# UNDERGRADUATE PREFERENCES FOR CAREERS IN FINANCIAL AND MANAGERIAL ACCOUNTING: SOCIAL, PROFESSIONAL, AND RELIGIOUS FACTORS

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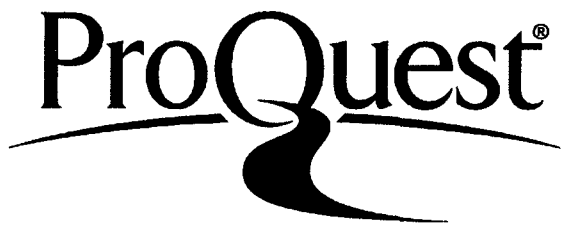


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**Undergraduate Preferences for Careers in Financial and Managerial Accounting: Social, Professional, and Religious Factors**

The guiding construct of this study is one from the sociology of knowledge offered by Peter L. Berger and Thomas Luckmann in *The Social Construction of Reality* (1966). A person constructs reality, one's way of knowing, through a dialectical process created by interactions of personal experiences, social relationships, and religious beliefs. In this study, the person is the undergraduate accounting major, the social environment is the profession of accounting as described by the academic professoriate, and religious beliefs defined by the manner in which those beliefs are held as one of fundamentalism.

This study also considers the question of whether or not the manner in which an accounting major holds religious beliefs affects his/her preference for financial or managerial accounting. The characteristics that distinguish these two areas of accounting provided a means for establishing unique constructs for measuring that preference. The same goal in accounting, that of providing relevant information to decision makers, exists within the two areas, financial and managerial, with three discernible differences, differences that formed the basis of this study. Those differences are 1) types of decisions made by users, 2) timing of information used, and 3) authoritative standards governing information disseminated.

An online survey, sent to accounting majors enrolled in colleges and universities in Missouri, contained items using the above differences and in terms of self, friends, and a deity. Statistically significant results indicated that undergraduate accounting majors who preferred financial accounting were indifferent to religious fundamentalism but that

those accounting majors who preferred managerial accounting were opposed to holding one's religious beliefs in a fundamental manner.

Few studies of the profession of accounting within the United States contain reference to religious topics. As religion is one of the three dialectics operating in developing one's way of knowing or understanding, the author suggests that the profession of accounting encourage more studies integrating religion within the social and personal aspects of the way an accountant makes sense of reality.

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# CHAPTER 1 – INTRODUCTION TO THE STUDY

This study examines whether the manner of holding religious beliefs influences preference for financial or managerial accounting for undergraduate accounting majors. To determine if the manner of holding religious beliefs makes a difference, a measure for differentiating financial from managerial accounting was created for use in this study. The sociological construct for one's way of knowing (Berger & Luckmann, 1966) provided the underlying basis for determining a preference through the dialectic of three perspectives, those of personal experience (undergraduate accounting major), social relationships (accounting profession primarily represented by accounting professors), and religious beliefs (Revised Religious Fundamentalism Scale-RRFS) (Altemeyer & Hunsberger, 2004).

This first chapter presents background of the profession of accounting for (1) defining the differences between its two major areas as intergroup and intragroup orientation, (2) reviewing historical differences in the profession that influence undergraduate accounting education, and (3) examining the role of religion as described in accounting literature. The research question is whether the manner of holding one's religious beliefs make a difference in an undergraduate accounting major for financial accounting or managerial accounting. Research on religion is minimal in United States accounting literature though internationally accounting practices and standards are impacted by religious beliefs and practices, especially in countries in which Islam is the religion of the majority.

The use of exploratory factor analysis for creating subscales used to differentiate the practice of financial accounting from that of managerial accounting provided a

measure (Accounting Preferences Test-APT) for testing the role of religion as a factor for accounting area preference.

## Background of the Study

The author of this study, a professor of accounting for over three decades in a small, private liberal arts college (until a decade ago, a church-related institution), having taught the entire curriculum of accounting classes (except income taxes) has observed and advised hundreds of accounting graduates as they enter the work force. An observation that has persisted over the years is that of excellent students in the financial classes struggling with managerial accounting concepts, and many of the good financial students being the bright stars in the managerial accounting classes. Teaching the courses verified a difference in orientation between financial and managerial accounting but financial accounting courses dominated the major and students tended to gravitate toward financial and the status associated with the Certified Public Accountant (CPA) certification rather than a position in managerial accounting as they neared graduation. As an advisor to the accounting students, the author felt an obligation to help the students who pass through her influence toward making the most appropriate choice of career emphasis. This obligation energizes the author's desire to develop means by which students might evaluate and counsel students toward better career decisions early on. With a pedagogical interest in career decisions, the author has considered if there are sociological and/or religious experiences present in the lives of students that might, if identified and consciously/objectively considered, provide a basis for directing the student toward an accounting career path that is more likely to be personally satisfying and, perhaps, even more profitable.

The profession of accounting in the United States since 1919 has operated through a bimodal approach for furthering the interests and education of those who practice accounting. Identified as "the earliest recognized professional accounting organization in the United States" (Previts & Merino, 1998, p. 135), The Institute of Accounts of New York began in 1882, focusing on education for all areas of accounting (Previts & Merino, 1998; Cheffers & Pakaluk, 2007). Upon the formation of the American Association of Public Accountants (AAPA) in 1887 with British auditors as the founding members and emphasis on public accounting, and especially with the passage of CPA legislation in New York in 1896, prominence of The Institute group waned (Previts & Merino, 1998). A formal split occurred when managerial accountants in the AAPA disagreed with the public accountants over an accounting practice in 1917, resulting in the formation of a separate group, the National Association of Cost Accountants (Zeff, 1984; Johnson & Kaplan, 1987). From this time forth, the various areas of accounting have organized as separate groups, each with its own professional credential (Table 6), though only the CPA has legal status.

## The Problem Statement

The research question, does the manner of holding one's religious beliefs make a difference in an undergraduate accounting major's preference for financial or managerial accounting, originated from the dearth of accounting literature addressing religion in relation to the practice of accounting in the United States and the lack of an established measurement scale for distinguishing a preference for financial or managerial accounting.

The paucity of accounting literature incorporating the role of religion within the nature and practice of accounting creates a void of understanding for those in the

profession of accounting. The social construct of how persons "know" or develop knowledge, consisting of the dialectic of personal experience, social relationships, and theoretical or institutional order, a "symbolic universe" generally defined as religion (Berger & Luckmann, 1966), was used as the theoretical basis for addressing the research question.

From the description of the differences between financial and managerial accounting (Table 1), behaviors associated with these differences are recognizable as inter- and intra-group activity. These recognizable differences offer opportunity for measuring preference for one behavior against the other. A pre-existing scale for measuring preference based upon the differences identified and within the three areas of the theoretical construct was not discovered, although one group of scales using a "personal-environmental fit" (Holland, 1997) provided evidence that the two accounting areas yielded different test results (Appendix C). Therefore, a scale was developed for testing preference undergraduate accounting majors for either financial or managerial accounting, dubbed the APT, Accounting Preferences Test.

## Professional Significance of the Study

According to Berger and Luckmann, human beings attain knowledge through the dialectic relationship of everyday experiences characterized as personal, social, and religious interactions. Persons who become accountants are no less subject to these interactions and influences than are other individuals in professions. Religion is an aspect of one's way of knowing (per Berger & Luckmann), and to ignore that influence in understanding accounting is to disadvantage those seeking knowledge within the accounting profession. Currently, as the internationalization of financial reporting

standards is occurring, religion is a factor in that process as the Islamic religion prejudices Allah as the authority ahead of man-made rules or standards. The internationalization process requires that accountants confront religious beliefs in order to develop the standards sought.

Undergraduate students who choose to major in accounting, like those who are involved in the internationalization standards process, cannot and do not cast aside religious beliefs when learning accounting, nor do they put aside their accounting knowledge when considering religion. The profession of accounting could glean insight from understanding the role of religion within the context of accounting theory and practices. Ignoring this possibility is to offer knowledge and practices that possess less than the fullness possible from employing the three factors of one's way of knowing. This study offers statistically significant evidence of the influence of religion in determining a preference for an area of accounting. Other studies should be designed to incorporate the role of religion within the profession of accounting.

Career guidance is an essential part of accounting education's role within the profession. Given the statistic that "93% of professional accountants "work inside organizations in value-adding, decision-support roles (vs. the other 7% who work in assessment or compliance roles)" (Clinton, 2007), guidance given accounting undergraduates that encourages or emphasizes taking the CPA exam and gaining experience in public accounting invites reexamination. Guiding students into their preferred field of accounting by exposing them, without prejudice, to the various areas of accounting should benefit the students and the profession.

## Overview of the Methodology

Undergraduate accounting majors enrolled at most of the colleges and universities in Missouri responded to the survey that was offered on a voluntary basis through Survey Monkey via accounting department chairs posting the online link to an accounting majors' website or by accounting faculty who provided their students with the online link.

The research question encompasses two issues, as noted above. One issue for differentiating between financial and managerial accounting was measured through survey items prepared by the author of this study and the responses to those items were subjected to exploratory factor analysis. The resulting survey instrument, consisting of two subscales, was labeled the Accounting Preferences Test, or APT. The other issue, the manner of holding one's religious beliefs, was measured using a published scale on religious fundamentalism, the Revised Religious Fundamentalism Scale (RRFS) created and tested by Robert Altemeyer and Bruce Hunsberger (2004).

The preference subscales for financial and for managerial accounting were subjected to reliability and construct analyses. Testing of the subscales for convergent validity was done by comparison of responses to present and future career plans for either financial or managerial careers and plans to take professional accounting exams of either a financial or managerial nature. The subscales were compared to responses on the religion measure for testing the primary hypothesis of this study.

## Definition of Key Terms

Terminology or terms are used in this study to convey important concepts underlying the premise of the research. Definitions are provided for the following terms:

*Religious fundamentalism* – the belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity (Altemeyer and Hunsberger, 2004).

*One's way of knowing* – the dialectical relationship in which a creator or producer of an idea or product that then acts back upon the creator or producer; "the paradox that man is capable of producing a world that he then experiences as something other than a human product" (Berger & Luckmann, 1966, p. 61). This way of knowing is the product of

1) a person's everyday experiences combined with

2) social interactions with other persons, institutions, history, and

3) symbols, especially symbols that transcend everyday experience or reality for creation of a hierarchy of other realities within a symbolic universe that "puts everything in its right place" (Berger & Luckmann, 1966, p. 98), (commonly referred to as religion)

*Financial accounting* – a process of communicating quantitative information through formal financial statements, subject to external audit procedures, developed from historical information constructed in accordance with reporting standards determined by formal authoritative bodies for external parties to use primarily in making investment or credit decisions (Table 1, Ch. 2)

*Managerial accounting* – a support process for gathering relevant quantitative and qualitative information within a present or future context for reporting to managers within

an organization to enable them to make better or improved decisions concerning a variety of fluctuating issues (Table 1, Ch. 2)

## Summary

This study seeks to gain information about two aspects affecting undergraduate accounting majors: primarily, does the manner of holding one's religious beliefs affect the undergraduate accounting major's preference for financial or managerial accounting; and secondly, do undergraduate accounting majors have preferences for either financial or managerial accounting. This second issue is addressed before the primary issue of religious beliefs for determining the ability to differentiate preference for either financial or managerial accounting. Literature describing the differences between financial and managerial accounting, the institution of academic and professional accounting in relation to undergraduate accounting majors, the role of religion in the accounting literature of the United States, and the use of psychological, sociological, and religious survey scales for addressing the issues that are the focus of this study follow, and result in four hypotheses.

