the percentages of missing data. This provided information on unusual numbers of missing items in the data. Initial

analysis of the two datasets (2006-2007, 2007-2008) did not show an unusual percentage of missing data, accounting for less than 3.5% in all of the used variables in the study.

To assess missing data, a recommended approach is to identify with two broad categories according to Allison (2001): 1) Data that were thought to be missing completely at random (MCAR); and 2) data that were seen to be missing at random (MAR). If missing data generate a consistent pattern across subgroups, then that pattern is significant evidence that data are not missing completely at random, and values are not randomly distributed in the dataset. Based on my analysis of data using SPSS “Little’s MCAR test,” I found that data were not missing completely at random, therefore data were MAR. Allison (2001) suggests that for latent variable analysis, the Direct Maximum Likelihood Method (ML) is the preferred method for addressing missing data. Research suggests that the ML method generates more accurate test statistics, confidence intervals, and unbiased parameter estimates than other missing values replacement methods. Additionally several studies using CSS dataset used the ML method in their studies, one example of these studies is done by Hurtado, Cuellar, and Guillermo-Wann (2011). Therefore, I used ML in SPSS to replace missing values, grouping variables for each of the four factors to perform the estimation, since variables within each factor are correlated and can be better estimators for missing values than using all the variables in the dataset. I ran ML procedure until I had a complete dataset with new estimated values for missing data.

Latent Constructs

The variables in this study were selected based on the use of latent factor analysis. Two types of latent factor analysis were used: Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). This type of analysis is based on the use of latent construct, which captures characteristics of a population that are not directly observable. These variables form clusters that explain the underlying latent construct.

A review of the literature guided the initial choice of the variables selected for the study (Bentler, 1980). In addition to the selection of the variables, the identification of the number of the factors was also guided by the literature (Bentler, 1980). After a general description of theoretical background for the main construct in this study, I provided substantive justification for the number of latent factors that I expected to find from the EFA, based on my review of the literature. The hypothesized model included four factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.”

In the following section, I describe each of the latent constructs tested in the EFA, and I explain the theory that guided my research in the selection of variables and identified factors. In *Figure 5*, the four latent factors and the underlying manifest variables are listed. I also previously listed the explanations for each of manifest variables in Table 3.

Autonomy of judgment. The item choices for the “autonomy of judgment” factor were based on research suggesting that autonomy is an important factor in rating professionalism among candidates. Professional autonomy was defined as the practice of

independent judgment guided by special knowledge (Moore & Rosenblum, 1970). The items chosen within this factor—change in analytical and problem solving, change in ability to think critically, change in general knowledge, change in knowledge of a particular field or discipline, change in preparedness for employment after college—are representative of descriptions of the “autonomy of judgment” factor in the literature (Freidson, 1985).

Desire for expertise. The item choices for the “desire for expertise” factor were based on research suggesting that expertise is an important factor in rating professionalism among candidates. Professional expertise is the core of professionals’ economic assets that distinguishes them from other social classes (MacDonald & Ritzer, 1988). The items chosen within this factor—including the goal to become an authority in one’s field, obtain recognition from colleagues for contributing to one’s special field, and to take on administrative responsibility for the work of others—are representative of descriptions of the expertise factor in the literature (MacDonald & Ritzer, 1988).

Self-concept. The item choices for the “self-concept” factor were based on research suggesting that professionals, based on their possession of expertise, will derive a higher intellectual and social self-concept than others (Freidson, 1985; MacDonald & Ritzer, 1988). Haywood-Farmer and Stuart (1990) identified “feeling of superiority” as one of the factors of professionalism in their study. The items chosen within this study—including self-confidence social, leadership ability, self-confidence intellectual, self-understanding, public speaking ability, and understanding of others—are representative of definitions of professionalism from the literature.

Social agency. In this study, “social agency” focused on whether students perceived social issues and their contribution to these societal issues as an important goal. HERI uses the term “social agency” as a construct that describes students’ allegiance to societal issues. In this study, the items within the “social agency” construct are used as proxies to measure students’ call of duty to society. The items chosen to represent “social-trustee” measures—including the goal of becoming a community leader, participating in a community action program, influencing social values, helping to promote racial understanding, keeping up-to-date with political affairs, and helping others in difficulty—are representative of “social-trustee” attributes among professionals described in the literature (Freidson, 1985; Moore & Rosenblum, 1970).

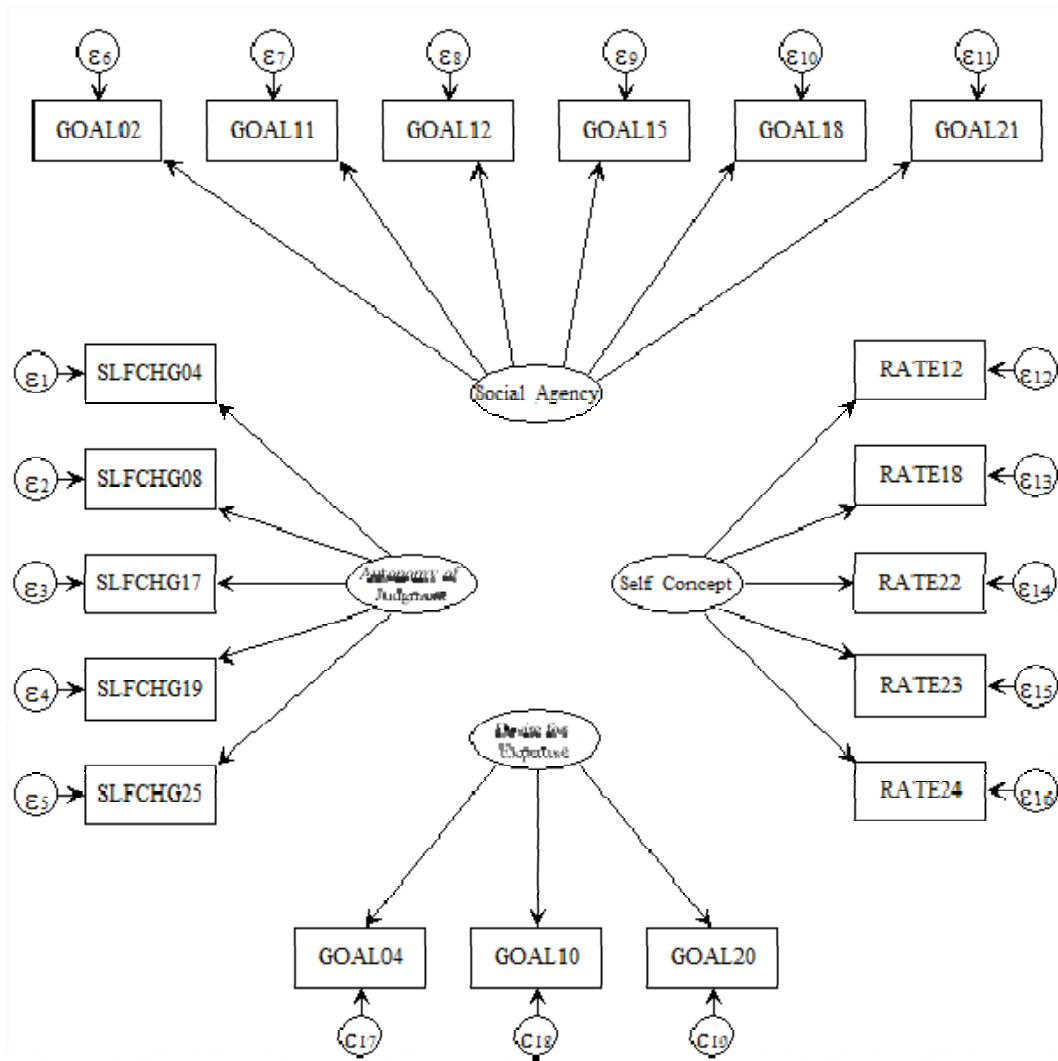


Figure 5. Relationships Between Manifest Variables and Latent Constructs.

Data Analysis

To conduct the EFA and the CFA, I used two separate datasets, one selected from 2006-2007 CSS data to conduct the EFA, and the 2007-2008 CSS data to conduct the CFA. It is recommended that the researcher split the data selected into two separate datasets, since this strategy protects against the possibility that the factors that emerge from the EFA are the product of idiosyncratic aspects of the particular dataset under

analysis rather than a set of factors that hold across a variety of samples (Bollen, 1989). This verifies that the factors identified are representatives of the population being studied and are not produced just by chance.

For this project, the EFA and CFA datasets contained 18,896 cases for 2006-2007 and 12,996 for 2007-2008. Table 9 shows descriptive statistics for variables used in the EFA and the CFA. I used SPSS for initial descriptive analysis, normality testing, missing value analysis, and replacements, and then used Mplus 6.11 to estimate the EFA and CFA models. Subsequent to the estimation, I used SPSS to save the factor-scores resulting from the EFA, which I later utilized for comparison between undergraduate majors in the dataset. In the estimate of the EFA and the CFA, I used WLSMV estimator in Mplus to account for the categorical nature of the dichotomous outcome variable. The most common estimation method in Mplus is Maximum Likelihood (ML), but this estimator is inappropriate for categorical variables, which are primarily used in this study. The ML estimator, if used with categorical variables, can yield inconsistent estimates and biased standard errors (Brown, 2006); however, the WLSMV estimator produces consistent parameter estimates and unbiased standard errors when there are categorical endogenous variables (Muthen & Satorra, 1995).

In the following sections, I discuss my steps in the analysis of the EFA, CFA, and group comparisons using factor-scores. In addition, I discuss overall model fit, the strength of factor loadings, path coefficients, and variable residuals to reveal localized areas of strain. It is important that the researcher not rely on goodness of fit statistics only since fit indices do not provide a guarantee that the model is useful. It is important

to consider theoretical and practical consideration that support statistical goodness of fit results (Brown, 2006; Hu & Bentler, 1999). Therefore I discuss the fit indices and the choices that I made in evaluating my models. I also provide cutoff values for indicating good fit and explain why I considered my models to be good fit.

Data analysis process using EFA. The EFA is often the starting point in performing an analysis for the latent factor. The EFA seeks to determine the latent construct behind a set of measured variables. The initial determination is considered exploratory since the number and nature of the latent factor derived are driven by data and not by *a priori* theory (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In the process of the EFA, the researcher does not specify the exact number of latent factors, or the specific relationship between the measured variables and the latent factors. The results of the EFA provide an estimate of the number of common factors. The EFA also reveals the measured variables that can be considered adequate indicators of each latent construct. Each indicator is evaluated by its associate factor loading. The factor loading is a standardized estimate of the regression slope that explains the relationship between the factor and the indicator. By squaring each factor loading, the researcher determines the amount of variance that is accounted for by the latent construct. In addition, the common factor or communality is the common variance of all indicators that is explained by the latent factor. The unexplained part for each indicator is referred to as the unique variance.

As explained in the prior chapter, I chose several variables that I hypothesized would load on four latent factors. In the first round of analysis, I estimated my data with

three-to-five factor models. After running the models in Mplus, I used the fit statistics and the theoretical background to decide which EFA model best fit the data. After the initial screening of the EFA model, I examined the factor loading for each variable. I selected factor loadings above 0.30 to justify keeping the variable in the model. I also examined the output for any variables that load on more than one factor, which is a condition called cross-loading in the literature (Fabrigar et al., 1999). This condition violates the principle of common factor model that suggests that each variable should load on only one latent variable. Cross-loading variables make it difficult to distinguish the unique relationship between manifest variables and their respective factors, thus they should generally be dropped from the model. After I removed variables that did not meet the prior criteria, I checked the fit statistics (the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker and Lewis Index (TLI), and the standardized root mean square residual (SRMR) to ensure that I reached an optimal model.

I also followed this process in SPSS to create the factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency;” I conducted an EFA on the 2006-2007 responses. The purpose of the EFA was to determine the linear components within the dataset, which were referred to as the eigenvectors. To determine the importance of a particular vector, I assessed the magnitude of the associate eigenvalue. The Kaiser-Guttman rule suggests that the number of latent factors should be based on how many eigenvalues derived from the input correlation matrix test are greater than one (Fabrigar et al., 1999). These guidelines cannot be used exclusively, since often

they can result in choosing too many or too few indicators in an arbitrary way.

Therefore, another test that I used to determine the best factor model solution was the scree-plot test, which is a plot based on the eigenvalues. A scree-plot graphically shows where the line representing the factors begins to level off. Factors that showed up on the flat part of the plot I considered redundant and unnecessary to include in the model.

The eigenvalues associated with each factor represented the percentage of variance explained by that linear component (Joreskog & Sorbom, 1996; Raykov & Marcoulides, 2008). Eigenvalues greater than one were selected, thus only important factors emerged from the study. After the factor scales were extracted, I analyzed the output to determine the best rotation method for the solution provided. Oblique rotation of the results is used to make the results more interpretable, and it assumes that the measured variables are correlated. Rotation methods allow for factor axes to maximize the loading of variables to a single factor. This technique helps me discriminate further between factors (Joreskog & Sorbom, 1996; Raykov & Marcoulides, 2008).

I also selected variables that had satisfactory loadings on each of the components in order to perform reliability testing for each of the factors. Reliability testing checks for statistical internal consistency, which is an indication that the factors and the variables chosen will always produce similar results using another sample or dataset (Joreskog & Sorbom, 1996; Raykov & Marcoulides, 2008). Reliability can be achieved if administering the same survey or instrument results in consistent observations of scores.

Once I selected the factors based on the prior steps, I performed the following steps to ensure that I have selected the correct model: (1) considered the interpretability

of the factors and how they are substantiated by theory, (2) eliminated poorly defined factors that had only one or two items that had satisfactory loadings, (3) examined the fit statistics as previously described, and (4) used the final EFA model as a basis for performing the CFA.

Data analysis process using CFA. The EFA provided information on the factor structure underlying the set of observed variables (Joreskog & Sorbom, 1996; Raykov & Marcoulides, 2008) without the need for *a priori* theory, hence the naming of EFA. The CFA is also based on identifying common factors similar to EFA, but a CFA is largely driven by theory and prior research. A CFA varies from an EFA in that in a CFA one may impose restrictions on factor loading and covariances to be consistent with the available knowledge that represents the hypothesis of interest in the study (Raykov & Marcoulides, 2008). This method is a statistical technique that allows the researcher to test hypotheses that a relationship between observed variables and their underlying latent construct exists (Bentler, 1980; Raykov & Marcoulides, 2008). The researcher specifies which variables load on each factor and assumes that the other loadings are set to zero.

A CFA also provides a more parsimonious solution as compared to EFA, given that the researcher specifies the number of factors and the pattern of factor loadings in advance. After extracting the factors from the EFA, I conducted a confirmatory factor analysis (CFA) on the second year of data. I relied on previous theory and research to decide how many factors exist and which variables correspond to which factors. In deriving the measurement model, I used the results from the EFA analysis above and also

referred to prior professionalism models that utilized similar factors. My proposed model included four factors representing the latent construct of professionalism.

In the next steps, I tested the strength of the CFA model by exploring the overall fit of the model under examination, as well as the factor loadings. Additionally, I reviewed the R^2 values to check how much of the variance in each indicator was explained by the latent factor (Brown, 2006; Hu & Bentler, 1999). I performed these steps to check the overall model, and then I proceeded to check for areas of localized strain by reviewing the standardized residuals for all indicators. The residual matrix provides specific information for each variance and covariance that is reproduced by the model's parameter estimates (Brown, 2006). The standardized residuals are similar to standard scores in a sampling distribution, thus they can be interpreted as z scores (Brown, 2006; Raykov & Marcoulides, 2008). I then reviewed the modification indices in order to do last steps fine-tuning of the model. Modification indices reflect an approximation of how much the overall model chi-square would decrease if the fixed or constrained parameter were freely estimated. I checked all these areas and made final adjustments to finalize the CFA model.

Model fit indices. I selected the following indices to report in my model: RMSEA, CFI, TLI, and the SRMR. Fit indices require the researcher to create a variance-covariance matrix that fits the data in the study. In latent factor analysis, a perfect-fitting variance-covariance matrix is created based on the data examined, attempting to be as close to the observed matrix in the data as possible. Generally, fit statistics include three types of indices: one that tests for absolute fit, the second type of

index adjusts for model parsimony, and the third index tests for incremental fit. In this discussion, I emphasize the absolute fit and incremental fit indices. Indices for parsimony are less clearly defined in the literature and therefore will not be discussed in this study (Brown, 2006; Byrne, 2011).

Examples of absolute fit indices are the chi-square and RMSEA. Initial testing of the model was performed with the chi-square test. This test represents the discrepancy between the unrestricted sample covariance matrix S and the restricted sample covariance matrix Σ . Chi-square tends to be problematical, however, since the test is based on sample size and large samples give larger values of chi-square, even when the degrees of freedom in the model remain the same. Since this study uses a large secondary data set, fit statistics other than the chi-square were used to evaluate the goodness of fit of the model more appropriately. The RMSEA is a widely used index that takes into account general complexities of the model, since it takes into account the error of approximation in the population. For example, the index reflects how well the selected model parameters values fit the hypothesized population's covariance matrix. The discrepancy is expressed based on degrees of freedom in the model; therefore, the index is sensitive to the number of estimated parameters in the model. Brown (2006) and Raykov and Marcoulides (2008) suggest that values less than .05 indicate good fit, but values between .05 and .08 represent reasonable errors of approximation in the population. Other scholars suggest that a model with a value less than .06 to be indicative of a good fit between the hypothesized model and the observed data (Hu & Bentler, 1999; Raykov & Marcoulides, 2008).

The RMSEA provides another aspect of fit statistics, which are the confidence intervals (CI) for the RMSEA VALUE. The confidence interval is the lower and upper bounds of RMSEA values. It is useful to examine these values because a large confidence interval is associated with large sample size and the number of freely-estimated parameters. A confidence interval of 90% is typically used (Brown, 2006; Byrne, 2011).

Besides the fit indices, magnitude of the factor loadings for each measured variable on its associated latent factor should be considered. Standardized pattern coefficients should have a value above .4 in order to be considered adequate. The variance of each indicator is generated by squaring the value of the factor loading, R^2 , which explains how much the variance in the indicator is explained by the latent factor (Brown, 2006; Raykov & Marcoulides, 2008). This variance is often interpreted as the reliability of the indicator; thus, for example, the residual of an R^2 value of .4 is equal to 60% that is not explained by the latent factor.

The other index that is classified within the absolute fit category is the SRMR. This index measures the average discrepancy between the correlations in the observed and predicted data matrix. The SRMR usually takes a range of values between 0.0 and 1.0, with 0.0 indicating a perfect fit. The closer the SRMR value is to 0.0 the better fit of the model (Raykov & Marcoulides, 2008).

The second category of fit indices is the incremental fit indices such as the CFI and TLI. The CFI evaluates the fit of a user-specified model to a nested model that is more restrictive. The baseline model is generally referred to as the null hypothesis

model; in this model, all the covariances among the input indicators are set to zero. This means that there are no correlations between any of the measured variables and that they are completely independent. CFI values are generally derived by a comparison between the null hypothesis model and the hypothesized model. Values of the CFI generally range between 0.0 and 1.0, with a suggested cut-off of .95 for a well-fitting model.

The TLI is another incremental fit index that is often referred to as a non-normed index, since the resulting values may fall outside of the range 0.0 and 1.0 (Brown, 2006; Hu & Bentler, 1999). This index also compensates for the effect of model complexity. As with the CFI, values for this index are derived based on a comparison of the hypothesized model with baseline model, but also considering degrees of freedom. The values of the TLI generally range between 0.0 and 1.0 with a suggested cut-off of .95 for a well-fitting model (Brown, 2006; Byrne, 2011). The collective goodness of fit analysis, as reported in the study, considered all the previously discussed fit indices.

Testing Group Differences

Once the EFA and the CFA were completed, I created mean-factor scores for each of the four elements of professionalism, “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency,” and tested for significant differences between two groups: business and non-business students. Four separate ANCOVA models were carried out; one for each of the four factor scores. For all models, the independent variable was undergraduate major: business ($n = 2,227$) or non-business students ($n = 10,836$). I checked for normality for the independent variable and although there was negative skew in the sample, mostly in the “autonomy of judgment” factor scores, but

given the large sample size of the two groups, the comparison was still carried out (Tabachnik and Fidell, 2007).

For all models, I included two covariates: type of institution (private or public) and gender (male or female). The two covariates were selected based on prior research addressing elements that influenced undergraduate business students' responses to survey data (Browning, 2003; Carpenter, Harding, Finelli, & Passow, 2004; Knotts et al., 2000; Lan et al.).

Due to the risk of increased Type I error, I used the Bonferroni correction to allow for many comparison statements to be made while assuring that the confidence interval is maintained (Tabachnick & Fidell, 2007). This method is valid for equal and unequal sample sizes. The Levene test of homogeneity of variance indicated significant violations on all factors; however, when sample sizes are large ($n > 30$) and there are equal numbers of respondents in each cell, ANOVA is robust to violations of the equal variance assumption (Tabachnick & Fidell, 2007).

Due to substantial differences in sample size population between non-business majors and the lack of normality with these majors, no pairwise post-hoc comparisons were conducted between majors. In addition, the lack of random assignment of students to major raises additional issues about the use of this particular method for the purposes of this study. However, this methodology provides a much needed initial step to making tentative and general claims of the differences between business students and non-business students.

CHAPTER 4: RESULTS

This study explored business students' professional values upon completion of their undergraduate business degree in comparison to other undergraduate majors. Professional values is defined as a multi-dimensional construct comprised of four latent constructs: "autonomy of judgment," "desire for expertise," "self-concept" and "social agency." The mean factor-scores for these four constructs were compared for business undergraduate majors with other undergraduates.

Creating the latent constructs included a two-step procedure. First, an EFA model was fit to the 2006-2007 data to determine how many latent factors should be included in the model and to determine which variables were suitable indicators of the latent factors. Second, a CFA model was fit to the 2007-2008 data to confirm the findings from the EFA model that emerged from the data from the previous year (2006-2007). This process confirmed that the manifest variables were suitable measures of the underlying latent factors and provided adequate fit.

As noted in Chapter 3, the CFA establishes adequacy of fit of the measurement model. Therefore, when I ran the EFA, I intended to use two sets of data from different academic years in order to cross-validate the results of the EFA with a separate sample for the CFA, ensuring that the results of the EFA were valid and were not the result of chance. The CFA confirmed that results of the EFA were generalizable across different samples. My dataset for the EFA, after the replacement of missing values, consisted of students graduating in the 2006-2007 academic year ($n=19,141$) and students graduating in the 2007-2008 academic year for the CFA ($n=13,063$).

The datasets identified missing data with a specific value such as a period, which was used so that Mplus could recognize missing data and use appropriate estimation techniques to compute results from the full data set. However, I used SPSS to prepare my files and replace missing values prior to my use of Mplus for factor analysis. Therefore, there were no missing data in the Mplus data files.

Exploratory Factor Analysis: Hypothesis 1.1

In order to test that a model of the precursors of professionalism can be characterized with four latent factors (Hypothesis 1.1), I selected 20 variables based on my review of the literature for the EFA from the 2006-2007 CSS dataset. A description of these variables was provided in Chapter Three. I expected four latent factors to emerge from the EFA, consistent with the literature. These factors would map to the theoretical model presented in Chapter Two, consisting of the following factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.” I specified the number of factors in the first run of the EFA. I requested that Mplus provide 3-, 4- and 5-factor models in its analysis. Testing models with at least one factor less than the expected model, and one factor more than the expected model is good practice, according to Kline (2005). This process supports the researcher’s claim that the hypothesized solution is more plausible and provides a better fit for the data than solutions with a higher or lower number of factors, with more confidence.

Exploratory factor analysis with twenty variables. The EFA consists of two parts, the determination of the appropriate number of factors that should be used in the model for the overall fit and the examination of the factor loadings for each of the

measured variables in the model to determine which variables should be retained. To assess the fit of the model to the data, I examined the eigenvalues and scree plots generated from the analysis. This suggested that a model with up to five factors would be appropriate for the data. However, the eigenvalues from the four-factor model were 1.38 – above the cutoff of 1.00 – while the eigenvalues from the five-factor model were below the recommended cutoff, a value of .76.

Although scree plots are not exact indicators of the number of factors to include in a model and their results are open to subjective interpretation, they do give an initial indication of the number of factors that should be retained in the model. The results of this scree plot suggests an optimal number of factors would likely fall between four and five, since the slope of the curve began to flatten out after the five-factor model. The scree plot generated by Mplus is shown in Figure 6.

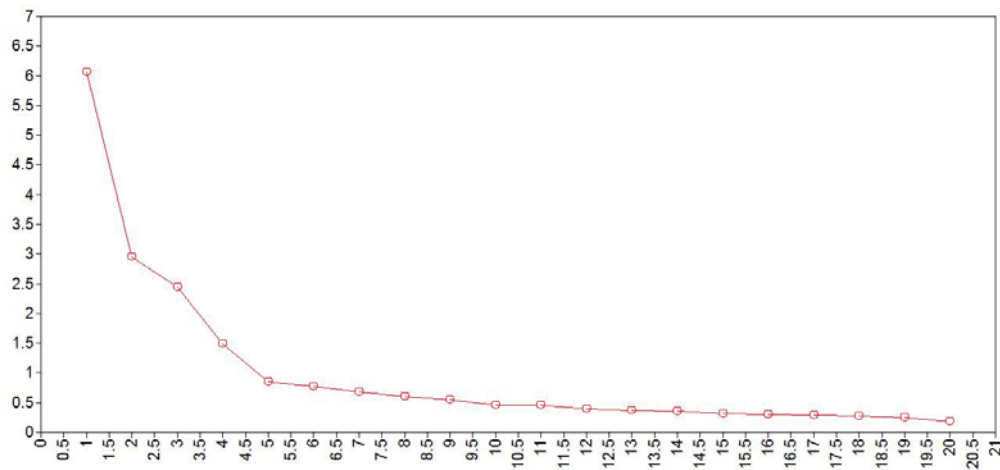


Figure 6. Scree Plot EFA Using 20 Variables.

Once I examined the eigenvalues and the scree plot for the different solutions, I turned to the fit statistics to compare how well the data fit for the four and five-factor models (see Table 4).

Table 4.