# CHAPTER 2 – LITERATURE REVIEW

This study considers the question of whether or not the manner in which an undergraduate accounting major holds religious beliefs affects his/her preference for financial or managerial accounting. The characteristics that distinguish these two areas of accounting provide a means for establishing unique constructs for measuring that preference. (Chapter 3 contains the constructs.) Although the same goal in accounting, that of providing relevant information to decision makers, exists within both, financial and managerial accounting, three discernible differences form the basis of this study. Those differences are 1) types of decisions made by users, 2) timing of information used, and 3) types of reporting guidelines governing information disseminated. For purposes of this study, the area of financial accounting is considered to include preparation of published financial statements (as opposed to internally utilized), the practice of public accounting (the external audit function), and taxation. The area of managerial accounting includes cost/management accounting, internal auditing, and information systems.

## Differences between Financial and Managerial Accounting

In general, the two areas of accounting may be described by use of the prefixes of "inter-" and" intra-" in relation to groups or organizations. The prefix *inter*, meaning between or among, captures the external focus of financial accounting in which an organization or company interacts with organizations or companies that are distinct from its own existence, whereas, the prefix *intra*, meaning within, describes the internal focus of managerial accounting in which the interacting parties belong to and work together in the same organization or company. This distinction of inter-/intra- applies across the three differences noted above, those of users, timing, and authority.

Intergroup configurations require clearly defined working conventions and specified systems understood and used among all involved persons (Mark & Wulf, 1997). Formal guidelines are used with intergroup structures to generate a common vocabulary and agreed upon report structures because the various members of the groups operate from differing perspectives, purposes, and interpretation of the work (p. 73). To serve multiple constituencies and achieve the desired outcomes, members of these groups must adhere to published processes and procedures. Financial accounting follows GAAP (Generally Accepted Accounting Principles) now determined by the Financial Accounting Standards Board (FASB, 1978), which requires preparers of financial statements and allows users of financial statements to operate within a mutually understood and accepted framework of communication conventions.

Intragroup configurations may be distinguished from intergroup configurations. Intragroup environments operate using communication conventions that exist as "common" among group members, but often without external recognition of their existence. A non-accounting example for illustrating intragroup communication is that of "family slang: words invented by you and yours that don't appear in any dictionary but that convey your meaning just fine" (Ager, August 1, 2001). Members of an intragroup develop "similar interpretations" of the processes and purposes for producing known outcomes (Mark & Wulf, 1997, p. 73). Intragroup better characterizes the work of managerial accounting, which operates within the confines of a particular life reality, that of the organization in which the accountants provide information to managers who are privy to the ongoing economic affairs of that same organization. This work arrangement

allows for and encourages similar interpretations that lead to common understanding without formal definitions or processes (IMA, 1996).

The following table compiled from collegiate accounting texts representing both financial and managerial accounting provides a composite of the three differences. These three distinctions are discussed following the table.

Table 1

Characteristics Differentiating Financial Accounting and Managerial Accounting

| Characteristics | Financial—Intergroup | Managerial—Intragroup |
|---|---|---|
| Decision focus of users | Communicate financial condition for external user decisions primarily for investment/credit decisions— primarily quantitative | Assist internal management in making better decisions for decision-specific relevance— quantitative and qualitative |
| Time frame of information | Historical | Present or future orientation |
| Reporting standards | Formal general-purpose financial statements with notes in accordance with FASB/GAAP and audited by external Certified Public Accountants (CPA) | Internal needs utilizing a variety of reports covering short-to-long time frame, length, and with or without explanatory notes |

(Atkinson, Kaplan, & Young, 2004, Kieso, Weygandt, & Warfield, 2004, Hansen & Mowen, 2006, Kinney, Prather-Kinsey, & Raiborn, 2006, Horngren, Datar, Foster, Rajan, & Ittner, 2009, Nikolai, Bazley, & Jones, 2010)

*Differences Associated with Decision Focus of Users*

History provides several illustrations of the differences in decision focus over time and across country boundaries. For example, Sumerian priests as early as 5,000 BC practiced managerial accounting by maintaining inventory records and developing internal control functions for their religious orders, enabling managers to make better decisions. However, other priests, operating with a different focus, that of financial accounting, maintained records of transactions between buyers and sellers, and of the payment of taxes to external parties (George, Jr., 1972; Keister, 1963).

From these historical times to the present, methods and materials changed in the practice of accounting. To illustrate, Max Weber (Collins, 1986) proposed a causal chain

setting forth the primary elements of social change between the Stone Age and modern Western European capitalism. This consisted of such items as coinage, weapons, the development of church law, and recordkeeping. An example of recordkeeping evolution is the struggle of merchants to track acquisition and conversion of raw materials into manufactured goods, using different currencies, and moving materials through foreign countries to find viable markets. A significant difference is that these early records were narrative rather than numerical in form like present day double-entry formatted accounting records (Crosby, 1997).

But "after the tenth century commerce increased in quantity, value, and the variety of goods involved" (Crosby, 1997, p. 204) and narrative records proved problematic. Increasing commercial complexity exceeded the capacity of individual merchants, and stimulated partnerships for the purpose of combining financial resources and expertise, and for spreading risk. This involvement of multiple individuals necessitated records that had a common understanding by all, records created within the concern/business but usable by partners who were external to the concern. In other words, preparers and users of financial information required a common language to facilitate this interrelationship.

Weber noted that the key to the development of modern Western European capitalism resided in "rational capital accounting" (Collins, 1986, p. 83). His writings in General Economic History stated that the "rational capitalistic establishment is one with capital accounting, that is, an establishment which determines its income yielding power by calculation according to the methods of modern bookkeeping and the striking of a balance" (p. 83). This work expanded to include information on "earnings, property

values, debts, and financial trends" (Moyer, 1951, p. 7) as mergers of corporations affected groups of stockholders in the latter part of the 19th century. Members of society looked to financial accounting for reliable data as business complexity increased. Weber's description of the role of capital accounting and the role of public accounting as noted illustrates the area of financial accounting.

However, just as a need for standardization to promote common understanding among multiple parties promoted the development of externally oriented accounting, accounting more focused upon internal objectives developed as well. An example of the continued development of managerial accounting is offered by Previts and Merino (1998) noting that United States manufacturing accounting developed "systems [that] appear to have been unique, peculiar to each company, and ad hoc, versus incorporated into the double-entry system of records" (p.58). An example of this type of managerial accounting information generated and used internally would be that of a learning curve recorded by Thomas Jefferson during the period of 1794-1800. Jefferson, in managing his estate, recorded the time particular workers spent to make nails. He classified the workers by level of experience and amount of output. This information enabled him to direct workers to produce the most nails in the least time, thereby making the most efficient use of labor (Gambino & Palmer, 1976). Use of this learning or experience curve enabled Jefferson, both owner and manager, to make informed decisions leading to profitable operations. Garner (1954) suggests that for companies the manufacturing accounting systems fell within their proprietary property, "an especially advantageous way was considered personal, a secret not to be let out to rival firms" (p. 30). During the period 1890-1913, "engineers and accountants made substantive advances in the area of cost

accounting and, the United States became the clear leader in the field" (Previts & Merino, 1998, p. 180).

Meanwhile, on the financial accounting front, public accounting, the profession that offers various accounting services to multiple customers or clients, in the United States developed with significant influence from its British counterpart. Statutory audits were required in Great Britain (Moyer, 1951), primarily because of the British Companies Act of 1844, which facilitated a less complex means of establishing a corporation than had previously prevailed (thus encouraging and promoting easier capital formation). Prior to the Act, auditors had existed. Those auditors, also proprietors, were internally sourced and assigned the duty to ascertain that the other proprietors, designated as managers, were properly reporting operating results to the main body. The Company Act did not speak as to who (shareholders or non-shareholders) could be auditors, but in 1856, the Act was amended to stipulate that, "the Auditors need not [not yet "must not"] be Shareholders in the Company" (Hein, 1963, p. 509). The work of financial auditing thus commenced a migration from its intracompany placement into the intercompany sphere. The opportunity for development of independent professional auditors commenced.

British investors, taking advantage of the economic boom in the U.S. during the period after the Civil war, in the late 1860s sent their accountants to the United States to watch over British investments (Wise, 1982). Professional accounting grew from this set of roots embedded in auditing, which distinctly exemplifies an external focus in financial (as opposed to managerial) accounting. The first professional body, the Institute of Chartered Accountants of Scotland, was organized in 1854 (Brown, 2004). In 1883

Parliament granted The Institute of Chartered Accountants in England and Wales a charter of organization (Edwards & Miranti, Jr., 1987). The opportunity to practice as independent public accountants and to organize accounting associations provided new venues for employment.

In 1887 the American Association of Public Accountants (AAPA) incorporated, attributed to the work of Edwin Guthrie, a partner in a London chartered accountancy firm working in the United States (Edwards & Miranti, Jr., 1987, p. 22; Wise, 1982). The AAPA's membership consisted solely of public accountants, accountants engaged in the practice of providing services to clients in the public domain as distinguished from accountants working within a company, with many British-born members "emulat[ing] the traditions of the British profession of chartered accountancy" (Previts & Merino, 1998, p.139). Over a period of years with various name changes, this group became the American Institute of Certified Public Accountants (AICPA) (Roberts, 1987). The earlier professional accounting organizations (the AAPA and the older Institute of Accounts of New York) worked together for legal recognition of a designation similar to the British Chartered Accountant for U.S. accountants. On April 17, 1896, State legislators of New York enacted the first state licensure law for certification of public accountants (CPA) in the U.S. (Flesher, Miranti, & Previts, 1996, p. 51).

Those accountants engaged in cost management or managerial accounting lacked the high profile of financial accountants during the early 1900s (Johnson & Kaplan, 1987). The nature of their work undoubtedly affected the socialization aspects of the two groups of accountants. Management cost accounting likely maintained its lower profile than that of public accounting for a very good reason: considering the nature of their

focus of providing information internally to an organization, they had to protect proprietary information, information that created or maintained competitive advantage to the business owner. The value of cost or managerial accounting was within (intra) the organization, whereas public accountants depended upon external or public recognition for obtaining clients, those same business owners (Previts & Merino, 1998).

An example of the proprietary nature of cost management comes from the Carnegie Steel Company. Johnson and Kaplan (1987) wrote "that Carnegie made a fetish of using cost statements to manage his giant steel works from 1872 to 1902" (p. 32) and that "Costs were Carnegie's obsession" (p. 33). Cost sheets were used for evaluating employees, raw materials quality, production process improvements, and development of by-products. Carnegie joined other steel makers, "to have the opportunity to get a look at the cost figures of his competitors" (p. 33). "One of [Carnegie's] favorite dicta was: Watch the costs and the profits will take care of themselves" (p. 33), a lesson supported by Peter Drucker in an article in The Wall Street Journal in 1975, "For the essential fact about profit is that there is no such thing. There are only costs" (1975, February 2).

An excellent incidental contrast of the varying focuses of internal and external (intra- vs. inter-) is illustrated by the opposing viewpoints of managerial and financial accounting regarding interest costs. This occurred at the end of the Progressive Era, 1897-1918 (Previts & Merino, 1998). The philosophical dispute was instrumental to formal separation of one group from the other (Zeff, 1984). A disagreement about the proper classification and reporting of interest costs resulted in some of the cost [management] accountants in the American Institute of Accountants (AIA: the transitional name of organization between its being known as the AAPA and, as at

present, the AICPA) leaving the organization. This disagreement illustrates an internal versus external focus of the two types of accountants. The management accountants regarded interest cost as properly included in the cost of a product, an internal cost; the financial accountants thought interest expense properly included as a cost of the time period in which it was incurred, an external cost, that of capital, rather than attaching it to the product manufactured. Both sides refused to change positions, resulting in the formation of a separate professional accounting organization, the National Association of Cost Accountants (NACA) organized in 1919 (Zeff, 1984; Johnson & Kaplan, 1987), and since 1991 known as the Institute of Management Accountants (IMA) (Meyers & Koval, 1994, p. 141). That the managerial accountants formally organized some 20 years after their financial accounting colleagues illustrated what could be interpreted as a lower profile ("intra" focus) than public accountants ("inter" focus).

Whereas the financial accountants organized with an assumption that they were the leaders of the profession of all accounting, the managerial accountants' raison d'être was their contrast to financial accountants (Previts & Merino, 1998, p. 180). The NACA went its own way "to advance the science of cost accounting through such avenues as research, discussion, acquisition, and diffusion of cost accounting knowledge" with membership open to interested persons (Meyers & Koval, 1994, p. 6). Upon the formation of the NACA, J. Lee Nicholson noted in his opening address to the founders of the group, using the word "systematizing" for the important work of managerial accounting,

> that there is a clear distinction to be made between accountants who specialize in systematizing, compared to those who make audits and investigations. The work

> of systematizing is largely creative and the successful systematizer must have a fair knowledge of the manufacturing conditions in a plant, or the inner knowledge of a business. (p.6).

Nicholson highlighted a recognized difference between managerial and financial accounting: managerial accountants work with planning and control systems for the purpose of effecting future activity (a creative function), whereas, financial accountants and public auditors, by recording, reporting, and investigating transactions, work with historical data (an empirical function).

*Differences Associated with Time Frame of Information*

Distinction between managerial and financial accounting can be made not only in decision-makers' focus but also in terms of the time frame information focus. Nicholson also noted in his opening address to the founders of the NACA that ". . . the work of auditing and investigations does not require this creative power for the reason that the work to be done consists of passing on something which has already been recorded" (Meyers & Koval, 1994, p. 6). Passing on what existed in the past differs from projecting what may be the future.

A study of professions within the context of the division of expert labor by sociologist Andrew Abbott (1988) highlights the time frame difference between financial and managerial accounting through use of illustrations in which he juxtaposes financial accounting with the legal profession and managerial accounting with the profession of engineering. Abbott sees "abstraction" as "the quality that sets interprofessional competition apart from competition among occupations in general" (p. 9). For example, financial accounting is not in competition with managerial accounting, but the accounting

profession is in competition with other professions. Abbott shows that survival depends upon abstract thinking within a profession to know how to "redefine its problems and tasks, defend them from interlopers, and seize new problems" (p. 9). As noted above he offers the examples of financial accountants competing with those in the legal profession over taxation and managerial accountants competing with those in the engineering profession over cost determination. These examples provide illustration for this study in looking at the differences in the time frames of information used by financial accountants, that of past events, and managerial accountants, that of future considerations.

As noted above, an example of rival professions occurred during the period of industrialism and the rise of large manufacturing companies that created greater importance for understanding costs: a rivalry between managerial accountants and engineers (Abbott, 1988, p. 231). His example of this rivalry is thus described: "The battle between the engineers and accountants concerned whether knowledge of actual production processes was more important than knowledge of cost allocation in determining reasonable output and wage standards. Claims for both sides were legion, as indeed befits such an interstitial jurisdiction; it was again a question of knowing the possible cost information (according to the accountants) or the necessary cost information (according to the engineers)" (p. 232). The cost accountants thinking abstractly looked ahead to what might be (possible costs) while the practically grounded engineers waited for information on actual amounts (necessary costs), similar to the work of financial accountants. Abbott used the word "interprofessional" (p. 232) to describe the competition between the two groups, the engineers and accountants, rather than rivalry

between the accountants (financial and managerial), which might in contrast be styled, "intraprofessional."

More detail of this possible vs. necessary contrast shows that timing of cost information was pivotal in the work of cost/managerial accountants in creating cost "standards" (Abbott, 1988, p. 232), a work associated with G. P. Norton and Alexander Hamilton Church during the scientific management era (Johnson & Kaplan, 1987). Abbott cited the development of cost standards as emblematic of management accounting becoming a genuine profession. Standards, in cost accounting, are

> ... estimates of how much a certain form of production ought to cost. Actual variety in production was then analyzed by looking at "variations" from the standards so derived. Estimation of standards required solving the "burden problem" (of allocating overhead costs), smoothing out random fluctuations in shop work, and calculating the effects of fluctuating factors of production. Like most accounting problems, these tasks were gradually solved by complex professional assumptions and conventions. . . . These conventions created the crucial judgments that made cost accountants real professionals. As long as cost accounting merely recorded actual costs, it was so much data processing. But the invention of standard costs and the use of those costs for management decision-making firmly established the large new jurisdiction (Abbott, 1988, p. 232).

The difference in timing focus, that of managerial accountants estimating for the future, redefined the problem of calculating costs through the setting of standards and creation of allocation method. It also distinguished the managerial accountant from the engineers (who thought actual or historical costs necessary rather than estimates) and

thereby allowed them to seize control of costing within a manufacturing company for their profession, managerial accounting.

Similarly, Abbott distinguishes financial accounting as public accounting or auditing in his comparison of Scottish and English accountants to American accountants as he provides an illustration of financial accountants, during the same historical time period, competing against a rival profession. He makes note that various tax legislation "opened to the public accounting profession the enormous province of tax work" (p. 233). Tax work was "duly invaded and subdued [by the public accounting profession], not without substantial warfare with lawyers" (p. 233). As he described the clash between the legal profession and the public accountants, "It is with abstraction that law and accounting fought frontally over tax advice, the one because it writes the laws [lawyers], the other because it defines what the prescribed numbers mean [the accountants]" (p. 30). Taxation uses records of past transactions, the type of records typically used by auditors. This example of financial accountants subsuming tasks or work with a rival profession highlights their focus and use of past or historical records.

The accounting profession in both its iterations survived its competition from rival professions by redefining problems: managerial accountants through use of their future orientation for assisting managers for improving decisions about product costs; financial accountants through remaining focused on reporting and auditing historical data, whether financial (statements) or tax (returns). It might be objected that this distinction (use of historical data) applies to the so-called "compliance" function of tax accountants, preparation of returns or the negotiation with tax authorities regarding previously filed returns. Per the Public Company Accounting Oversight Board (PCAOB),

members of a registered audit firm are prohibited from engaging in tax work with an audit client, including any aspect of tax planning, as there is a concern of lack of independence on the part of the auditors (PCAOB, 2006). Auditors are prohibited from any professional type of association with those accountants who may have provided tax-planning advice to a company that is a client of the auditors, thus retaining the auditor's focus on historical data.

The examples of competition with rival professions (intercompetition) rather than within the common profession of accounting (intracompetition) offers perspective on the inherent difference in time frames for information needed within the financial area and the managerial area of the profession of accounting. Financial accountants report to decision makers what has happened, the past or historical perspective, whereas, managerial accountants report what could happen, a future perspective. Noted at the beginning of this study is the acknowledgement that the same goal of accounting is that of providing relevant information to decision makers. The examples provided in this section provide support for that common goal, while also supporting the second difference set forth in this study, difference between financial and managerial in the timing of information used.

### *Differences Associated with Reporting Standards*

The third distinction between financial and managerial accounting is stated in terms of contrasting reporting standards. Certification requirements illustrate these differences in reporting standards. The CPA designation serves as the primary certification for financial accountants and the Certified Management Accountant (CMA) for management accountants. The content specification outlines for the two provide the

information the candidate must master for successful completion of the examination for gaining certification. The AICPA (American Institute of Certified Public Accountants) and the surrogate for the State Boards of Accountancy, the National Association of State Boards of Accountancy (NASBA), control the certification process for becoming a CPA. The Institute of Management Accountants (IMA) controls the CMA certification process. Descriptions of these exams come from the 2011 CPA exam information and the 2010 CMA exam information.

The CPA exam consists of four parts: 1) auditing and attestation, 2) financial accounting and reporting, 3) regulation, and 4) business environment and concepts. In the introduction to the areas of auditing and accounting/reporting, standards and the setting of standards are the acknowledged basis for knowledge and understanding. Regulation "tests knowledge and understanding of ethics, professional and legal responsibilities, business law, and federal taxation" (AICPA, 2009 May, p. 21). The business environment area of the exam is the only area that does not refer to imposed standards, regulations, or laws.

In contrast, the CMA exam consists of two parts: 1) financial planning, performance and control and 2) financial decision-making. In the introduction to the two-part exam, the candidates "are assumed to have knowledge of the following: preparation of financial statements, business economics, time-value of money concepts, statistics and probability" (CMA, 2010, p. 5). Neither standards nor standard setters are mentioned but the "content specification outlines present the body of knowledge" for management accounting (p. 1). One may be reminded that in earlier times, cost accounting techniques, systems, methodologies, and measures were considered proprietary knowledge for the

company and not openly shared among those outside the organization. A review of the content specifications provided by the CMA examination's sponsors shows that multiple techniques, systems, methodologies, and measures exist within the several categories. The content specification listing provides evidence that a wide variety of tools exist for use by management accountants, and the expectation of a certified management accountant is that he or she has the knowledge and judgment to choose from this variety the tool appropriate in the circumstances. Due to the nature of management accounting and its emphasis on improving the decisions of company managers, management accountants employ this variety of tools across a broad spectrum of situations for considering what is possible, what could occur, within the organization.