Model Fit Statistics for EFA Using 20 Variables

Model	χ^2	Df	CFI	RMSEA	C.I.	SRMR
3-factor	42444.914***	133	0.848	0.129	.128-.130	0.061
4-factor	11103.450***	116	0.960	0.070	.069-.071	0.028
5-factor	5548.384***	100	0.980	0.053	.052-.055	0.020

*Note: C.I. = Confidence Interval for RMSEA; *** $p < 0.001$*

The three-factor model did not exhibit an acceptable fit (RMSEA value above .08), and therefore it was rejected. The four-factor model exhibited a marginally acceptable fit and the five-factor model fit the data well. Although the chi-square values were significant, it is more likely a result of the model's oversensitivity as a function of the large sample size, thus significant *p-values* do not necessarily indicate a poor-fit of the model. The CFI values suggested that the two models (four-factor and five-factor) exhibit a good fit with values exceeding the cutoff values of .95. The RMSEA value for the four-factor model is acceptable with a value below .08. The RMSEA values for the five-factor model indicate a good fit with a value of .05, which is the cutoff level for a good model. The range of confidence intervals for each of the RMSEA values was small, indicating that the estimated RMSEA values were reliable. As well, the SPMR values were good for each model, with all values close to zero.

After assessing the overall fit of the models in the analysis, I reviewed the factor loadings of each of the variables. The overall fit statistics do not test the performance of individual observed variables. The criteria that are generally accepted for assessing the performance of the individual observed variables include the strength, or magnitude, of the loading of the variable, and a test of whether a variable loads only on one factor. The strength, or magnitude, of the loading of a variable should meet a suggested minimum cutoff level of ($\beta = .3$), and any variables that load at a value of ($\beta > .2$) on more than one variable demonstrate that the particular variable is loading onto more than one factor and should be dropped from the model.

Again, the four-factor and five-factor models exhibited adequate fit, exceeding the cutoff values that were suggested for an adequate fit. The fit statistics for the five-factor model generated the best fit, but the eigenvalue for the fifth factor was below the satisfactory level. In addition, theoretical considerations did not support the five-factor model. The literature stated that when several models exhibit good fit, the researcher must use guidance from theory to select the correct model. A clearly delineated and supported hypothesis can guide the researcher's choice of the optimum model (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In this case, the literature supported a four-factor model confirming Hypothesis 1.1.

An inspection of the factor loadings for the four-factor model showed that all the measured variables had significant factor loadings ($\beta > .4$, $p < .001$), and no variable loaded on more than one factor. I chose to retain the four-factor model based on substantive theory and the strength and pattern of the factor loadings. The model

displayed an adequate fit (CFI = .961, RMSEA=.074, SRMR=.028) for the data and supported my hypothesis that four professionalism factors would emerge from the EFA. The manifest variables loaded onto each of the four factors as expected. Table 5 provides the names and factor loadings for each of the constructs that were generated from the EFA. There were 20 variables loading on four factors in the final model.

Since the theoretical model consisted of four latent variables, “autonomy of judgment,” “desire for expertise,” “self-concept” and “social agency,” I reexamined the four-factor model closely after generating the results from the first EFA, using 20 variables. There was one variable that was removed from the model since it did not have as strong of a connection to professionalism theory, specifically the “self-concept” factor. In addition, this factor had the lowest factor loading of the group at .654. This variable was RATE21 “Self-Rating: Risk-taking,” thus I chose to drop this variable from the model. Therefore, I reran my EFA using 19 variables as explained below.

Table 5.

Latent Constructs and 19 Measured Variables from Final EFA

Latent Factor	Observed Variables	Description	Factor Loadings*
Autonomy of Judgment	SLFCHG04	Change: Ability to think critically	0.88
	SLFCHG08	Change: Analytical and problem-solving skills	0.89
	SLFCHG17	Change: General knowledge	0.81
	SLFCHG19	Change: Knowledge of a particular field or discipline	0.80
	SLFCHG25	Change: Preparedness for employment after college	0.60
Desire for Expertise	GOAL04	Goal: Become an authority in my field	0.82
	GOAL20	Goal: Obtain recognition from colleagues for contributing to my special field	0.85
	GOAL10	Goal: Having administrative responsibility for the work of others	0.50
Self-Concept	RATE23	Self-Rating: Self-confidence (social)	0.78
	RATE12	Self-Rating: Leadership ability	0.75
	RATE22	Self-Rating: Self-confidence (intellectual)	0.75
	RATE18	Self-Rating: Public speaking ability	0.69
	RATE24	Self-Rating: Self-understanding	0.70
Social Agency	GOAL02	Goal: Becoming a community leader	0.75
	GOAL21	Goal: Participating in a community action program	0.85
	GOAL15	Goal: Influencing social values	0.69
	GOAL12	Goal: Helping to promote racial understanding	0.80
	GOAL18	Goal: Keeping up to date with political affairs	0.60
	GOAL11	Goal: Helping others in difficulty	0.65

* All factors loadings significant at $p < 0.001$

Exploratory factor analysis with 19 variables. The results of the second EFA showed that my four-factor model provided the best fit to the data based on the following reasons: an examination of the eigenvalues and scree plot, the fit statistics, and factor loading. The eigenvalues indicated that a four-factor model is a slightly better fit to the data than the five-factor model, the fifth factor resulting in an eigenvalue (.962) just below the cutoff value of one. The scree plot below was similar to the plot shown in the

first iteration of the EFA, where it displayed that the steepest area of the line ended between the fourth and the fifth factor, and then slowly declined before leveling off at the sixth factor. The fit statistics below are from each of the EFA models (see Table 6).

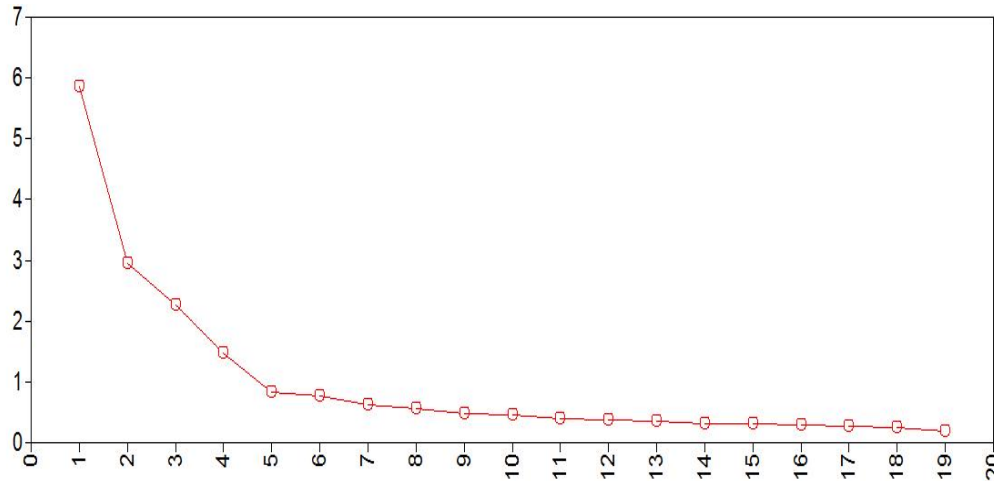


Figure 7. Scree Plot of Final EFA Using 19 Variables.

Table 6.

Model Fit Statistics for Final EFA Using 19 Variables

Model	χ^2	Df	CFI	RMSEA	C.I.	SRMR
3-factor	40598.436***	117	0.849	0.134	.133-.136	0.064
4-factor	10644.937***	101	0.961	0.074	.073-.075	0.028
5-factor	4777.084***	86	0.982	0.053	.052-.055	0.019

Note: C.I. = Confidence Interval for RMSEA; *** $p < 0.001$

Confirmatory Factor Analysis: Hypothesis 2.1

In order to confirm the hypothesized model (Hypothesis 2.1), I conducted a CFA using the 2007-2008 CSS data. The correlation matrix (with means and SDs) for the CFA model is shown in Table 9. This step generally follows an EFA, which generates the number of factors and the variables loading on each factor. The sample size for the

CFA was 13,063. The professionalism factors conformed to the literature in representing a professionalism construct comprised of four factors: “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.”

I ran the CFA using Mplus 6.11, with the maximum likelihood estimator (MLE) and Varimax rotation. The four-factor model was an adequate fit for the data used for the CFA. The overall fit statistics were acceptable (CFI=.97; RMSEA=.056) with the exception of the chi-square value, which was significant X^2 (168, $n=13,063$, $p < .001$) = 6,065. However, this was expected due to the large sample size used in the analysis. There were no correlations assumed between the factors, and the factor loadings were strong and significant.

In addition to the use of fit statistics in a CFA, it is also important to inspect the standardized residuals to account for lack of fit in the model. It is also important to review standardized residuals to determine if the model is adequately explaining correlations between measured variables. Although the standardized residuals should be below an absolute value of 1.96 (significance value of $<.05$), this constraint may be too conservative for large data sets such as the ones used in the analysis; therefore, as an alternative, I looked for variables that had high residual values associated with them. The variable SLFCH25 “Change: Preparedness for employment after college” had a high residual as well as GOAL 10 “Having administrative responsibility for the work of others.” I reran the CFA without these variables but the model did not improve. Since these variables connected well theoretically to the underlying latent factors, I decided to keep them in the model. An inspection of the standardized residual correlations for the

initial model showed acceptable values for all the correlations. Therefore, I did not need to remove any additional variables from the model.

I checked the model for large modification indices (MI) as a final step of any sources of misspecification in the model. I noticed several large MIs with absolute values greater than 1.96 (significant at $p < .05$). As indicated before, with a sample as large as the one in this study, this rule may be too stringent. Researchers should be careful when making changes to a model based on MIs, thus I looked for MIs that were substantially higher compared to the others. I examined whether there were any theoretical connections that may have led to the large MIs between the variables, since researchers warn about making connections solely based on the MIs. Based on these steps, I selected to correlate the residual for the following three sets of variables. The first set included the following pair of items, “Goal04: Become and authority in my field” with “Goal20: Obtain recognition from colleagues for contributing to my special field.” The second set included the following pair of variables, “Goal02: Becoming a community leader” with “Rate18: Self-rating of public speaking ability.” The third set included the following pair of variables “Goal12: Helping to promote social understanding” with “Goal21: Participating in a community action program.” The sets of variables were selected since the model results showed that adding these correlations between the error variances would substantially improve the fit of the model. In addition, it made sense to correlate the residuals for these variables since they were theoretically connected, and therefore the residuals will be connected as well.

After making these changes, I reran the models and the overall fit of the model improved. The factor loadings and the R^2 for the measured variables are shown in Table 7. I retained the second model as my final model and the final results of the CFA are shown below in Table 8. In addition, a graphic representation of the CFA results is shown in Figure 8.

Table 7.

Model Fit Statistics and Comparisons for CFA Models

Model	χ^2	<i>df</i>	CFI	RMSEA	C.I.
Model1	8865.633***	146	0.949	0.068	.066-.069
Model2	6065.650***	143	0.966	0.056	.055-.058

Table 8.

Standardized Factor Loadings and R² Values for Final CFA

Latent	Observed	Description	Factor	R ²
Autonomy Of Judgment	SLFCHG04	Change: Ability to think critically	0.90	0.80
	SLFCHG08	Change: Analytical and problem-solving skills	0.90	0.82
	SLFCHG17	Change: General knowledge	0.79	0.62
	SLFCHG19	Change: Knowledge of a particular field or	0.74	0.55
	SLFCHG25	Change: Preparedness for employment after college	0.62	0.39
Desire for Expertise	GOAL04	Goal: Become an authority in my field	0.67	0.45
	GOAL20	Goal: Obtain recognition from colleagues for	0.61	0.37
	GOAL10	Goal: Having administrative responsibility for the	0.66	0.44
Self- Concept	RATE23	Self-Rating: Self-confidence (social)	0.76	0.58
	RATE12	Self-Rating: Leadership ability	0.76	0.57
	RATE22	Self-Rating: Self-confidence (intellectual)	0.73	0.53
	RATE18	Self-Rating: Public speaking ability	0.68	0.46
	RATE24	Self-Rating: Self-understanding	0.69	0.48
Social Agency	GOAL02	Goal: Becoming a community leader	0.83	0.69
	GOAL21	Goal: Participating in a community action program	0.75	0.57
	GOAL15	Goal: Influencing social values	0.73	0.54
	GOAL12	Goal: Helping to promote racial understanding	0.69	0.47
	GOAL18	Goal: Keeping up to date with political affairs	0.66	0.44
	GOAL11	Goal: Helping others in difficulty	0.64	0.41

* All factors loadings significant at $p < 0.001$

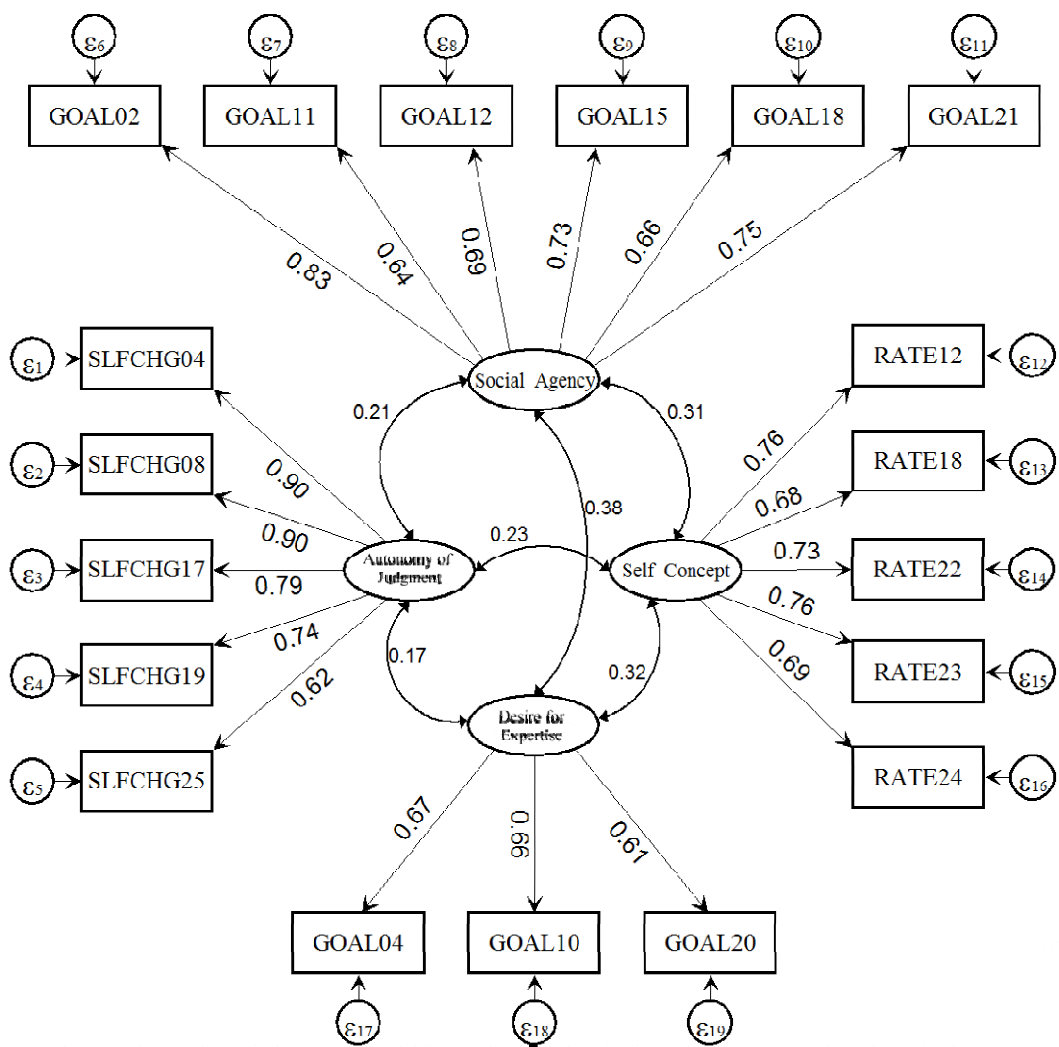


Figure 8. Conceptual Model with CFA Factor Loading Results.

Table 9.

Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
SLFCHG04	1.00																		
SLFCHG08	0.70	1.00																	
SLFCHG17	0.54	0.58	1.00																
SLFCHG19	0.53	0.49	0.47	1.00															
SLFCHG25	0.40	0.41	0.36	0.40	1.00														
GOAL04	0.12	0.12	0.11	0.10	0.12	1.00													
GOAL20	0.13	0.12	0.12	0.09	0.11	0.63	1.00												
GOAL10	0.09	0.10	0.08	-0.0066	0.12	0.37	0.37	1.00											
RATE23	0.13	0.14	0.12	0.05	0.16	0.20	0.17	0.26	1.00										
RATE12	0.15	0.17	0.13	0.10	0.19	0.25	0.18	0.29	0.49	1.00									
RATE22	0.15	0.15	0.12	0.14	0.17	0.25	0.20	0.15	0.50	0.43	1.00								
RATE18	0.13	0.12	0.10	0.09	0.15	0.21	0.16	0.16	0.42	0.52	0.43	1.00							
RATE24	0.14	0.15	0.12	0.10	0.14	0.17	0.14	0.11	0.50	0.38	0.48	0.33	1.00						
GOAL02	0.16	0.14	0.13	0.05	0.15	0.33	0.29	0.37	0.28	0.40	0.21	0.29	0.21	1.00					
GOAL21	0.15	0.12	0.12	0.05	0.12	0.20	0.19	0.23	0.18	0.18	0.09	0.14	0.16	0.57	1.00				
GOAL15	0.13	0.11	0.13	0.06	0.09	0.28	0.26	0.26	0.20	0.20	0.13	0.18	0.21	0.48	0.49	1.00			
GOAL12	0.14	0.12	0.12	0.06	0.08	0.19	0.18	0.18	0.15	0.12	0.08	0.11	0.16	0.47	0.62	0.48	1.00		
GOAL18	0.16	0.14	0.16	0.10	0.10	0.23	0.21	0.19	0.15	0.19	0.20	0.18	0.49	0.42	0.39	0.45	1.00		
GOAL11	0.16	0.14	0.15	0.12	0.12	0.17	0.14	0.21	0.13	0.14	0.06	0.10	0.15	0.38	0.48	0.45	0.43	0.26	1.00
Mean	4.38	4.34	4.34	4.66	4.2	2.72	2.58	2.33	3.59	3.87	3.86	3.51	3.89	2.29	2.23	2.51	2.26	2.45	3.05
SD	0.65	0.65	0.6	0.54	0.74	0.86	0.85	0.9	0.91	0.82	0.82	0.81	0.94	0.79	0.93	0.89	0.93	0.91	0.78

Note: all correlations are significant at .01 level

Latent factors. The latent factors explained the variance in the model based on the results of the EFA. The four factors explained 58% of the variance in total, with “social agency” performing the best by explaining 27% of the variance, followed by “autonomy of judgment,” which explained 13% of the variance, followed by “self-concept,” which explained 11% of the variance, and finally “desire for expertise” which explained 7% of the variance in the model.

The factor correlations between the latent factors in a CFA are also important to explain. Any correlation between the factors above .8 indicates that two factors are, in the main, explaining the same construct and may need to be merged into one measure instead of two. Additionally, if the factors are somehow related, that should show in the correlations in the expected direction, based on the theoretical aspects of the model. This confirms that the factors are measuring the same latent construct. The factor correlations for this model are shown in Table 10.

Table 10.

Factor Correlations for Latent Constructs

	1*	2*	3*	4
1. Autonomy of judgment	-			
2. Desire for expertise	0.17	-		
3. Self-concept	0.23	0.32	-	
4. Social agency	0.21	0.38	0.31	-

**all significant at $p < .001$*

The correlations for the latent factors in the study show good discriminant validity between the four factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency” since the correlations’ residuals were sufficiently high indicating that

the constructs were each distinct factors. These distinct factors are conceptually different, which supports the theoretical hypothesis. In addition, the results of the CFA model presented in Table 7. suggest a strong convergence between the factors that they are all describing the same latent construct of the “precursors of professionalism.”

Reliability. A reliability analysis was conducted for the resulting factors in the study. The results of this analysis show high internal consistency for the latent factors with Cronbach’s α between .72 to .82 (see Table 11).

Table 11.

Reliabilities

Latent Factor	Cronbach's Alpha	Items	Items Included
Autonomy of Judgment	0.82	5	Change: Ability to think critically Change: Analytical and problem-solving skills Change: General knowledge Change: Knowledge of a particular field or discipline Change: Preparedness for employment after college
Desire for Expertise	0.72	3	Goal: Become an authority in my field Goal: Obtain recognition from colleagues for contributing to my special field Goal: Having administrative responsibility for the work of others
Self-Concept	0.80	5	Self-Rating: Self-confidence (social) Self-Rating: Leadership ability Self-Rating: Self-confidence (intellectual) Self-Rating: Public speaking ability Self-Rating: Self-understanding
Social Agency	0.84	6	Goal: Becoming a community leader Goal: Participating in a community action program Goal: Influencing social values Goal: Helping to promote racial understanding Goal: Keeping up to date with political affairs Goal: Helping others in difficulty

Comparisons between Business Students and Other Majors

The primary focus of this study was to assess senior-level undergraduate business students' professionalism values "autonomy of judgment," "desire for expertise," "self-concept," and "social agency" and compare them to students who completed non-

business undergraduate degrees. The following discussion presents the results from testing each of the hypotheses regarding differences in average scores on the four constructs between undergraduate business and non-business students.

Autonomy of Judgment Measure: Hypothesis 3.1

Hypothesis 3.1: Business students will have lower scores in their “autonomy of judgment” factor of professionalism as compared to students from other majors.

This hypothesis sought to determine whether business students, due to various influences not defined and measured in the study (e.g., business training, environmental influences, and personal disposition), would have lower observed scores in their “autonomy of judgment” aspect of professionalism.

Results for the whole sample with covariates. The results of the ANCOVA indicate that “autonomy of judgment” did not vary significantly for the two categories (business, non-business, Table 12). The differences in “autonomy of judgment” mean factor scores across the two categories (business, non-business) did not reach statistical significance, and the magnitude of the effect of major was relatively small for the factor ($\eta^2 = .019$). Type of institution was a significant covariate for the “autonomy of judgment factor.

Table 12.

Whole Sample Mixed ANOVA Results for “Autonomy of Judgment”

	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Major	1	0.544	0.546	0.460
Sex	1	0.166	0.166	0.684
Major x Sex	1	0.156	0.157	0.692
Type of Institution	1	24.010	24.10	< 0.001
Major x Type of Institution	1	0.051	0.051	0.822
Sex x Type of Institution	1	0.638	0.640	0.424
Major x Sex x Type of Institution	1	0.113	0.113	0.736
Error	13,055	0.997		

a. $R^2 = 0.0081$ (adj. $R^2 = 0.0075$) b. Computed using $\alpha = 0.05$

In addition, business students comprised 17% of the sample and their mean factor-scores for “autonomy of judgment” were lower than 43% of their peers in college, after the use of covariates. A plot of the marginal means across majors can be found in Figure 9 along with mean “autonomy of judgment” scores controlling for sex and institution type in Table 13. The plot also shows that business students’ mean scores ranked lower in comparison with many other majors in college.

Table 13.

2008 CSS Population Marginal Means and Standard Errors for "Autonomy of Judgment" Factor with Covariates, Sorted by Means

	<i>N</i>	<i>M</i>	<i>S.E.</i>
<i>Business vs. All Others</i>			
Business	2,227	-0.040	0.022
All Others	10,836	-0.021	0.011
Agriculture	39	-0.270	0.190
Other Non-Technical	1,125	-0.220	0.034
Fine Arts	707	-0.190	0.049
English	593	-0.140	0.058
Biological Sciences	1,143	-0.100	0.038
Humanities	1,093	-0.080	0.040
Mathematics/Statistics	224	-0.077	0.074
Other Technical	241	-0.051	0.077
Education	793	0.001	0.047
Social Sciences	2,174	0.019	0.026
Physical Sciences	296	0.020	0.067
History/Political Science	1,103	0.059	0.035
Health Professional	567	0.110	0.087
Engineering	730	0.200	0.043
Undecided	8	0.320	0.380

Note: All other majors are sorted by marginal mean scores.

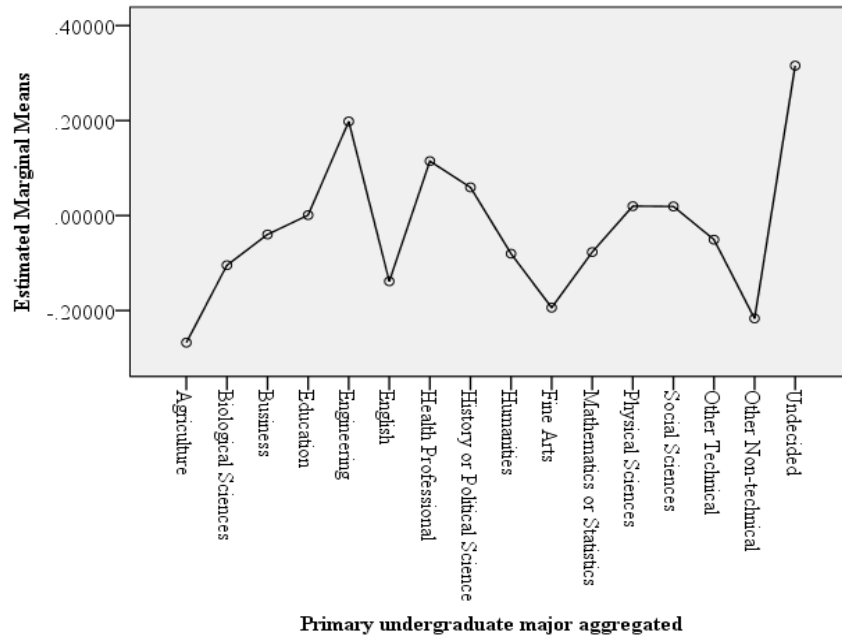


Figure 9. Marginal Means for “Autonomy of Judgment” Construct with Covariates.

Type of institution. The ANCOVA findings show that mean factor scores of “autonomy of judgment” varied significantly by type of institution. Factor marginal means by type of institution are listed below in Table 14 show that “autonomy of judgment” scores were higher for students at private institutions.