In obvious contrast, the "toolbox" for financial accounting focuses on reviewing the adherence to reporting standards across a variety of audit or tax clients. The development of standards in the United States took on more meaning with the origination of laws governing securities and their exchange toward the end of the Great Depression. The AAPA promoted "the movement to establish uniform systems for municipal accounts" around 1904 and later worked with the Federal Trade Commission (FTC) to develop a uniform accounting system. What was provided the Federal Reserve Board (FRB), who took over the project from the FTC, was a version of a Price Waterhouse internal memo, published by the FRB in 1917. The document enhanced the accounting association claim as "the profession's national organization" (Previts & Merino, 1998, p. 232).

With the passage of the Securities and Exchange Commission (SEC) laws in 1933 and 1934, the AIA expanded their Committee on Accounting Principles (CAP) in 1938

for articulating consistent principles of practice (Previts & Merino, 1998, p. 277; Davidson & Anderson, 1987, p. 116). Authority and responsibility for accounting rules and regulations resided with the SEC; however, the SEC has generally allowed the private sector through the AICPA to promulgate standards for public accounting (Previts & Merino, 1998). Practitioners and the collegiate professoriate supported a joint publication in 1938 entitled A Statement of Accounting Principles (Zeff, 1966; Previts & Merino, 1998).

The AICPA used the CAP "to issue pronouncements in the name of the Institute on specific issues" (Davidson & Anderson, 1987, p. 116). Accounting Research Bulletins (ARBs) set forth standards that "rested on the general acceptability of the expressed opinion" (Davidson & Anderson, 1987, p. 116). In all, the CAP issued 51 ARBs during its existence from 1938 to 1959. In 1959, the AICPA created the Accounting Principles Board (APB) that would utilize research in developing its pronouncements of Opinions. During its 15 years of existence, the members of the Board issued 31 Opinions, those after 1965 bearing the pronouncement that financial statements carry a disclosure of any departures from the Opinions (Previts & Merino, 1998, p. 316). "But the AICPA had no effective sanctions to impose upon any accountant who failed to disclose departures from the generally accepted accounting principles (GAAP)" (p. 316). The research conducted to legitimize the Opinions was ignored, though in the Objectives of Financial Statements published in 1973 [also known as the Trueblood Report], similar to A Statement of Basic Accounting Theory (ASOBAT) that was published by the accounting academy in 1966, the American Accounting Association (AAA), directed providing more information to the users of accounting financial reports (Previts & Merino, 1998, pp. 322, 346; Davidson

& Anderson, 1987, p. 122). Regardless of whether financial accounting promulgations are based on principles or practices, financial accountants clearly operated with a mission to create standards with which those in practice are expected to comply.

In 1973 the AICPA passed its responsibility for formulating accounting principles (based upon practice) to the Financial Accounting Standards Board (FASB), an independent board recommended by the Wheat Commission (Davidson & Anderson, 1987, p. 122; Previts & Merino, 1998, p. 346). One of the first projects of the FASB was the development of a conceptual framework of accounting, "the Holy Grail of accounting concepts" (Davidson & Anderson, 1987, p. 123). The FASB issued Statement of Financial Concepts No. 1 in 1978 (FASB, 1978) with five more serially numbered statements following, culminating in December 1985. At this point, the project was described as "at best a limited success and possibly could even be viewed as a failure" (Davidson & Anderson, 1987, p. 123). Later, Concepts Statements 7 and 8 were published in 2008 and 2010, respectively. The statements (Statement 6 superseded Statement 3 and Statement 8 replaced Statements 1 and 2) define and describe objectives, qualitative characteristics located within a hierarchy, the elements of financial statements, and a criteria for recognition and measurement in financial reporting. The statements do not constitute GAAP but are used to "guide the Board in developing sound accounting principles and provide the Board and its constituents with an understanding of the appropriate content and inherent limitations of financial reporting" (FASB, 2010, website). The framework developed by these statements, however, provides accounting students a common introduction to financial accounting theory and practice through its adoption in most intermediate financial accounting texts for that purpose (Nikolai,

Bazley, & Jones, 2010; Kieso, Weygandt, & Warfield, 2011; Spiceland, Sepe, Nelson, & Tomassini, 2009).

The FASB also issues authoritative pronouncements, Financial Accounting Standards, known as Statements, among other publications (Davidson & Anderson, 1987; Previts & Merino, 1998). The need to establish a common language between those within the company who prepare the financial statements and those outside the company who use those same financial statements is an ongoing process and constitutes much of the work of the standards setters within the profession of financial accounting.

This same intercommunications process applies to the auditing portion of financial accounting. Statements on Auditing Standards and Attestation have been the responsibility of the AICPA since 1917 (Davidson & Anderson, 1987, p. 123). The Public Company Accounting Oversight Board ( PCAOB) formed in 2002 from legislation sponsored by Sarbanes and Oxley (SOX)," is a private-sector, nonprofit corporation . . . to oversee the auditors of public companies in order to protect the interests of investors and further the public interest in the preparation of informative, fair, and independent audit reports" (PCAOB, n.d.).

In addition to complying with the promulgated accounting standards, or reporting on compliance with the principles, a separate legal standard that helped form the profession of public accountancy in the U.S. must be met by those in the auditing profession, that of licensure as a CPA. Laws of the various states regulate the designation of CPA and therefore no uniform enforcement of compliance with standards can exist. The National Association of State Boards of Accountancy (NASBA), a self-governing organization, approves the Uniform Accountancy Act (UAA), though each state adopts

portions or the whole as it deems appropriate to its constituency (NASBA, 2009.). NASBA would appear to be seeking greater standardization of public accounting. Currently an initiative of NASBA seeks, "mobility, or the cross-border practice privilege" (NYSSCPA, 2010), through adoption of UAA Section 23 by the various state legislatures. CPA mobility rests upon the individual states enacting the three required criteria: 1) the 150-hour education requirement for licensure as a CPA; 2) eliminating temporary practice permits; and 3) granting automatic jurisdiction to the state board of public accountancy for visiting CPAs and the CPA firm employing them. If all 54 states and territories adopt the mobility initiative as described, the goal of uniformity for the CPA designation across the nation would exist as desired in 1897 by the AAPA, which desired a federal statute rather than accounting profession regulation by multiple state laws that interfered with interstate practice (Langenderfer, 1987). This interstate standardization of the auditing profession enables uniform compliance with auditing standards and offers opportunity for standardization in other areas.

Within the UAA educational requirements for the 150-hours, collegiate accounting and subject-matter content courses are itemized in context of accredited colleges and universities (UAA Rule 5-2; April 24, 2009). Though the AICPA develops examination materials, NASBA assists the various states in enforcing adherence to the rules and regulations contained in the UAA. Financial accountants, as represented by the AICPA, State Boards of Accountancy, and the NASBA, provide a plethora of examples of the third noted difference between financial and managerial accounting, that of reporting standards. Entry into the financial accounting profession via certification, practice within the profession, and ongoing recognition as a financial accounting

professional (CPA) falls within the purview of one of these groups for enforcing standards, standards of behavior, of reporting, and of compliance.

The adherence to standards of practice is of primary consideration for financial accountants in public practice, especially that of auditing. The profession of public accounting is supported by various organizations promulgating standards, working with regulatory bodies, and monitoring those who practice. The standards and laws thus enacted typically affect the work of all financial accountants because of the interaction of those preparing financial reports and those relying upon those same reports for making financial decisions. In contrast, any standards of practice issued by the IMA for its members tend to be descriptive rather than prescriptive and are used by an organization's managerial accountants for the use of decision makers within the organization. The decisions, for which both quantitative and qualitative information is gathered and developed, cover a wide range of topics and concerns.

In considering the research question, does the manner of holding one's religious beliefs make a difference in an undergraduate accounting major's preference for financial or managerial accounting, the literature reviewed illustrates a long history of financial and managerial activity with three distinctive differences among the two areas. The next section explores the literature on the role of religion as it relates to undergraduate students choosing between financial and managerial accounting.

## The Role of Religion as a Topic in Accounting Literature

Religion is not a high profile topic in accounting literature as noted from literature searches through Business Source Premier, Google Scholar, and other incidental searches in accounting journals. From over 200 potential articles, using search terms of religion,

religiosity, accounting, and accountancy, 27 articles emerged with an accounting basis that integrated religion as a prime focus or component of the study (see Table 2).

Generally, accounting looks to "utility, not morals or aesthetics" (Sorter, Ingberman, & Maximon, 1990, p.9). For example, in their opening statement setting forth standards for corporate accounting prepared for the American Accounting Association (AAA), Paton and Littleton note that, "Accounting standards should be systematic and coherent, impartial and impersonal, and in harmony with observable, objective conditions" (1940, p. 1). Objectivity is a hallmark of the accounting profession as set forth in ethics codes (AICPA, 2008; IMA, 2004).

This perspective of accounting as objective may contribute to a paucity of scholarly accounting literature in which religion, belief in a deity or god implying the supernatural, is a topic or lens for studying accounting and its role in society. The 27 articles are divided into two areas. 14 of the articles appear within the first section of Table 2, and were gathered from a variety of accounting sources. The remaining 13 articles listed on the second part of Table 2 resulted from solicitation by one accounting journal, Accounting, Auditing & Accountability Journal (AAAJ), specifically for papers that addressed accounting and religion (McPhail, Gorringe, & Gray, 2004). Overall, Table 2 primarily highlights the cultural perspective of the authors and publishers.

Of the three accounting articles/papers (White, 2004; Zaid, 2004; & Lehman, 2004) published in the United States, two of the three authors, Zaid and Lehman, worked outside of the U. S. Lehman, from Australia, uses ideas from a Canadian philosopher, Charles Taylor, to address issues of social theory relating accounting and religion (2004). Zaid (2004), from Bahrain, addresses accounting history as it developed early in Muslim

society (624 A.D. or before) to calculate and record transactions involving religious obligations. Only one author/presenter, White, both worked within the U. S. and was published in a U. S. venue, that of a religious-based organization. A few U. S. accounting professors/professionals addressing religion or religious factors as part of an accounting study were accepted for publication in Europe or posted to a research network online (Emerson, Conroy, & Stanley, 2007; Keller, Smith, & Smith, 2007; Peace, 2006; Flesher & Flesher, 1979; Riahi-Belkaoui, 2005).