Table 14.

Mean “Autonomy of Judgment” Scores of Students Attending Private and Public Universities, Sorted by Means

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Private	9,005	0.030	0.014
Public	4,058	-0.092	0.020

Differences between business and non-business students. The main effect for major was not significant when comparing business students to all other students. However, the estimated marginal means presented in Table 13 help to illustrate the variance in “autonomy of judgment” scores across the majors. Business students have lower scores, on average, than education, social sciences, physical sciences, history/political science, health professional, engineering, and undecided students which constitute 43% of the sample.

Desire for Expertise Measure: Hypothesis 4.1

Hypothesis 4.1: Business students will have higher scores in their “desire for expertise” factor of professionalism as compared to students from other majors.

This hypothesis sought to determine whether business students, due to various influences not defined and measured in the study (e.g., business training, environmental influences, and personal disposition), would have higher observed scores in their “desire for expertise” aspect of professionalism.

Results for the whole sample with covariates. The results for the ANCOVA indicate that “Desire for expertise” scores varied significantly for the two categories (business and non-business, Table 15). While the differences in “desire for expertise” across the two categories reached statistical significance ($p < .05$), the magnitude of the effect of major was relatively small for the factor ($\eta^2 = .0001$). Sex and type of institution were significant covariates for the “desire of expertise” factor.

Table 15.

Whole Sample Mixed ANOVA Results for “Desire for Expertise”

	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Major	1	117.300	119.200	< 0.001
Sex	1	11.790	11.970	< 0.001
Major x Sex	1	3.540	3.596	0.058
Type of Institution	1	8.443	8.576	0.003
Major x Type of Institution	1	0.195	0.198	0.656
Sex x Type of Institution	1	0.079	0.080	0.777
Major x Sex x Type of Institution	1	0.197	0.200	0.655
Error	13,055	0.985		

a. $R^2 = 0.0081$ (adj. $R^2 = 0.0075$) b. Computed using $\alpha = 0.05$

In addition, as shown in Table 16, business students remained the highest-ranking group among all majors after including the covariates. A plot of the marginal means across majors with covariates can be found in Figure 10, along with mean scores for “desire for expertise” in Table 16. The plot also shows that business students’ mean scores ranked highest in comparison with all other majors in college.

Table 16.

2008 CSS Population Means and Standard Deviations for “Desire for Expertise” Factor with Covariates, Sorted by Means

	<i>N</i>	<i>M</i>	<i>S.E.</i>
<i>Business vs. All Others</i>			
Business	2,227	0.250	0.022
All Others	10,836	-0.018	0.011
Mathematics/Statistics	224	-0.270	0.073
Undecided	8	-0.140	0.380
English	593	-0.130	0.058
Other Technical	241	-0.110	0.076
Physical Sciences	296	-0.100	0.066
Agriculture	39	-0.088	0.190
Humanities	1,093	-0.066	0.040
Social Sciences	2,174	-0.053	0.026
Biological Sciences	1,143	-0.016	0.038
Education	793	0.041	0.046
Health Professional	567	0.052	0.087
Engineering	730	0.065	0.043
Other Non-Technical	1,125	0.079	0.034
Fine Arts	707	0.086	0.049
History/Political Science	1,103	0.100	0.035

Note: All other majors are sorted by marginal mean scores.

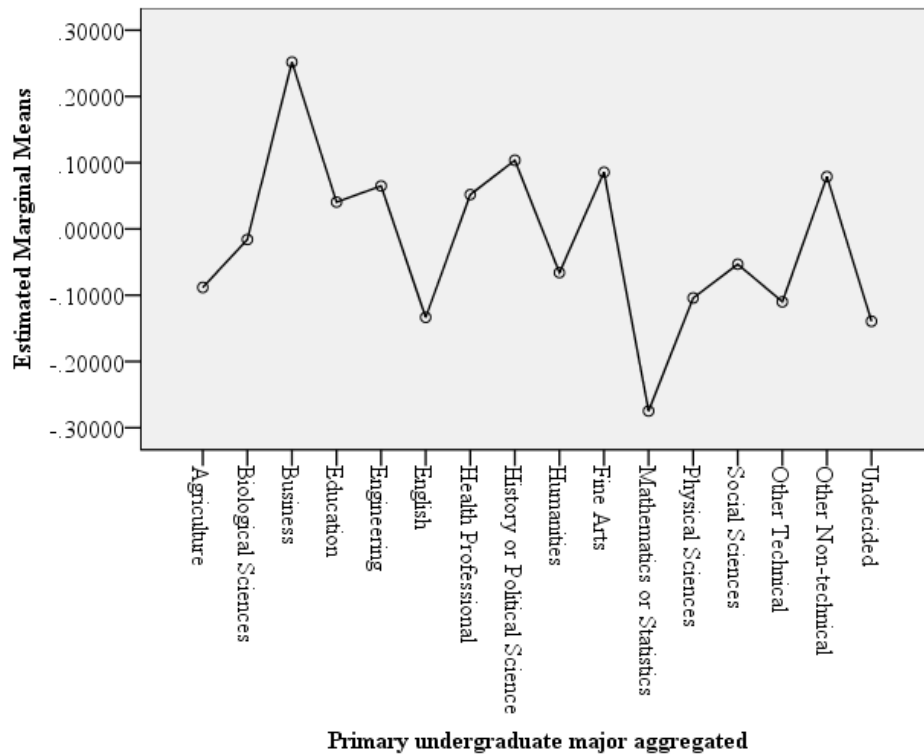


Figure 10. Marginal Means for “Desire for Expertise” Construct with Covariates.

Sex. The ANCOVA findings indicated differences in the mean factor scores of “desire for expertise” varied significantly by sex. Factor marginal means by sex are listed below in Table 17 show that “desire for expertise” scores were higher for male students than for female students.

Table 17.

Mean “Desire for Expertise” Scores of Males and Females

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Male	4,933	0.160	0.018
Female	8,130	0.074	0.017

Type of institution. The ANCOVA findings indicated differences in the mean factor scores of “desire for expertise” varied significantly by type of institution. Factor marginal means by type of institution are listed below in Table 18 show that “desire for expertise” scores were higher for public than private institutions.

Table 18.

Estimated Marginal Mean of “Desire for Expertise” Scores for Type of Institution

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Private	9,005	0.081	0.014
Public	4,058	0.150	0.020

Differences between business and non-business students. The main effect of major on the “desire for expertise” scores confirmed that there were significant differences between business and non-business students ($F(1, 13,055) = 119.2$; $p < 0.001$). The estimated marginal means presented in Table 16 help to illustrate the variance in “desire for expertise” scores across the majors. Business students on average have higher scores than their peers in all other majors.

Self-concept Measure: Hypothesis 5.1

H5.1: Business students will have higher scores in their “self-concept” factor of professionalism as compared to students from other majors.

This hypothesis sought to determine whether business students, due to various influences not defined and measured in the study (e.g., business training, environmental influences, and personal disposition), would have higher observed scores in terms of their “self-concept” aspect of professionalism.

Results for the whole sample with covariates. The results for the ANCOVA indicate that “self-concept” scores varied significantly for the two categories (business, non-business, Table 19). While the differences in “self-concept” across the two categories reached the required statistical significance ($p < .05$), the magnitude of the effect of major was relatively small for the factor ($\eta^2 = .01$). Sex was a significant covariate for the “self-concept” factor.

Table 19.

Whole Sample Mixed ANOVA Results for “Self-Concept”

	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Major	1	20.880	21.540	< 0.001
Sex	1	185.200	191.100	< 0.001
Major x Sex	1	1.499	1.547	0.214
Type of Institution	1	2.259	2.331	0.127
Major x Type of Institution	1	0.009	0.009	0.923
Sex x Type of Institution	1	1.473	1.520	0.218
Major x Sex x Type of Institution	1	1.447	1.492	0.222
Error	13,055	0.969		

a. $R^2 = 0.0081$ (adj. $R^2 = 0.0075$) b. Computed using $\alpha = 0.05$

Business students comprise 17% of the sample and their mean factor-scores for “self-concept” were higher than 74% of their peers in college after including the covariates. A plot of the marginal means across majors with covariates can be found in Figure 11, along with mean “self-concept” scores controlling for sex and institution type in Table 20. The plot also shows that business students’ mean scores ranked third to the highest group in comparison with all other majors in college.

Table 20.

2008 CSS Population Means and Standard Deviations for “Self-concept” Factor with Covariates

	<i>N</i>	<i>M</i>	<i>S.E.</i>
<i>Business vs. All Others</i>			
Business	2,227	0.130	0.022
All Others	10,836	0.013	0.011
Other Technical	241	-0.300	0.076
Fine Arts	707	-0.150	0.048
Health Professional	567	-0.110	0.086
Physical Sciences	296	-0.110	0.066
Agriculture	39	-0.099	0.180
Mathematics/Statistics	224	-0.030	0.073
Biological Sciences	1,143	-0.026	0.037
Engineering	730	-0.020	0.043
Social Sciences	2,174	0.008	0.026
Education	793	0.042	0.046
English	593	0.042	0.057
Other Non-Technical	1,125	0.090	0.034
Humanities	1,093	0.094	0.039
Undecided	8	0.240	0.370
History/Political Science	1,103	0.260	0.034

Note: All other majors are sorted by marginal mean scores.

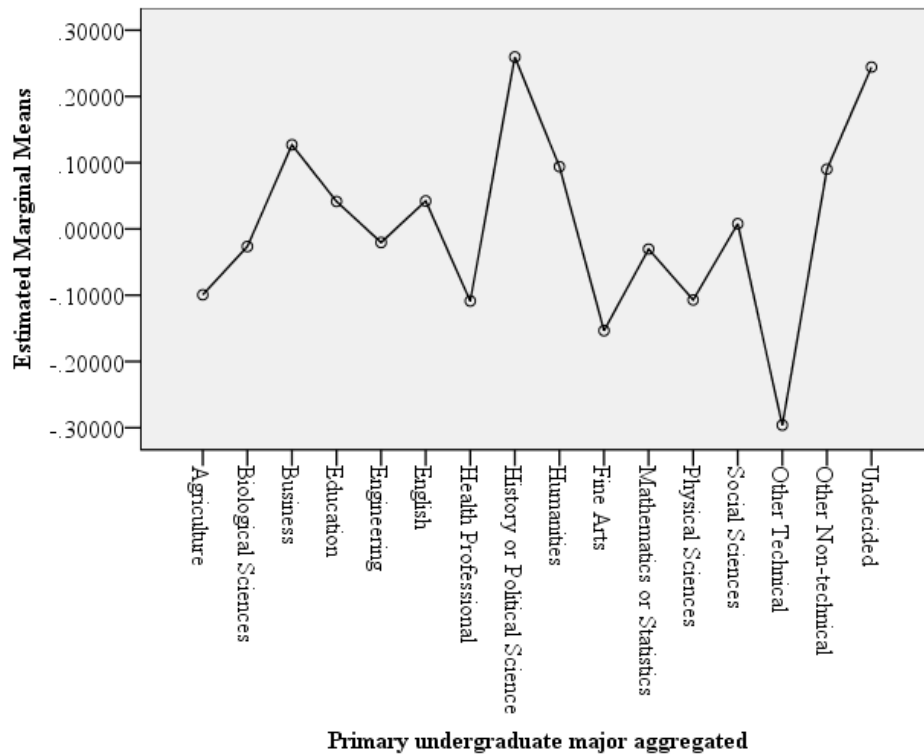


Figure 11. Marginal Means Across Majors for “Self-concept” Construct with Covariates.

Sex. The ANCOVA findings reveal that the marginal means of factor scores for “self-concept” varied significantly by sex. Factor marginal means by sex are listed below (see Table 21) show that “self-concept” scores were higher for male students than female students.

Table 21.

Mean “Self-concept” Scores of Males and Females

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Male	4,933	0.240	0.018
Female	8,130	-0.099	0.017

Differences between business and non-business students. The test of the main effect of major on “self-concept” confirmed that there were significant differences between business and non-business students ($F(1, 13,055) = 21.54 ; p < 0.0001$). The estimated marginal means presented help to illustrate the variance in “self-concept” scores across the majors. Business students, on average, have higher scores than the majority of their peers from other majors.

Social Agency Measure: Hypothesis 6.1

H6.1: Business students will have lower scores in their “social agency” factor of professionalism as compared to students from other majors.

This hypothesis sought to determine whether business students, due to various influences not defined and measured in the study (e.g., business training, environmental influences, and personal disposition) would have lower observed scores in terms of their “social agency” aspect of professionalism.

Results for the whole sample with covariates. The results of the ANCOVA indicate that “social agency” scores varied significantly for the two categories (business, non-business, Table 22). While the differences in “social agency” across the two categories reached the required statistical significance ($p < .05$), the magnitude of the effect of major was relatively small for the factor ($\eta^2 = .001$). Sex was a significant covariate for the “social agency” factor, and the interaction “major x sex” was also significant, indicating that this interaction moderates the relationship between major and the “social agency” factor.

Table 22.