One journal, Accounting, Auditing & Accountability Journal published in the U. K., dedicated an entire issue to accounting and theology, Volume 17, Issue 3 in June 2004, but content spilled over into a second issue in 2005, volume 18, Issue 2 (see Table 2 page 2). The guest editors of these issues note

> Over recent decades critical and interdisciplinary accounting research have made significant advances in challenging the predominately technical and a-political view of accounting (Cooper and Shearer, 1984; Cooper and Hooper, 1987; Loft, 1986; Tinker, 1991). Considerable insights have been gained from studying accounting in the social and organizational settings in which it operates (Burchell et al., 1985). However, by far the majority of this genre of research has been undertaken from an irreligious, secular or even atheistic perspective (although Schweiker, 1993 and Shearer, 2002 represent two notable exceptions). Even the small traunch of literature that has examined the function of accounting within religious organizations has adopted a more sociological than theological slant. This, we would argue, has tended to (re-)enforce a secular view of accounting (see for example, Booth, 1993; Laughlin, 1988; Parker, 2001, 2002).

> It was observations such as these that led us to consider whether the accounting academe has neglected to take theology seriously as a source for interdisciplinary perspectives on accounting. The objective of this special issue was therefore to explore whether a theological take on accounting was possible and if so, to begin to investigate the insights that might be gained from a Judeo-Christian reading of accounting in particular (see Oslington, 2000). In the words of Chief Rabbi Jonathan Sacks (2000), we wanted, "to initiate a dialogue between immediacy and eternity."

The dialogue began with Laughlin's (1988) "seminal study of the Church of England" as a sacred-secular divide was "one of the first studies of accounting within a religious context" providing a theoretical model setting "the standard perspective for many subsequent analyses (Booth, 1993; Lightbody, 2000; Parker, 2001, 2002)" (McPhail, Gorringe, & Gray, 2005). This dialogue between accounting and religion, a dialectic relationship, offers the potential for more emphasis/studies on understanding the role of religion in accounting education and practice and on how accounting for activity within the practice of religion benefits both spheres.

In the 12 accounting-based articles published in journals other than Accounting, Auditing and Accountability Journal in which religion was a factor, religious beliefs are generally shown to make difference. In the articles testing ethical stances, religious beliefs show a positive difference in ethical decision-making (Emerson, Conroy, & Stanley, 2007; Keller, Smith, & Smith, 2007; Riahi-Belkaoui, 2004) (see Table 3). In Adnan and Sulaiman's article (2007) concerning the creation of budgetary slack, an

Table 2

Treatment and Inclusion of Religion as a Topic in Accounting Literature

| Author(s) and country(s) | Date | Title | Publication - U.S.-based | Publisher |
|---|---|---|---|---|
| White, Lynn<br>United States | 2004 | The Influence of Religion on the Globalization of Accounting Standards | Christian Business Faculty Assn. Annual Mtg | CBFA; Mt Vernon, OH, Academic nonprofit (nfp) |
| Zaid, Omar A.<br>Bahrain | 2004 | Accounting Systems and Recording Procedures in the Early Islamic State | Accounting Historians Journal | Academy of Acctg Historians, Univ-Alabama; Academic nfp |
| Lehman, Glen<br>Australia | 2004 | Accounting, Accountability, and Religion Charles Taylor's Catholic Modernity and the Malaise of a Disenchanted World | Accounting and the Public Interest | Amer. Acctg Assoc.-Public Interest section, Sarasota, FL, Academic nonprofit org |
| Riahi-Belkaoui, Ahmed<br>United States | 2004 | Law, Religiosity and Earnings Opacity Internationally | Social Sciences Research Network (SSRN) | Social Science Electronic Pub , Inc , online, Academic network |
| Emerson, Tisha, L N , Conroy, Stephen J. & Stanley, Charles W<br>United States | 2007 | Ethical Attitudes of Accountants Recent Evidence from a Practitioners' Survey | Journal of Business Ethics | Springer, Berlin, Germany & The Netherlands, Public |
| Keller, A Craig, Smith, Katherine T., & Smith, L. Murphy<br>United States | 2007 | Do Gender, Educational Level, Religiosity, and Work Experience Affect the Ethical Decision-Making of U S Accountants? | Critical Perspectives on Accounting | Elsevier; Amsterdam, Public |
| Peace, R<br>United States | 2006 | Accountants and a Religious Covenant with the Public | Critical Perspectives on Accounting | Elsevier, Amsterdam, Public |
| Flesher, T K & Flesher, D L.<br>United States | 1979 | Managerial Accounting in an Early 19th Century German-American Religious Commune | Accounting, Organizations and Society | Elsevier; Amsterdam, Public |
| Quattrone, Paolo<br>United Kingdom | 2004 | Accounting for God Accounting and Accountability Practices in the Society of Jesus (Italy, XVI-XVII centuries) | Accounting, Organizations and Society | Elsevier, Amsterdam, Public |
| Adnan, S. M & Sulaiman, M<br>Malaysia | 2007 | Organizational, Cultural and Religious Factors of Budgetary Slack Creation Empirical Evidence from Malaysia | International Review of Business Research Papers | World Business Institute, Melbourne, AU, Public |
| Hamid, Shaari, Craig, Russell, & Clarke, Frank<br>Malaysia, Australia | 1993 | Religion: A Confounding Cultural Element in the International Harmonization of Accounting? | ABACUS | Wiley-Blackwell [Blackwell at Oxford 1897, acquired by Wiley 2007] NJ, Public |
| Baydoun, Nabil & Willett, Roger<br>Dubai, Australia | 2000 | Islamic Corporate Reports | ABACUS | Wiley-Blackwell |
| Gambling, T. E. & Karim, R A A<br>United Kingdom | 1986 | Islam and 'Social Accounting' | Journal of Business Finance & Accounting | Wiley-Blackwell |

| | | | | |
|---|---|---|---|---|
| Lister, Roger J<br>United Kingdom | 1988 | Interest, Morality, Orthodoxy, Gambling and Karim | Journal of Business Finance & Accounting | Wiley-Blackwell |
| Accounting, Auditing and Accountability Journal devoted full issues to religion in accounting articles in 2004 [Emerald, Bingley, UK: Private Co.] | | | | |
| Laughlin, Richard C<br>United Kingdom | 1988 | Accounting in its Social Context An Analysis of the Accounting Systems of the Church of England | | |
| Jacobs, K & Walker, S<br>United Kingdom | 2004 | Accounting and Accountability in the Iona Community | | |
| McPhail, Ken, Gorringe, Tim, Gray, Rob<br>United Kingdom | 2004 | Accounting and Theology, an Introduction, Initiating a Dialogue between Immediacy and Eternity | | |
| McKernan, John Francis, MacLullich, Katarzyna Kosmala<br>United Kingdom | 2004 | Accounting, Love, and Justice | | |
| Galihofer, Sonja; Haslam, Jim<br>United Kingdom | 2004 | Accounting and Liberation Theology Some Insights for the Project of Emancipatory Accounting | | |
| Kreander, Nikias; McPhail, Ken, Molyneaux, David<br>United Kingdom | 2004 | God's Fund Managers A Critical Study of Stock Market Investment Practices of the Church of England and UK Methodists | | |
| Tinker, Tony<br>United States, United Kingdom, & Australia | 2004 | The Enlightenment and Its Discontents Antinomies of Christianity, Islam, and the Calculating Sciences | | |
| Davison, Jane<br>United Kingdom | 2004 | Sacred Vestiges in Financial Reporting Mythical Readings Guided by Mircea Eliade | | |
| McPhail, Ken; Gorringe, Tim, Gray, Rob<br>United Kingdom | 2005 | Crossing the Great Divide Critiquing the Sacred Secular Dichotomy in Accounting Research | | |
| Jacobs, Kerry<br>United Kingdom | 2005 | The Sacred and the Secular Examining the Role of Accounting in the Religious Context | | |
| Irvine, Helen<br>Australia | 2005 | Balancing Money and Mission in a Local Church Budget | | |
| Hardy, Les; Ballis, Harry<br>Australia | 2005 | Does One Size Fit All? The Sacred and Secular Divide Revisited with Insights from Niebuhr's Typology of Social Action | | |
| Berry, Anthony J<br>United Kingdom | 2005 | Accountability and Control in a Cat's Cradle | | |

ethical issue, no discernible results were found between religiousness and religious-mindedness using Geertz's distinction of such (1968).

The article by Peace, of the Department of Accountancy of North Carolina State University, published by Elsevier, provides reasons that favor religious covenants (moral duty to public interest and trust through professionalism) over business contracts (enforceable requirement) in mandatory relationships between public accountants and their clients (Peace, 2006).

Descriptions of the process to harmonize international financial reporting standards reveal the religio-cultural differences between the Judaic-Christian traditions that resulted in Western capitalism and the Islamic system of the "unity of God" (White, 2004, p.8) and the impact of those differences in the process of establishing international accounting standards (White, 2004; Hamid, Craig & Clarke, 1993). Four of the articles addressed the role of Islam within the practice of accounting (Zaid, 2004; Baydoun & Willett, 2000; Gambling & Karim, 1986; Lister, 1988). Within 11 of the 14 articles noted, seven of those featured the nature of Islamic religious beliefs within the practice of financial and managerial accounting (participants in the budgetary slack test were Islamic), further illustrating the difference between Western capitalism, often associated with the Protestant ethic, and Islamic adherence to Allah's wholeness of the activities of life.

Of the remaining three articles, two paired accounting with theology (Lehman, 2004: Quattrone, 2004) in a manner similar to those published in AAAJ in 2004 as noted before and are not further discussed. The third article was a historical study of a sophisticated managerial accounting system once used by a communal religious group

within the State of Indiana (Flesher & Flesher, 1979). The Harmonists, members of the Harmony Society, also known as Rappites (named after founder George Rapp), flourished during the ten years they lived and worked in Indiana. They lived and worked

Table 3

Empirical Studies of Ethics in Accounting using Religion as a Factor

| Authors | Subject | Dependent Variable | Independent Variables | Results / Conclusion |
|---|---|---|---|---|
| Riahi-Belkaoui | Financial reporting - practitioners | Earnings opacity | • Degree of law enforcement & Church attendance<br>• Belief in heaven | • Fear of the law & act of belonging to a religion have deterrent effect on earning opacity internationally<br>• No impact on earnings opacity |
| Emerson, Conroy, & Stanley | Accounting practitioners | Degree of acceptability of ethically sensitive situation | • Gender<br>• Age<br>• Race<br>• Religiosity | • Women less accepting<br>• Older in age less accepting<br>• Race-no difference<br>• Pray weekly (church attendance, religious affiliation, and self-reported religious fervor) less accepting |
| Keller, Smith, & Smith | Undergrads & graduate accounting students | Basis of ethical stance | • Gender<br>• Religious ethic<br>• Student status<br>• Work experience | • No difference<br>• Strongest influence on ethical stance<br>• No difference<br>• No difference |
| Adnan & Sulaiman | Budgetary slack - practitioners | Creation of budgetary slack | • Control style<br>• Participation<br>• Detection<br>• Individualism<br>• Religious affiliation | • No results<br>• No results<br>• No results<br>• No results<br>• No results |

according to a New Testament social order found in Acts 2:44, 45 and Acts 4:32, 34, 35 in which communism was described as "And the multitude of them that believed were of one heart and of one soul: neither said any of them that ought of the things which he possessed were his own; but they had all things common" (4:32) (Pitzer & Elliott, 1979, p. 230). The Society was a "conglomerate which necessitated a more sophisticated accounting system" (Flesher & Flesher, 1979, p. 304). The internal reporting system for

their large-scale manufacturing was meticulous and "many invoices exist to this day for assets purchased (which are now in Society museums)" (Flesher & Flesher, 1978, p. 299).

Thus, the topic of religion and/or theology within accounting research is limited, especially that originating in the U. S. None of the identified research offered insight or information for differentiating between financial and managerial as to the manner of holding one's religious beliefs, a subset topic of this paper. The underlying construct for this paper is that of Berger and Luckmann's "treatise in the sociology of knowledge," describing one's way of knowing through personal experiences, social relationships, and religious perspective (1966). Accounting majors in the United States would have little to no exposure of an integration of accounting and religion if their U. S. accounting faculty primarily used the accounting literature published within the U. S. One reason for this research study is to introduce and/or identify the role of religion in preferences of U. S. accounting majors for financial or managerial accounting.

The next section examines the development of preferences based upon dialectical relationships of personal, social, and religious interactions using the sociological constructs of Berger and Luckmann (1966).

## Development of Preferences

Peter Berger and Thomas Luckmann (1966) state in their text, *The Social Construction of Reality*, that "the sociology of knowledge understands human reality as socially constructed reality" (p. 189) and that "a sociology of knowledge without a sociology of religion is impossible" (p. 185). The basic premise of their construct is that everyday life forms one's concept of reality. This basic reality of everyday life holds within it other realities such as "aesthetics and religious experience" (p. 25).

Undergraduate students are confronted with at least two new realities when they become majors in accounting, that of the institution of higher education and that of the institution of the profession of accounting. These neophytes enter the new worlds of college and the accounting profession with "a reflected identity" from their earlier worlds, ones formed by attitudes and roles of those who are considered significant others (p. 132). Because "institutions exist as external reality," the students have to experience interaction with the institutional realities to learn about them (p. 60). This learning is dialectical, one in which the students and the institutions interact with each another. "The product acts back upon the producer" (p. 61). The students and the institutions are both products and producers. Studies by Smart, Feldman, and Ethington show that "Academic environments and their respective faculties have clear and powerful influences on what students do and do not learn over the course of their undergraduate education" (2000, p. 232 ). Such studies have shown that a dynamic socialization process may overcome a personality dynamic through the socialization process within an academic environment. Not only will students with a personality congruent with an academic environment flourish within that academic environment but that students with a personality incongruent with an academic environment will change to a personality comparable to a congruent personality for that academic environment because of the stronger socialization process within an academic environment (2000, p. 217).

For this study, two conversations are involved. The first conversation or interaction is between the profession of accounting, surrogate for the accounting major, and the accounting professoriate, constructors of the academic accounting curriculum as surrogate for the collegiate institution. The history of that interaction is significant for the

second conversation or interaction, that between the accounting majors themselves and the institution of the profession of accounting as students seek to find their role within that profession, the focus of this study.

Per the human construction of reality put forth by Berger and Luckmann, institutions may be considered as deliberately constructed social environments through the shared actions of a group of people for the purpose of creating "a culture and social order" (1966, p. 48).

> It is impossible to understand an institution adequately without an understanding of the historical process in which it was produced. Institutions also, by the very fact of their existence, control human conduct by setting up predefined patterns of conduct, which channel it in one direction as against the many other directions that would theoretically be possible (pp. 54-55).

As Berger and Luckmann note, "only with the appearance of a new generation can one properly speak of a social world" (p. 61). The history passed to the new generations does not hold "biographical memory" as it did for those involved in the origins of the profession; the history, now tradition, is subject to interpretation (p. 61). Undergraduate accounting majors learn this tradition, these conventions for entry into the profession of accounting, from interactions with accounting faculty and practitioners. A short review of the history of collegiate accounting education in the U.S. follows. This review underscores Glen Van Wyhe's choice of a title for his text, *The Struggle for Status A History of Accounting Education* (1994).

*Beginnings of Collegiate Accounting*

Charles E. Sprague, recognized as "the first modern American accounting theorist" (Zeff, 1987, p. 68), wrote a series of papers in 1880 entitled, "Algebra of Accounts" which connected accounting to mathematics and economics and presented the accounting equation of "Assets = Liabilities + Proprietorship" (Previts & Merino, 1998, p. 154, 156). His 1907 Philosophy of Accounts, formed from his lectures as a professor at New York University (NYU), successfully presented "an integrated explanation of accounting" (Langenderfer, 1987, p. 308). Sprague is credited with moving "accounting from the level of bookkeeping rules to the plane of theory and explanation" (Zeff, 1987, p. 70). He was an active member of the Institute of Accounts of New York (The Institute), formed in 1882, the "earliest recognized professional accounting organization in the United States" (Previts & Merino, 1998, p. 135), serving as its president at one point during the 1880s and 1890s (Zeff, 1987, p. 70). The Institute, an umbrella group, served those engaged in all types of accounting.

"Since the first formal organization of accountants as a professional body approximately 100 years ago, its leaders have thirsted for one of the trappings of a true profession, namely, professional schools" (Langenderfer, 1987, p. 304). The AAPA (American Association of Public Accountants), formed in 1887, worked for a school for accounting and business students through the New York State's Board of Regents during 1892. With the request for only "a professional school for accountants" (1987, p. 305), a two-year provisional charter was granted. The AAPA underwrote the cost of the school for the two years through supplying books and a building. The course of instruction included "correct and practical instruction in the knowledge and science of modern

accountancy and finance (Slocum and Roberts 1980: 65)" (Previts & Merino, 1952, pp. 151-152). The school continued only for the original time granted by the charter due to lack of enrollment, limited as it was to those college or university graduates of schools "registered by the Regents of the University of the State of New York" (Previts & Merino, 1998, p. 152; Langenderfer, 1987; Van Wyhe, 1994). The leadership of AAPA "settled for legal recognition of the profession via the CPA designation" after this (Langenderfer, p. 305).

The first collegiate school of business, Wharton School of the University of Pennsylvania began in 1881, offering in 1883 "the initial offering of what would be a sustained accounting course series at the collegiate level" (Previts & Merino, 1998, p. 151). While other business schools began within universities, New York University's business school founded in 1900 carried the name "School of Commerce, Accounts & Finance, with Charles Waldo Haskins . . . serving as dean and professor of accounting history" (Langenderfer, 1987, p. 305). Haskins, as president of the New York State Society of Certified Public Accountants, had been authorized to consult with various universities for the establishment of "university training in accountancy" in 1899 (Van Wyhe, 1994, p. 15).

*Approach Liberal Arts v Specialized Accounting Topics*

Soon after the establishment of the business schools in the late 1880s, a controversy commenced regarding the appropriate educational philosophy for professional accounting education. This basic difference was one of liberal arts versus teaching professional subjects for the passing of the CPA exam (Previts & Merino, 1998, p. 200). In the beginning of collegiate education, practitioners desired emphasizing "a

wide range of knowledge and minds trained to think analytically and constructively. They supported "a broad program emphasizing theory and philosophy" (Previts & Merino, 1998, p. 200). The teaching of courses in accounting at Wharton employed a conceptual approach, account analysis, differentiating it from the popular bookkeeping methods taught in proprietary schools (Van Wyhe, 1994, p. 13). However, the program at New York University (NYU) began with "the purpose of preparing men for the profession of accounting" (p. 16), adopting a curriculum with "subject matter of the New York CPA exam [as] the subject matter of the curriculum at NYU" (Van Wyhe, 1994, p. 16). Ironically, and perhaps, unfortunately, Sprague, whose earliest theoretical writing helped shape accounting thinking, was a professor at NYU, and taught his course, Philosophy of Accounts (Van Wyhe, 1994, p. 16), where his approach was among the minority. Most of the NYU professors did not agree with a theoretical or philosophical approach and by 1912, when Sprague died, "the average accounting instructor was a former practitioner who was not very skilled and not theoretically oriented" (Van Wyhe, 1994, p. 17). So it was the university instructors who gravitated to a "procedural orientation" (Previts & Merino, 1998, p. 200).

In 1910, only New York University (NYU) offered a master's degree in accounting and, it along with Wharton, were the only schools offering baccalaureate degrees in accounting though 52 colleges offered accounting courses (Van Wyhe, 1994, p. 22). By 1926, the numbers increased to 336 colleges offering accounting courses, 60 schools having the baccalaureate degree and 30 universities with master's degrees (Van Wyhe, p. 22).

*The Professoriate Organization and Credential*

The influence of the practitioners of public accountants lessened somewhat when accounting faculty organized as the American Association of University Instructors of Accounting (AAUIA) in 1916, looking for acceptance in the academic academy as more important than the practice of accounting (Zeff, 1966; Previts & Merino, 1998; VanWyhe, 1994). The Accounting Review, the official quarterly publication of the AAUIA, appeared in March 1926, after much debate and work (Zeff, 1966). The academicians began to emphasize both teaching and research with an outlet for sharing among colleagues (Langenderfer, 1987; Zeff, 1966). As accounting academicians drew upon the field of economics and began theory development for accounting principles, they gained "more respectability and more justification for accounting as an academic discipline" (Langenderfer, 1987, p. 308). Scholarly work on the "theoretical foundations for accounting practice" (Langenderfer, 1987, p. 308) captured the attention of the accounting instructors but with the onslaught of the Depression, priorities changed until about 1935 when the expanded production of research recommenced under the new name of the academy, the American Accounting Association (AAA) (Zeff, 1966). Membership opened "to all interested persons" (Zeff, 1966, p. 38). Most of the research focused upon the development of a body of theoretical underpinnings for the widespread practice of accounting (Zeff, 1966). Comparatively, the accounting professoriate searched for a constitution of the type that formed the framework of the legal profession or the science that directed the medical profession. The theorists desired a normative approach; the practitioners worked from a positive basis (Previts & Merino, 1998).

During the 1950's, when "undergraduate accounting courses leading to a major in accounting were firmly established" (Langenderfer, p. 308), and states began to adopt the requirement of an undergraduate degree for taking the CPA exam, the AICPA and NASBA pushed legislation for a policy "established by other professions, namely, that there should be only one class of professional accountants for which all members would meet the same educational, testing and experience qualifications and would be subject to the same ethical standards of conduct" (Langenderfer, p. 310). This proposal was not without some merit in that "higher education in accounting had been directed almost exclusively to the needs of public accounting" (Van Wyhe, 1994, p. 43). "The most notable aspect of accounting education in the United States up to the early 1960s was the extent to which it was fostered and nurtured by the practitioner arm of the accounting profession through its voluntary national organization" (Langenderfer, 1987, p. 312). Although reference to cost accounts in accounting texts in the colleges began early in the 1900s, one is reminded that as late as the 1950s Horn noted "it is true that our textbooks touch upon the subject [managerial approach to accounting]" (1951, p. 308), but that "any instructor who undertakes a program of teaching administrative or managerial accounting will find no ready made text" (p. 311).