Whole Sample Mixed ANOVA Results for “Social Agency”

	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Major	1	28.730	28.940	< 0.001
Sex	1	20.340	20.490	< 0.001
Major x Sex	1	4.324	4.356	0.037
Type of Institution	1	3.529	3.556	0.059
Major x Type of Institution	1	0.342	0.345	0.557
Sex x Type of Institution	1	2.931	2.954	0.086
Major x Sex x Type of Institution	1	0.087	0.087	0.768
Error	13,055	0.992		

a. R2 = 0.0081 (adj. R2 = 0.0075) b. Computed using alpha = 0.05

Business students comprise 17% of the sample and their mean factor-scores for “social agency” was lower than 71% of their peers in college, after the use of covariates. A plot of the marginal means across majors can be found in Figure 12 along with mean “social agency” scores, in Table 23. The plot also shows that business students’ mean-factor score was lower in comparison with most majors in college.

Table 23.

2008 CSS Population Means and Standard Deviations for “Social Agency” Factor with Covariates

	<i>N</i>	<i>M</i>	<i>S.E.</i>
<i>Business vs. All Others</i>			
Business	2,227	-0.140	0.022
All Others	10,836	-0.003	0.011
Other Technical	241	-0.660	0.075
Physical Sciences	296	-0.450	0.065
Mathematics/Statistics	224	-0.440	0.072
Agriculture	39	-0.350	0.180
Engineering	730	-0.320	0.042
Health Professional	567	-0.140	0.085
Fine Arts	707	-0.079	0.048
Biological Sciences	1,143	-0.069	0.037
Other Non-Technical	1,125	-0.017	0.033
Undecided	8	-0.017	0.370
English	593	0.018	0.057
Humanities	1,093	0.090	0.039
Education	793	0.120	0.045
Social Sciences	2,174	0.230	0.026
History/Political Science	1,103	0.400	0.034

Note: All other majors are sorted by marginal mean scores.

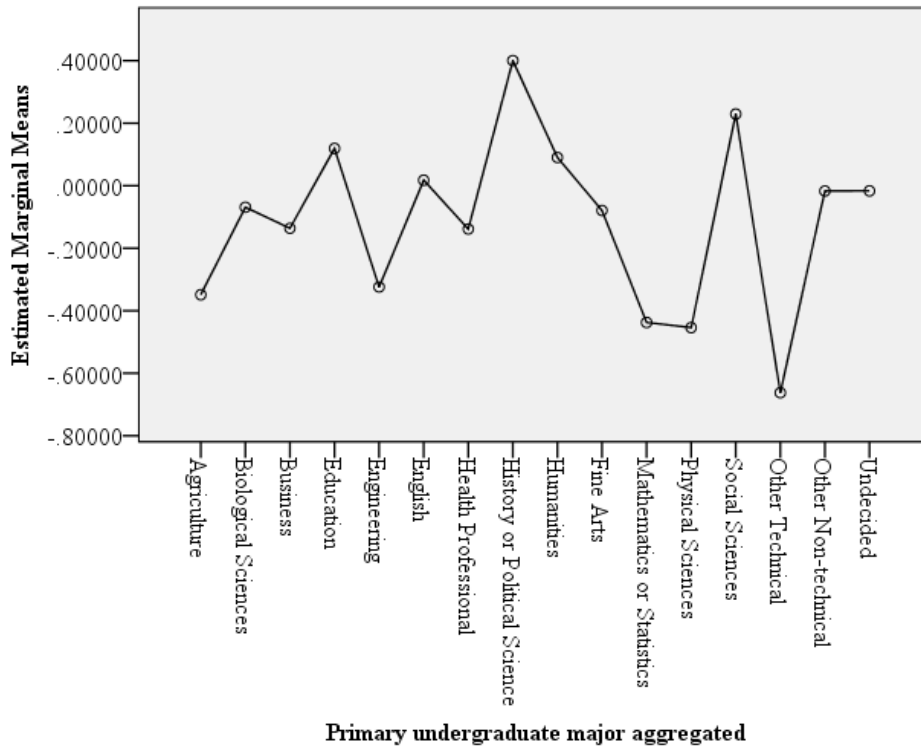


Figure 12. Marginal Means Across Majors for “Social Agency” Construct with Covariates.

Sex. The ANCOVA findings reveal factor score marginal means of “social agency” varied significantly by sex (see Table 24). The table shows that “social-agency” scores were higher for female than male students.

Table 24.

Estimated Marginal Mean “Social Agency” Scores by Sex

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Male	4,933	-0.130	0.018
Female	8,130	-0.013	0.017

Major x sex. The ANCOVA findings reveal factor score marginal means of “social agency” varied significantly, after considering the interaction between “major x

sex.” For business students, this indicates that the type of major in conjunction with gender moderates the relationship between major and the “social agency” factor (see Table 25). When considering this interaction, female students’ scores were higher than male students.

Table 25.

Estimated Marginal Mean “Social Agency” Scores for Business Students, Major by Sex Interactions

	<i>N</i>	<i>M</i>	<i>S.E.</i>
Non Business x Males	3,841	-0.085	0.018
Non Business x Females	6,995	0.079	0.013
Business x Males	1,092	-0.170	0.031
Business x Females	1,135	-0.110	0.031

Differences between business and non-business students. The test of the main effect being a business or non-business student confirmed that there were significant differences between business and non-business students ($F(1, 13,055) = 28.94 ; p < 0.001$). The estimated marginal means presented in Table 23 help to illustrate the variance in “social agency” scores across the majors. Business students, on average, have lower scores than a majority of students from other majors constituting 71% of the sample.

Summary Results

The previous paragraphs summarized the results of this study. An exploratory and a confirmatory analysis identified four factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.” Additionally, the results of this study indicate statistically significant differences between business students and students of

other majors in terms of the four-factors. First, mean factor scores of undergraduate business students for “autonomy of judgment” are lower than 43% of their peers. Second, mean factor scores of undergraduate business students for “desire for expertise” are higher than 83% of their peers in college. Third, the results of this study show that mean factor scores of undergraduate business students in “self-concept” are higher than 74% of their peers in college. Last, the results of this study show that mean factor scores of undergraduate business students in “social agency” are lower than 71% of their peers in college. The results suggests that there are statistically significant differences between business and non-business majors for three of the four factors tested in the study: “desire for expertise,” “self-concept, ” and “social agency.” This suggests that business students differ from their peers in college in most of the dimensions of the precursors of professionalism.

CHAPTER 5: CONCLUSIONS

Business education needs an overhaul when it comes to training business students to become socially responsible managers (Khurana, 2007; Swanson & Fisher, 2009; Trank & Rynes, 2003). Ethical and social values of society are not as valued in the business world as they are in other professions, proven by the ethical direction of many corporate agents (Adler, 2002; Swanson & Frederick, 2001). Previous literature lays blame of corporate ethical scandals on deficient training of business students (Khurana, 2007; Swanson & Frederick, 2003).

In this vein, this study uses the framework of professionalism to examine the values and attitudes of business students when they graduate from their programs and join their profession. In prior studies, scholars applied the professionalism framework in all of its facets— “autonomy of judgment,” “expertise,” “self-concept,” and “social agency” — to study and understand professionals in various disciplines (Hall, 1968; Haywood-Farmer & Stuart, 1990). In this study, the professionalism framework focused on the “precursors of professionalism” in students. These precursors are indicative of the professional attitudes that business students possess as they graduate from college and enter their professional careers. Senior-level business students cannot be defined as professionals at the end of their undergraduate program because they have not attained the necessary experience in their field yet, which is a necessary requirement to become a professional (Brint, 1996; Freidson, 1984). This study uses the precursors as the markers of students’ professionalism at the beginning of their journey.

This study applies exploratory and confirmatory factor analysis statistical methods to confirm that items used in the College Senior Survey (CSS) survey fit a cohesive model of professionalism. This analysis makes use of latent constructs, which capture characteristics of a population that are not directly observable. These variables or items in the study form clusters that explain the underlying latent construct. Prior scholars have used only exploratory factor analysis method in their studies. This study additionally applies confirmatory factor analysis method to verify the professionalism model. Therefore, this study serves as an additional confirmation of the theoretical hypotheses that uses “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency” as indicators of professionalism.

Subsequent to the exploratory and confirmatory factor analysis, this study used the analysis of covariance (ANCOVA) method to compare mean factor scores of the four factors in the different disciplines. The results of this research suggest that undergraduate business students score lower than 43% in “autonomy of judgment” factor and lower than 71% in “social agency” factor, when compared to their college peers. Additionally, undergraduate business students’ score higher than 83% in the “desire for expertise” measure and higher than 74% in the “self-concept” measure, when compared to their college peers. This suggests that if education has effects on students’ values and attitudes, then business education may not have sufficient and equitable emphasis on the four facets of professionalism. The subsequent discussion in this chapter addresses the results of this research investigation, including the implications and limitations of this study, as well as future directions for research.

Interpretations of Findings

Following is a discussion of the research questions, related hypotheses, analysis of the results, and interpretations of the results of each of the latent factors: “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.” Moreover, the institutional and environmental factors related to the precursors of professionalism are discussed.

Preliminary analysis. The preliminary analysis explored a solution that best explains the variance and covariance in the Higher Education Research Institute (HERI) data when no *a priori* path restrictions are used. Four factors were statistically derived using exploratory factor analysis and additional tools of assessment, such as a scree plot, Kaiser-Gutman rule, and review of fit statistics. I labeled the four factors “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency” based on the relationship of the variables in the context of established theory reviewed earlier. Additionally, to test the hypothesis that a single higher-order latent variable affects the pattern of covariance in the observed data, a four-factor higher order model was tested using confirmatory factor analysis. The final model included 19 items that were supported by adequate fit statistics. All latent variables were adequately modeled by three, or more, manifest variables per factor. All items had strong loadings on the higher-order professionalism factor. The final model supports the hypothesis that the latent factor professionalism has four underlying dimensions: “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.”

Group differences. Subsequent to the exploratory and confirmatory analysis performed to find an adequate solution to explain covariance in the data, an analysis of the group differences by major, considering the covariates, gender, and type of institution, was conducted for the four factors: “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency.”

Autonomy of judgment. The “autonomy of judgment” factor measured students’ rating for independence in judgment guided by special expertise. The items surveyed in this test were students’ reported change in critical thinking, analytical and problem solving, expertise in the discipline, general expertise, and readiness for employment. Due to the overwhelming emphasis on experiential skills and knowledge over theoretical understanding, I hypothesized that business students would have lower scores, on average, on the measure of “autonomy of judgment” compared to their peers (see Hypothesis 3.1 for additional clarification). The results of the pairwise comparison between business and non-business students for this factor was not significant. The marginal means of business students were lower than 43% of their peers who majored in areas such as social sciences, physical sciences, history/political science, health professional, and engineering. One possible explanation for this is that students in with higher marginal means may have reported higher scores for items such as problem solving, critical thinking, and analytical thinking due to the natural connection of their education to these facets, while business education lends itself to more experiential methods (Crainer & Dearlove, 1999). Future studies for this factor may create a more sensitive measure for “autonomy of judgment,” using more survey items that measure

critical thinking and independence of judgment skills in college students in order to discover more significant differences between business and non-business students or between different majors.

The main effect of institutional type in the model of the “autonomy of judgment” factor score indicated significant differences between students who attended private or public institutions. Students who attended private institutions scored significantly higher on their “autonomy of judgment” than their peers who attended public institutions. Private and especially liberal arts institutions have been reported to use more integrative courses in their business curriculum than public institution (Obermueller, 1993). These integrative courses allow for connections between disciplines such as sociology and business, or psychology and business, and therefore this training allows more opportunity for students to practice critical thinking skills (Obermueller, 1993).

Additional testing for differences in mean factor score for “autonomy of judgment” by gender, and the interactions of the main effects, failed to show significant differences between business and non-business students. This is confirmed by prior studies such as Myers and Dyer (2006) who reported no difference in scores of critical thinking skills by gender. Additionally, Pascarella and Terenzini (1991) reported that college education does have a positive influence on students’ critical thinking skills. However, they failed to find any significant differences between males and females on critical thinking skills.

Desire for expertise. The “desire for expertise” factor measured students’ aspiration to develop expertise in their special discipline. The items surveyed in this test

were students' desire to become an authority in their special field, students' aspiration to obtain recognition from their colleagues for their contribution in their field, and students' desire to have administrative responsibility for the work of others.

I hypothesized that business students would have higher scores than their peers on their "desire for expertise" factor (see Hypothesis 4.1 for additional information). The results of the comparison between academic disciplines showed that mean "desire for expertise" score of business students was higher than their peers. This finding suggests that business students are highly motivated to develop the business expertise necessary to enter their profession. The business profession has high financial rewards for managers and executives working for corporations that are highly-profitable (Crainer & Dearlove, 1999). Bowles and Gintis (1976) have discussed the hidden language in business education, emphasizing the corporate bottom-line and the success of managers in businesses. It is important to note that business students ($n=2,227$) have higher scores than 83% of their peers; this main effect was statistically significant ($F(1, 13,055) = 119.2 ; p < 0.001$). This further suggests that business students' training may influence their attitudes and motivations toward additional expertise in the discipline.

Additional tests of differences of mean factor scores for "desire for expertise" by gender revealed significant differences between males and females. Male students, on average, scored significantly higher than female students in the "desire for expertise" factor. There were no prior studies addressing "desire for expertise" gender differences; however, Kaman and Hartel (1994) reported higher anticipation of salaries by male students than female students (Kaman & Hartel, 1994). This may explain male students'

higher desire for expertise in this investigation, considering male students' higher expectations of an increased salary.