This desire for one class of professional accountants met another challenge when the AAA proclaimed in 1951 that, " In adopting the term "professional accounting" the [Standard Rating] Committee intends to use the expression in the broadest sense rather than the narrowly conceived and limited sense having applicability only to professional public practice" (Van Wyhe, 1994, p. 43). The field of managerial accounting became a cause for dividing accounting education into tracks (Van Wyhe, 1994, p. 43). A year

later, 1961, a committee of the AAA investigated "the distinction between concepts underlying financial reports for management decision making and control and those used for external public reporting, " reporting in 1962 its principal conclusions as

> (1) the concepts underlying internal management reporting differ in several important respects from those of external public reporting; (2) the reason for these differences is that the reporting objectives in the two areas are not the same; (3) there is justification for attempting to formulate a separate body of concepts applicable to internal management reporting (AAA, 1962, p. 523).

The Committee used statements from its own organization, the AICPA, and the National Association of Accountants (NAA, formerly NACA, National Association of Cost Accountants) along with interviews of practitioners and faculty in formulating this conclusion (AAA, 1962). Little impact resulted in accounting curricula in light of these findings, possibly because CPA-oriented faculty taught the undergraduate courses in cost management, perpetuating the status quo.

*Management Accounting Finds a Place in the Accounting Curriculum*

Post-World War II American businesses needed accountants, accountants who understood management and economics (Langenderfer, 1987, p. 310). The practice of accounting within the businesses changed from emphasizing independence from management while delivering objective information (Vatter, 1950, p. 8) to embracing management, though with objective information.

In the mid-1950s those in public accounting searched for "lucrative new opportunities" in order to survive, as audits did not provide sufficient income. Business consulting entered the sphere of public accounting (Van Wyhe, 1994, p. 54; Previts &

Merino, 1998). Public accounting had embraced management/cost accounting during post-World War II years when more sophisticated cost accounting techniques and application drew public accountants into the cost accounting realm for audits of governmental contracts (Previts & Merino, 1998, p. 253). These techniques developed from NACA's development of cost information for federal government departments during the 1920s, taking on more importance after the crash of 1929 for cost analysis, flexible budgets, and relevant costs among other aspects of costing systems (p. 252). Management accounting found its place in the accounting curriculum without opposition of the AICPA.

During this same time period, leaders in the AICPA began looking for postgraduate education in accounting and business for the CPA per recommendation of their 1952 Commission on Standards of Education and Experience (Langenderfer, 1987). The first graduate school of public accounting was established at Rutgers University in 1955, "specifically designed for liberal arts graduates who wished to obtain CPA certificates" (p. 310). The degree was a master of business administration (MBA). According to Langenderfer, ". . . the Rutgers program was not copied by other universities to any significant extent, so the move toward graduate education in accounting was not sustained at this time" (p. 310). The MBA program that developed during the 1960s had a general management focus, typically requiring two years of study. This business-oriented MBA program generated interest such that "the base of influence shifted toward the general business school faculty" and away from accounting education which had been "the dominant curriculum in the business school" (p. 311). The MBA became the major degree program in business schools (p. 311).

*A Change in Credentials for Accounting Faculty*

In 1967, AACSB [since 2000 The Association to Advance Collegiate Schools of Business] "increased the terminal degree requirements for accredited accounting faculty from a master's-CPA" to a doctorate, beginning in 1969 (Langenderfer, 1987, p. 312). Research became an essential hurdle for those desiring tenure and promotion within the universities (Langenderfer, 1987). Previts & Merino (1998) describe this change of requiring accounting faculty to earn a doctoral degree as having no immediate impact "on the close relationship between academia and practice, but it did have a significant impact on the direction of accounting research" (p. 343). Accounting researchers favored quantitative management topics. This choice of direction for research alienated the practitioners, but this "schism did not appear to affect accounting curricula" (p.343). "Accounting curricula have been exceedingly slow to change despite the constant demands for reform" (p. 343). Robert Sterling gives an example of a fellow accounting educator who knowingly taught a concept based upon practice that this colleague's own research did not support, though Sterling does not provide the topic of the research or the class topic during his visit. The colleague noted upon being questioned about this, that he would have taught the subject differently if the class was in the doctoral program rather than one in which he was preparing students for practice. For Sterling this was a vivid example of what he had noticed as a lack of concern among his colleagues for the differences between textbook information and research findings (1973, pp.44-45). Topics in which the research and teaching were different included price-level changes, especially during times of inflation, use of current value for marketable securities rather than cost or lower-than-cost, and valuing inventories at lower of cost or market when the market is

below cost or simply valuing inventory at market (Sterling, 1973; Previts & Merino, 1998; Van Wyhe, 1994).

The popularity of the MBA, initially recommended as building upon an undergraduate liberal arts program, enhanced business as a discipline and conferred on the administration and faculty of graduate business programs greater authority (Langenderfer, 1987). Undergraduate business education suffered, especially accounting, as faculty and other resources flowed to the graduate schools in the 1960s and 1970s (Van Wyhe, 1994; Langenderfer, 1987).

Reacting to the loss of prestige and control over resources caused by the popularity of the MBA programs, accountants moved to establish their own professional schools. AICPA leadership initiated an accreditation plan "for Programs and Schools of Professional Accounting" in 1974 (Van Wyhe, 1994, p. 164; Langenderfer, 1987). The first of these professional schools formed in 1973, followed by another in 1975 with two more in 1976. Leadership through the Federation of Schools of Accountancy (FSA), formed in 1977 by academicians and representatives of accounting organizations (Van Wyhe, p. 171) provided support for this movement. However, action taken in 1978 by the AACSB, the leading collegiate accrediting association for schools and programs in business, to begin accrediting accounting programs separately, agreed "to call only five-year programs 'professional accounting programs'" (Van Wyhe, p. 177). When the AACSB stepped in ahead of the AICPA as the accrediting body, the AICPA abandoned not only its accreditation plan but also support for the schools of accounting movement (p. 178).

*Control of the Accounting Curriculum*

Approximately a decade later at a time of dissatisfaction with accounting education, the then Big Eight CPA firms (Arthur Andersen, Arthur Young, Coopers Lybrand, Deloitte Haskins, Ernst & Ernst, Peat Marwick, Price Waterhouse, and Touche Ross) published in 1989 a "white paper" presenting the large public accounting firms' perspective of "capabilities for success in public accounting" (Van Wyhe, p. 210). The "white paper" included the offer of one-half million dollars from each of the eight firms in support of changes to the educational programs at that time. The Accounting Education Change Committee (AECC), formed by the authorization of the AAA in 1989, awarded grants of almost one million dollars to five schools in its first year of existence, 1990 (Van Wyhe, p. 214). Kansas State University, as one example, used the grant funds to fashion and build a 150-hour program with "a career-neutral accounting curriculum" for the undergraduate and four "specialization tracks within its master of accountancy program: financial accounting and auditing, management accounting/ controllership, taxation, and enterprise information systems" (Deines & Valentine, 2007).

The first Position Statement, "Objectives of Education for Accountants," appeared in 1990, a product of the AECC (AECC & AAA, 1996). Position Statement (PS) No. One described the desired capabilities based upon the status of a professional accountant as, "Accounting programs should prepare students to become professional accountants, not to be professional accountants at the time of entry to the profession" and "graduates should be taught how to learn" (AECC & AAA, 1996, p. PS#1-1). The second Position Statement (PS), 1992 addressed "the importance of the first course in accounting" (AECC & AAA, 1996, p. PS#2-1). The first accounting course should be

taught by qualified, committed instructors for introducing students to the profession of accounting.

In the same year the White Paper was issued, 1989, the membership of the AICPA voted to require 150-semester credit hours as a minimum threshold for CPA examination candidates and for attaining membership in the organization through use of the Uniform Accountancy Act (UAA) (Van Wyhe, 1994; Reckers, 2006). Because of the state-by-state legal requirement, the 150-hour requirement did not apply uniformly across the nation because not all states adopted all parts of the Act. State requirements differed on the composition of the hours. Different curricular approaches managed the 150-hour requirement of public accounting. For example, students enrolled in undergraduate liberal arts colleges often accumulate the 150 credit hours without seeking a graduate degree. A specific example is that of The School of Accountancy at the University of Missouri—Columbia, host of "the first national conference on 'professionalization of the accountancy curriculum' " (Van Wyhe, 1994, p. 170) and is closely allied with public accounting. Its 150-hour curriculum merged the Bachelor of Science and Masters of Accountancy degree programs. This model results in dual conferring of the bachelor's degree upon completion of the master's (UM-C, 2006).

A look at the FSA's website does not indicate that member schools are independent, freestanding schools, as some schools are listed as programs within schools of business (thefsa.org). During 1979, the same year Florida legislated a five-year requirement for licensure as a CPA, NASBA severed its longstanding relationship with the AICPA, preferring to take control over the CPA exam as it built its own resource base (Flesher, 2007).

Table 4

The Relationship between the AICPA and State Boards of Accountancy

| AICPA | NASBA | State Boards of Accountancy |
|---|---|---|
| | CPA exam enrollment | |
| Writes CPA exam | CPA exam management | |
| Grades CPA exam ↔ | Sends exam results to examinees | |
| | Writes Model CPA UAA ↔ | Legislature enacts CPA legislation |
| | Maintains database of CPAs ↔ | Enforces CPA laws |
| | Authorizes material for CPA CPE ↔ [CPE-continuing professional education] | Enforces CPA CPE hours |

*The Role of State-by-State Legislation and the Accounting Curriculum*

NASBA worked through the 1980s and 1990s to strengthen its financial base and independence from the AICPA, which controlled the CPA exam. The AICPA implemented several changes to the exam during these two decades: shortening the testing time period from two and one-half days to two days, changing to a nondisclosed exam, and employing a firm to create a computerized exam (Flesher, 2007). In 1994 NASBA formed an internal committee to gain more control over the exam as it claimed "that many of the substantive changes to the Exam were designed and implemented with little or no input from state boards" (Flesher, 2007, p. 125) and such proactive behavior seemed to provide the organization equal footing with the AICPA (p. 137). NASBA expanded its base of work in accounting such that its members work with other financial accounting organizations, not only in the U.S. but internationally, having mutual recognition agreements with accountancy bodies in other nations for reciprocity examinations (p. 153).

In 2004 NASBA officers met with members of the PCAOB (Public Company Accounting Oversight Board) for strengthening regulation of public accounting. NASBA members also meet with the SEC (Securities Exchange Commission) and "monitors and

debates proposals released by the IFAC [International Federation of Accountants], AICPA, FASB, PCAOB, DOL [Department of Labor], and other groups" (Flesher, 2007, p. 161).