Also, differences of mean factor scores for "desire for expertise" by type of institution revealed significant differences between private and public colleges. Students from public colleges, on average, scored significantly higher than students from private institutions in the "desire for expertise" factor. There were no prior studies addressing "desire for expertise" type of institution differences; however, liberal arts colleges have less of an emphasis on vocational and professional training, which may explain the difference in the type of students that enroll in public as compared to private colleges (Colby, Ehrlich, Sullivan, & Dolle, 2011). Students in public colleges may select public institutions in pursuit of practical or experiential knowledge which explains their higher scores in this factor.

Self-concept. The "self-concept" factor measured students' overall confidence and leadership ability. The items surveyed in this test were students' rating of their self-confidence (social), leadership ability, self-confidence (intellectual), public speaking ability, and self-understanding.

I hypothesized that business students would have a higher mean score on "self-concept" than their peers in other academic disciplines (see Hypothesis 5.1 for additional information). The main effect of the two categories of majors (business, non-business) confirmed that business students' scores on "self-concept" were significantly different from their peers overall ($F(1, 13,055) = 21.54 ; p < 0.001$); additionally, the estimated marginal means show that business students had a higher scores than 74% of the sample.

This finding suggests that business education may have more emphasis on students' leadership abilities than most other majors. This was confirmed again by a survey that was administered annually by the Graduate Management Admission Council (GMAC). The survey conducts a comprehensive, global survey of employers who hire business and other students annually. In 2011, 1,509 participants representing 905 companies in 51 countries reported on their hires. Most employers reported that compared with other employees at the same job level, business students have higher abilities in learning, motivation, and leadership (General Management Aptitude Test, 2011). This significant difference in mean factor scores suggests that business students' training may influence their "self-concept" as measured in this study.

Differences in mean factor scores of business students for "self-concept" by gender were significant between males and females. On average, male students scored significantly higher than female students in the "self-concept" factor. Pascarella, Smart, Ethington, and Nettles (1987) carried out a longitudinal study on the influences of college education on students' self-concept, and found that academic and social experiences during college have a direct effect on students' self-concept; however, no difference was found for this effect when race and gender were considered. The significant results of this study show a gender difference in "self-concept" for with males scores higher than females. One plausible explanation, for business majors only, is that males receive more confirmation for their career aspirations, given a higher percentage of role models in the corporate environment, especially in the higher ranks (Daniel, 1998) .

Differences in mean factor score for “self-concept” by type of institution were not statistically significant. Although private college and university students scored higher than students from public institutions on the “self-concept” factor, there was a substantial overlap in the distribution of these scores. Private institutions have been reported to use smaller classes and greater levels of student-faculty interaction, which may influence students’ self-concept, but the results in this model did not show significant differences based on type of institution (Pascarella et al., 1987; Wolf, 2012).

Social agency. The “social agency” factor measured students’ values and attitudes in terms of their duty to society. The items surveyed in this test were students’ rating of their goals, such as the goal of becoming a community leader, the goal of participating in a community action program, the goal of influencing social values, the goal of promoting social values, the goal of keeping up-to-date with political affairs, and the goal of helping others in difficulty.

I hypothesized that business students would have lower scores than their peers in their “social agency” factor (see Hypothesis 6.1 for clarification). The results of comparisons between disciplines showed that mean scores of business students were lower than 71% of their peers in college. The hypothesis test of differences between business students and non-business confirmed that business students differed systemically from their peers ($F(1, 13,055) = 28.94 ; p < 0.001$). The low mean factor scores suggests that business students’ training may influence their “social agency” as measured in this study. This finding suggests that business education has low emphasis on ethical and social issues in their education as discussed by prior scholars (Khurana,

2007; Swanson & Fisher, 2009; Trank & Rynes, 2003). Business students rank higher than technical majors such as engineering, math, and physical sciences in mean factor scores of “social agency”, but lower than their peers in fields such as English, education, humanities, and the social sciences (see Table 29). Although these differences between majors were not tested for statistical significance, this may further indicate that these students are being trained in a manner more similar to technical fields, such as engineers, physicists, and other physical scientists. The business curriculum’s emphasis on technical subjects, such as accounting, finance, marketing, economics, and statistics, does not allow much room for meaningful education in disciplines such as history, sociology, or the integration of these themes within students’ education (Bennis & O’Toole, 2005; Khurana, 2007). Bennis and O’Toole (2005) criticized the direction of business education and graduate business research towards scientific methods, highlighting that scientific methods cannot replace human judgment, especially in the area of ethics and morality. Khurana (2007) attributed the scientific direction of business education to economic conditions that necessitated U.S. corporations to become more efficient in the face of severe economic recessions and foreign competition. This efficiency required more technical expertise rather than education on “social agency.” Moreover, business students are rewarded for this experiential training with high corporate salaries and lucrative managerial positions; therefore, students have the drive and motivation to gain this expertise (Crainer & Dearlove, 1999). Although it continues to be necessary to provide technical training to business students in order to meet corporate needs, it is critical to recognize that business students become managers of organizations where their

decisions have societal consequences. Therefore, there is an unmet need in business students' understanding of their future roles in business within the larger societal context (Colby, Ehrlich, Sullivan, & Dolle, 2011; Khurana, 2007).

Institutional and Environmental Factors. In this study, across models, students' major of study (business, non-business) was a significant predictor for most of the precursors of professionalism identified in the analysis. It was theorized in this study that there are numerous influential factors on professionalism, such as individual student characteristics and departmental norms within academic fields, neither of which were analyzed in this investigation. Previous literature identified students' major field of study as an influential subculture that dictates environmental factors, such as the people with whom students interact and the curriculum that they study (Renn & Arnold, 2003). It is likely that students who majored in business arrived at their college or university predisposed to a focus on developing expertise and little interest in contributing to their community and society. Additionally, students' choice of major and the norms within the business departments where students enroll might, in turn, support and nurture their natural tendencies, thereby increasing the likelihood that business students will achieve these results in their precursors of professionalism. Higher Education scholars Terenzini and Pascarella (2005) argue that academic environments can differentially reward and reinforce students' varying interests and abilities.

Some evidence suggests that academic majors differentially shape students' attitudes, interests, and abilities...(Smart, 1997; Smart et al., 2000; Smart & Feldman, 1998). Smart and his colleagues (Smart, 1997;

Smart et al., 2000; Smart & Feldman, 1998) provide the most convincing evidence that academic environments differentially reward and reinforce different interests and abilities, accentuating initial differences. The changes in students' abilities and interests are greatest when students enter an academic environment congruent with their initial interests. (p. 326).

Business students may select the business major based on their initial interest and abilities in the subject matter, but the majors' academic environment can accentuate these initial differences in students. The results in the precursors of professionalism may have been due to students' initial interests in business expertise as well as their natural abilities in leadership, yet the academic environment that was congruent with students' interest may have accentuated the students' results.

Implications of the Study

The interpretation of the results in this study leads to the explanation of the implications of these results for business education and the business profession. Compared to their peers—especially those who are in other social science fields—business students score higher than most in the areas of their “desire for expertise” and “self-concept” and lower in “social agency.” Students' results in “desire for expertise” and “self-concept” show great promise in the development of their skills toward professionalism. These students are excited about their fields of discipline shown by their high scores in the “desire for expertise” factor. They also have confidence and leadership ability to succeed in their field shown by their scores in the “self-concept” factor. Their lower scores in “social agency” show that business students may be

deficient in their promise to develop as full professionals. As previously noted, this study does not uncover the predictors that influence their scores, such as pre-collegiate individual characteristics, experiences and programs students joined in college, internships, parental attitudes, economic status of students, academic ability, and myriad other factors that may influence these precursors. Yet this study shows that students' major of study is a significant factor for students' scores, and that business students have low scores as compared to their peers in two areas related to professionalism. Moreover, Khurana (2007), Swanson and Frederick (2001), Trank and Rynes (2003) all point to the deficiencies in business education when it comes to integration of ethics and awareness of social issues within business curriculum. The theoretical framework on hidden curriculum, used in this study, may also explain business students' lower scores in "social agency." The overemphasis of the business curriculum on duties to shareholders rather than stakeholders may have influenced students' social agency. Colby et al. (2011) called for the overhaul of business education. These scholars proposed strategies for curriculum, teaching methods, and program arrangements that can transform undergraduate business education into a discipline that graduates professionals who serve society, as was originally intended. Additionally, Colby et al. (2011) explain that the goal of education is to develop and graduate students who have capabilities in the area of analytical reasoning, the ability and disposition to take multiple perspectives when confronting a complex decision or judgment, and the capacity to make connections of personal meaning between what one does and who one intends to become. All of these characteristics allow students to develop a personal and a professional identity. This is

likely where business education fails: in the formation of a complete professional identity where students are able to integrate their expertise with societal social responsibility, based on their ability to perform autonomous critical thinking.

Along these lines, Colby et al. (2011) in “*Rethinking Undergraduate Business Education*” call for integrative learning for students, which requires institutional intentionality. This integrative learning requires business students to think deeply about the concepts in liberal arts subjects and knead them together with business subjects. The curriculum must be actively mixed together, which does not occur by merely adding a humanities or a social science distribution requirement to business. The paired courses from two or more disciplines must have intentional learning objectives for students. Colby et al. call for programmatic emphasis on social influences, where students widen their angle of vision by paying explicit attention to the effects of business on society, and, conversely, the effects of society on business.

A salient example of this type of learning can be found in a program offered at The Stern School of Business at New York University. The business school adopted a required four-course curricular sequence that addresses social influence themes. The first course focuses on the formation of students’ professional responsibility and character within the place of business in the larger social context. During this first year, students also take plenary lecture series with small group discussions and written assignment that allow students to make interconnections among politics, religion, society, and business. This course, guided by professors, urges students to step back and consider the wider meaning and contexts of business as one social institution among many. This offering is

a significant departure from the typical offerings found in most introductions to business classes. The second course, which students take as sophomores, covers organizational communication and its social context. Students are taught to communicate effectively with a wide array of stakeholders, learning that a corporation serves more than just its shareholders. Juniors take a third course where they study law, in addition to business and society. Students learn about the role of law in governing the conduct of business, as well as the global effects of commerce within the boundaries of international law. At the end of the undergraduate program, seniors take a capstone course entitled Professional Responsibility and Leadership. These courses require students to make thoughtful, well-informed choices about their future in business and recognize how their business roles will affect the meaning of their lives and the kinds of people they become. This process conforms to Kohlberg's (1976) theoretical framework that is based on moral development through stages of maturation allowing business students to develop in their critical thinking and ethical evaluation modeling in the four years of college. In the Stern School of Business program, students develop a conceptual vocabulary for thinking and talking about ethical issues and choices. This series of business program courses offers theoretical and integrated experiences that require more than just distribution requirements within a program. The courses build on one another and add up to a powerfully integrated student experience. This design has an intentional structural attention to sound and responsible business education (Colby et al., 2011).

This present study confirms the need for all business programs to adopt an approach to business education that highlights the effects of this profession on society

and allows students to develop a full professional identity that is embedded with the responsibility that is attached to the expertise that students develop. Prior to this study, scholars pointed to weaknesses of business education and to the dire consequences that these may have on our society. Their points have been made based on program observations, study of business curriculum, and corporate scandals involving business trainees (Borkowski & Ugras, 1998; Carpenter, Harding, Finelli, & Passow, 2004; Khurana, 2007; Trank & Rynes, 2003). This present study confirms that our business graduates echo the weaknesses identified by prior scholars, and this confirmation points to the significance of this investigation.

A final implication of this study is now that the precursors of professionalism have been identified with an exploratory and a confirmatory analysis, researchers will be able to apply these precursors or derivatives of them to other fields, such as engineering, nursing, medicine, law, and education, among others. Since professionalism is an important goal in all fields of professional study, this research facilitates the review of this latent factor in graduates.

Last, this research should stimulate discussion and consideration of changes regarding the integration of interdisciplinary academic offerings in business programs with an emphasis on the social effects of business education and related ethical and philosophical issues. Although it may not be fiscally feasible to implement in all business programs in the current socio-economic climate, the continually growing research literature focused on [un]ethical business practices should serve as motivation

for the business education community to adopt curricular policies that are responsive to our knowledge of the business education field.

Limitations of the Study

The first limitation of the findings of this study is related to the use of a secondary dataset and how that affects the relationship between the data and the conceptual framework brought to the data. Because the survey was designed to meet the needs of HERI, the CSS dataset imposed theoretical restrictions on modeling the latent factors of interest. For example, only three manifest variables were available to estimate the “desire for expertise” factor, although five or six items would have been recommended. In addition, not all of the survey items were strong theoretical candidates for measuring the latent factors of interest. For example, the “autonomy of judgment” factor should have a greater theoretical emphasis on students’ critical thinking and analytical and problem solving, but only two candidate variables were strong theoretical matches.

The second limitation was the potential bias of self-reported measurements, since respondents may exaggerate or underreport their responses to specific items (Creswell, 2009). Although HERI researchers could have used vignettes, or short cases, that measure students’ scores for professionalism measures objectively, they chose to include several self-reported measures of professionalism. These items consisted of statements such as “change: analytical and problem solving skills,” “rating: leadership ability,” and “change: ability to think critically,” to which the student was asked to provide an estimate of their own ability.

The third major limitation of this study was the sampling strategy combined with the observational (e.g., non-experimental) nature of the data. Because several sub-populations were heavily over-sampled in the implementation of this survey, the assumption that the data were derived from a random sample of the population of interest was not met. For example, of the institutions participating in the CSS study during the academic years ending in 2007 and 2008, the overwhelming majority of observations were drawn from private colleges: Private institutions represented 80% of the observations in the 2007 dataset, and 81% in the 2008 dataset. In addition to a lack of balancing of the strata, there was also substantial over-sampling at the individual level as well: 60% of the subjects in the 2007 dataset and 62% of the subjects in the 2008 dataset were female.

A fourth, less severe, limitation was the possibility that the grouping of survey items with similar initial wording and positively worded phrases resulted in spurious artifacts due to the item stem effect (Barnette, 2000). For example, the items used to measure the “desire for expertise” factor were worded as follows: “goal: become an authority in my field,” “goal: obtain recognition from colleagues,” and “goal: having administrative responsibility.” The item stem effect on the estimation of the variance-covariance patterns in the CSS data is not clear. However, future implementations of the CSS should address this issue by adding negatively worded items, varying item stem wording, and varying the response options (Barnette, 2000).

Suggestions for Future Research

A reasonable next step resulting from this research is to apply this model to other cross-sectional and/or longitudinal datasets with similar samples. Studies using longitudinal datasets may explain changes in the precursors of professionalism during college years. Comparisons of the precursors of professionalism between majors are yet another promising area for future research. The datasets used in this study did not provide normally distributed samples of students of all majors included in the sample, in order to conduct a comparison of the precursors of professionalism between majors, but future collection of this data may enable the pursuit of this research.

Although all of the subjects in this study were senior-level undergraduate students, testing these models with samples of graduate students may help explain change in professionalism scores after several years of experience in the labor force and additional educational training. Longitudinal studies could be conducted using the *Your First College Year Survey* (YFCY)—also developed and administered by HERI—to test whether students' scores vary significantly over time, test whether external forces explain any of the variance (e.g., economic recession or financial scandals for example), and to determine how each of the precursors develops as a function of time. The results in this study, as well as the proposed research avenues, will provide educators an incentive to apply interventions that may improve students' professionalism levels.

Multi-level modeling of the factors can provide a method to estimate variances within and between hierarchical structures in terms of the precursors of professionalism. Additionally, these models enable the researcher to estimate unique variance components

at several hierarchical levels simultaneously (Raudenbush, 2004). These estimates could be used to test whether the variance within the precursors is equal across levels (e.g., institution, academic department, and individual), predict the value-added of the institution/academic department, or provide a means to model both the random and fixed effects of the true population model efficiently.

Another extension of this research is a study of the measurement invariance of mean factor scores across different groups such as the two groups studied here (business, non-business), as well as differences between other groups such as gender, type of institution, or other disciplines. The first step would be to fit a confirmatory factor analysis (CFA) to determine if the precursors of professionalism are stable constructs with strong factor loadings for all measures factors and groups. For example, it is important that the factors in this study do not vary across groups, if any future claims are to be made about the relationship between the precursors of professionalism and students' major of study. If measurement invariance is detected between certain groups such as gender, then the exploration of how the precursors of professionalism are different for gender would not be valid for these students. Another step is to test for the structural model invariance across different groups. This test checks for the pattern of relationship between the precursors of professionalism and specific groups such as males compared to females or public compared to private colleges.

Fertile, as well, for future studies is an examination of the effects of omitted variable bias on the factor loadings and predicted scores. Additional predictors of the precursors of professionalism, such as students' involvement in extracurricular activities,

additional courses or professional certificates in ethics, internships and volunteer work in organizations, and study-abroad programs, could help to explain a more of the overall variance in the data, while refining our understanding of the manifestations of these latent factors. Controlling for the omitted variables would also help to estimate the population parameters more accurately, since the variance will be partitioned with greater efficiency. Although the final model of this study explained 58% of the variance of the “precursors of professionalism,” controlling for omitted variables in the specification of each of the four factors, “autonomy of judgment,” “desire for expertise,” “self-concept,” and “social agency,” could help to explain the developmental pathways related to professionalism. Similar relationships could be modeled to test whether or not higher order latent variables explain the precursors of professionalism effectively.

Final Comments

Arguably, business education is more important than ever in U.S. higher education. Business education is the largest segment of undergraduate majors, constituting more than 20% of students in four-year institutions, year after year (Snyder et al., 2009). Business is considered a professional track, and when it is combined with other professional majors, such as engineering, nursing, education, agriculture and others, the total rises to 68% of all undergraduates (Colby et al., 2011; National Center for Educational Statistics, 2010). This study is pertinent to students in professional tracks, as well as students who may become professionals in the future. Additionally, the prominence of business institutions in contemporary U.S. society adds to the importance and criticality of proper education and training of business students. These business

institutions have influenced not just their customers and shareholders, but the wider sectors of government and society.

For higher education, the education of business students poses important questions. Higher education has been chartered for important public purposes, including the education of citizens for their participation in democracy (Tierney, 1989). The centrality of business education stems from the centrality of business in society. The considerable number of undergraduates who select business for their field of study, and the even greater number who will be employed in business for their entire career, requires higher education to do more than just help students develop “expertise” that help these students advance in their personal careers. Advancing students’ expertise in their chosen field or discipline is an important goal, but business education needs to do more to ensure that students understand their social influence on society as professionals. These pre-professionals have to be able to connect their future role in business to the larger world. Business programs can attain these goals by changing their curriculum, and socializing and educating their faculty to teach the concepts, as well as measuring student learning and assessing students prior to their joining the business world.

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APPENDIX 1
CURRICULUM VITAE
LANA S. NINO

SUMMARY

Seasoned financial educator and executive with twenty-five years of combined academic and business experience. Experience and education are augmented by Certified Public Accountant (CPA) and Certified Information Systems Audit (CISA) certifications.

EDUCATION

Doctor of Philosophy in Higher Education Administration and Policy, University of California, Riverside, CA, June 2012

Advanced Executive Program, Northwestern University, Illinois, Kellogg Graduate School of Management, July 2000.

Masters of Science in Business Administration, Information Systems Auditing, California State Polytechnic University, Pomona, CA, June 1991

Bachelors of Science in Business Administration, Accounting, California State University, Long Beach, CA, May 1984

CERTIFICATIONS AND AFFILIATION

Certified Public Accountant (CPA), January 1988. Member of the California Society of CPAs

Certified Information Systems Auditor (CISA), March 1994. Member of the Information Systems Audit and Control Association

Member of the American Accounting Association

Member of American Education Research Association

PUBLICATIONS

Nino, L. S. (2011). Historical and Ideological Challenges in Business Education, *American Journal of Business Education, Vol.4, No.1*

Nino, L. S. (2010). Literature Review of Challenges in Business Education, *The Business Review, Cambridge, Vol.16, No.1*

Nino, L. S. (2007). Market Capitalization of Major Markets and the Progress of Adoption of the International Accounting Standards, *The Business Review, Cambridge, Vol.9, No.1*

Decker, J., Duran, D. Nino, L. (2004), A Grounded Design Approach for Outsourcing, *The Business Review, Cambridge, Vol.2, No.2*

CONFERENCES

2010 American Educational Research Association Conference, Denver, Colorado

Presenter: Diversity Initiatives Based on Institutional Identity

2007 Economics & International Business Research Conference, Miami, Florida

Presenter: Market Capitalization of Major Markets and the Progress of Adoption of the International Accounting Standards

2006 Chinese American Scholars Association Conference, Slovakia

Presenter: Women: Feminism, Sexuality, and Equality in the Work Force

2005 Global Business and Finance Conference – Dublin, Ireland

Presenter: The Geopolitical Impact on the International Accounting Standards

2004 The International Business and Technology Research Conference – Las Vegas, NV

Presenter: A Grounded Design Approach for Outsourcing

2004 Global Business and Finance Conference – Las Vegas, NV

Discussant – Board Structure and the Interdependence of Corporate Governance Mechanisms

2003 Web CT Conference – San Diego, CA

Panel Participant – Spreading Technology in Traditional Research Institutions

FELLOWSHIPS & AWARDS

- 2011-2012 Graduate School of Education, University of California, Riverside, Riverside, CA
- 2010-2011 Graduate School of Education, University of California, Riverside, Riverside, CA
- 2009-2010 Graduate School of Education, University of California, Riverside, Riverside, CA
- 2000 Advanced Executive Program at Kellogg School of Management (Employer's award)

EMPLOYMENT CHRONOLOGY-HIGHER EDUCATION

Whittier College (2002-Present)

Associate Professor of Business Administration

Nationally recognized private liberal arts college

- Responsible for the development and enhancement of the accounting concentration within the Business Administration Department
- Courses taught: Financial Accounting, Managerial Accounting, Intermediate Accounting, Accounting Information for Decision Making, Auditing
- Served on top strategic committees for the college

Whittier College (1990 - 1992)

Visiting Instructor

- Developed new curriculum for new course offerings in accounting and business
- Developed teaching programs that included hands-on accounting applications

EMPLOYMENT CHRONOLOGY-BUSINESS

Metric Products, Inc.

(2003-2004)

Controller

Company specializes in manufacturing and retailing of intimate apparel products.

- Responsible for establishing financial and managerial controls for outsourced plants in Mexico, India, and Honduras
- Established a financial reporting package for the Board of Directors and top management that standardized weekly and monthly reporting requirements to corporate office
- Worked with outside auditors to complete the review of financial statements
- Managed the implementation of a cost accounting system that included bills of material and inventory module for over 1000 various products/skus
- Compared costing reports of various international plants and summarized results

PacifiCare Health Systems, Inc.

(2002-2003)

Senior Consultant

Fortune 50 company and a national healthcare provider.

- Assisted in the process of outsourcing the Company's nation-wide information system functions to IBM and Keane. The outsourcing contract covered ten-year agreements with over \$1.2 billion of cost
- Supervised a financial team of twelve financial analysts and senior financial analysts in the process of developing a budget post the outsourcing transaction
- Assisted in the development of a five-year business strategic plan that was submitted to the corporate office

- Started the implementation of the new outsourcing procedures for hardware and software services for all the PacifiCare division

Entrada Networks, Inc.

Vice President, Chief Financial Officer (2001-2001)

Publicly traded technology company in development and sales of storage-area networks transport systems over optical and IP networks.

- Obtained a \$5 million credit facility with Silicon Valley Bank to improve liquidity of company
- Developed company's business plan for investors and bankers
- Set up the SEC reporting function and completed the quarterly and annual filings
- Communicated with Wall Street analysts and industry research analysts
- Interfaced with Board of Directors and developed an informative board packet

ProShot, Inc. (1996-2000)

Vice President, Chief Financial Officer

Technology company of GPS hardware and software products to the golf industry.

- Responsible for all aspects of financial and general management that includes the following:
- Completed several private placements to support the growth of the company which included road shows with top investment bankers, preparation of a formal prospectus, in addition to extensive due diligence with investors
- Established over \$20 million of equipment lease financing lines with major financing companies such as Newcourt Financial and ORIX Capital, Textron, and the Associates
- Established and managed international distributors in Europe and Australia

- Developed several models of five-year business plans, projecting new lines of revenue, financial planning, operating expenses, and company capitalization assuming an exit strategy
- Completed two acquisitions of other companies in the industry

Clothestime, Inc.

(1994 – 1996)

Director of Financial Systems, Audit and Controls

Publicly held company. Retailer of over 500 stores specializing in women's apparel.

- Established a five-year strategic plan teaming with the president and top management
- Assisted president and CFO in reporting to Wall Street Analysts and financial community
- Supervised the development of an online financial system that monitored department budgets for all cost centers and stores within the company
- Prepared and reviewed SEC quarterly and annual reports
- Prepared an audit program cover for different areas of financial and audit risk
- Established detailed audit procedures to complete different audits including inventory management, distribution, financial reporting, stores, and loss preventions, etc.

American Retail Group (ARG) - Millers Outpost

(1992 - 1994)

Accounting and Audit Manager

Large retailer of over 200 stores specializing in casual and sports clothing.

- Interfaced with vice Presidents to set strategy, establish controls, cut costs, and improve efficiency
- Interacted with external auditors, financing committees, and management of parent company.

- Supervised the preparation of the consolidated financial statements.
- Responsible for the preparation of tax provision and tax planning
- Interfaced with external auditors for facilitating the completion of year-end audit
- Assisted in the financial management of new store openings namely “Levi Outlets”

Eadie & Payne CPAs

(1988 -1990)

Senior Accountant

Company business: CPA firm specializing in mid-size and small businesses.

- Supervised entire auditing engagement for clients
- Managed year-end audit, tax planning, tax preparation, and special projects for clients
- Specialized in manufacturing, construction, and retail firms
- Supervised staff, effectively managed audit budgets, and met all deadlines

Arthur Andersen & Company

(1984-1987)

Senior Accountant

Worldwide audit and tax firm.

- Conducted various audit engagements and review of SEC reporting for publicly held clients
- Prepared and reviewed tax returns for clients
- Lead a variety of audits for a manufacturing, technology, and retail firms
- Effectively used various software packages to perform analysis and projections for clients