In keeping with NASBA's mandate as it understands its role to serve the public interest through serving the state boards of accountancy, NASBA assumed full responsibility for drafting the UAA rules in 2003, work shared with the AICPA for four editions (Flesher, 2007, p. 172). Streamlined mobility, a goal for CPAs, requires adoption of Section 23 of the UAA by each state. Section 23 specifies three criteria: 1) 150-hour education requirement to become a CPA; 2) no issuance of temporary permits by a state; 3) automatic jurisdiction given to the state in which the work is done, virtually or physically, by visiting CPAs and the CPA firm employing them. This eliminates the need for CPAs to know each state's requirements if a client operates in different states (nysscpa, 2010). NASBA has developed a database for tracking every CPA in the U. S. to provide a means of enforcing these requirements rather than asking each state to track possible violations.

The move to obtain more uniformity in the practice of public accounting affected accounting education during 2005 through 2007 when NASBA proposed specific changes to the accounting curriculum as part of the 150-hour requirement (Flesher, 2007, p. 182). As the accounting curriculum in most colleges and universities is controlled by the accounting professoriate, the academy reacted negatively to the proposal and NASBA tabled the issue while being pleased that the academicians "were made aware of NASBA's significant role in the accountancy licensure process. . . . [and] there was wide recognition that state boards had the power to do what NASBA suggested" (p. 183). The

curriculum topic resurfaced in a 2008 NASBA proposal, containing the complaint that "NASBA recently adopted thoroughly vetted model rules suggesting a consistent approach to these educational requirements, but implementation could be slowed by entrenched, diverse programs" (NASBA, 2008, p. 13). The proposed accounting curriculum set forth the requirements deemed appropriate for those in public accounting, that portion of the accounting profession for which NASBA considered itself as keepers of the public trust. Without separate tracks, financial and managerial, for the accounting majors, the NASBA approach channeled accounting majors toward the CPA exam.

*The Accounting Professoriate Shrinks*

During the early years of the twenty-first century, a concern about the accounting professoriate drew much attention from the AAA and those involved in public accounting, that of the potential shortage of accounting Ph.D.s in the coming decade. The AACSB, AAA, and The PhD Project began researching the issue (Mangan, 2006; Plumlee, et. al., 2006; Schiffel & Smith, 2006). The PhD Project was formed by recruiters of public accounting firms and others, including the AICPA and the AACSB, in 1994 to identify prospective students, particularly from minority groups, for "the few openings in doctoral programs, and competition [was] fierce" (Mangan, 2006, para. 11). Mangan reported that "Business schools accredited by the AACSB issued 122 doctorates in accounting in 2000 and only 86 four years later. . ." (para. 21). The conclusion of the AAA study noted "Assuring an adequate supply of qualified accounting faculty in the future will require broad and dedicated efforts by Ph.D.-granting schools, the AAA, and other entities with a vested interest in the academic accounting profession" (Plumlee, et.al., 2006, p. 125).

Given that over half of the membership of the AICPA consists of accountants who do not work in public accounting and that 93% of the Professional Accountants in Business (PAIB) "work inside organizations in value-adding, decision support roles (vs. the other 7% who work in assessment or compliance roles)" (Clinton, 2007, p. 26), undergraduate students must bridge a gap between a collegiate environment in which financial accounting predominates and a job market dominated by managerial accountants (McCann, 2008, p. 1). As others note, the CPA designation holds its status as the "most widely recognized credential associated with accountants" (Hargadon & Fuller, 2001; Previts & Merino, 1998). Accounting majors gather knowledge about the discipline or institution of accounting through a socialization process, their everyday reality (Berger & Luckmann, 1966). Financial accounting provides the greater source of knowledge for engendering students with more experiences and relationships, a socialization process, than managerial accounting within the college or university setting, potentially creating a bias for financial accounting.

### *Measuring Student Preferences for Career Choice*

As undergraduate students engage in their individual dialectic relationship with the everyday life realities of the institutions of higher education and of the profession of accounting, their ways of knowing are enhanced, offering them opportunity to form preferences for ongoing relationships in the reality of the workplace. Career guidance takes many forms, one of which is the use of questionnaires. A search for a questionnaire to measure preferences for financial or managerial of the undergraduate accounting major through the interaction of personal, social, and religious influences did not yield a published instrument.

The theory of careers proposed and tested by Holland's Theory of Vocational Personalities and Work Environments (1997) supports the interaction of personal experiences and social relationships, helping to inform this study. Holland's Theory, an integrated model of psychological and sociological aspects used and tested over several decades and found to be reliable and valid within collegiate settings, builds on a person-environment (P-E) fit or congruence theory (Appendix C). Holland describes the theory as based upon four ideas. The first two of the four characterize persons and environments in which they live and work according to six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. The third indicates that people search for environments in which to live and work that match with their vocational interests defined by skills, abilities, attitudes, and values. Given the other three, the fourth acknowledges the interaction of personality and environment as determinants of a person's behavior leading to educational, vocational, and social choice, stability, and achievement (Holland, 1973, *1*997).

Holland arranged the six personality/environmental types in a hexagon for measuring relationships (Appendix C). The hexagon illustrates typologies by noting the placement and proximity of personality types within environments. Greater consistency derives from adjacent personality types than from types that extend across the hexagon. Congruency occurs when personality and environmental types coalesce. People tend to favor congruent environments and flourish within them. Holland's theory does not address social influences, such as class or special advantages, religious beliefs or

Table 5

Changes in Accounting Education with Section on Financial and Managerial Areas

| TIME | GROUP | | ISSUE |
|---|---|---|---|
| *Growth of collegiate accounting education* | | | |
| 1881-1883 | Wharton School of Business-Pennsylvania U | UG | Collegiate level accounting series (1883) business school |
| ?1892-1912 | Prof Charles Sprague New York University | UG | Philosophy of Accounts took accounting from bookkeeping rules to theory & explanation |
| 1892-1894 | AAPA with NYU School | Grad | For accounting & business NYU graduates, lasted 2 yrs - enrollment problem |
| 1900 | C W Haskins, Dean NYU | Grad | School of Commerce, Accounts & Finance--New York CPA exam curriculum-not liberal arts |
| 1916-1926 | Accounting professors organized/published | UG Grad | Beginning of AAA (1916) & journal *The Accounting Review* (1926) Emphasis on econ topics [WWI 1914-18] |
| 1910-1926 | Growth in accounting courses offered | UG Grad | 1910 NYU UG & Grad, Wharton, UG, 52 colleges acctg 1926 Grad = 30, UG = 60, acctg courses in 336 colleges |
| 1926-1935 | Acctg professoriate & Acctg practitioners | UG Grad | Academe theoretical framework w/ normative approach Practitioners solutions with positive approach |
| 1938* | U of I-Urbana-Champaign | PhD | Offered first doctorate degree in accounting in U S -Illinois |
| *Emphasis on type of accounting financial versus managerial (one or two areas)* | | | |
| 1950 | AICPA & NASBA | Fin | Push for one class of accountants w/ postgraduate education |
| 1955 | Rutgers University | Fin | MBA for liberal arts graduates wanting CPA certificates |
| 1950s | Managerial accounting Financial accounting | Mgl Fin | From independent of mgt to decision-support for mgt Business consulting added for lucrative value in CPA firms |
| 1961-1962 | AAA | Fin Mgl | Supported 2acctg. tracks-public practice vs managerial, management accounting required in curriculum |
| 1960s 1970s | Post-war baby boomers | Bus | MBA programs focused on management not accounting--business education overtakes acctg education |
| *Control of accounting education* | | | |
| 1967-1969 | AACSB | PhD | Doctorate terminal degree for professors, not MBA-CPA Acctg research gravitates to quantitative mgt topics |
| 1973-1978 | AICPA | FSA | Establishment & accreditation- acctg professional schools Federation of Schools of Accountancy |
| 1978 | AACSB | FSA | Acctg programs accredited, AICPA drops FSA support |
| 1979 | AICPA | CPA | 150-hour requirement to take CPA passed in several states |
| 1979 | NASBA | --- | NASBA separates to stand-alone organization from AICPA |
| 1984 | NASBA--1st Uniform Accountancy Act | UAA | Each state decides to adopt; whether in total or in part |
| 1989 | Big Eight CPA firms | AAA | Disgruntlement w/accounting education, money for revamp -Accounting Education Change Commission |
| 2000--- | Universities | PhD | Fewer number of PhDs each year, acctg programs concern |
| 2004--- | NASBA | UAA | CPA candidates--prescriptive course work required w/ accredited schools, Center for the Public Trust estab |

*(Bedford, 1997, p 22)

practices, and economic conditions though such obviously affect people's career choices (Gottfredson & Holland).

*Use of Holland's Personal-Environmental Fit Approach with Accountants*

These following examples of the use of Holland's studies with accountants, both practitioners and students, provide a base for using personal and social factors in making choices or identifying preferences. Some studies of accounting practitioners and of accounting students used Holland's P-E Fit model for identifying and comparing dominant types. A 1981 cross-cultural examination of Holland's theory by Aranya, Barak, & Amernic of practicing CPAs used the three-letter code CES (conventional, enterprising, social) to represent the degree of congruence based on Holland's 1973 model or some combination of those three types (1981). The study used three samples of CPAs, Anglophones and Francophones from Canada and Californian CPAs from the U.S. Accountants are not characterized as Artistic, either in personality or environmental interests, according to their study. The top three environments for accountants in the study, starting from the highest, were Conventionals, then Enterprising, followed by Social, resulting in the most common pattern of CES. Also noted was that the Investigative type not only did not fit the study participants but was negatively correlated with vocational fit.

A 1991 study using forty-five undergraduate students majoring in accounting and fifty-two in hospitality management identified the accounting majors as CES, adding support for Holland's classification of accountants (Chacko, 1991). The hospitality management majors ranked highest in Enterprising and the greatest difference between

the two groups was in Conventional with the accounting majors scoring the highest. The study used the students' declared interest, lifestyle, and work-environment preferences.

A study of vocational misfit in management accounting by Cluskey and Rivers (1999) using Holland's theory and P-E fit model shows that accounting jobs can be quite disparate, validating distinct occupational environments for accountants working in an international manufacturing firm. Each accounting job "requires different vocational personality features to optimally satisfy the task demands" (Cluskey, Jr. & Rivers, 1999, para. 1). The accounting positions and codes used for the study were general accountant-CRS, cost accountant-CES, systems accountant-CSE, tax accountant-ECS, auditor-REC, internal auditor-ICR, controller-EIS, and manager-ESC (Table 1; see also Cluskey and Vaux, 1997).

In the company studied, the managerial accountants worked "through a series of job rotations to gain experience in a variety of accounting positions" (Cluskey & Rivers, 1999, para. 1). Vocational misfit was identified through survey responses measuring four job stressors (role conditions, job qualities, work relations, and career progress) and four job strains (job satisfaction, good health, self-esteem, and turnover). Results showed that auditor and internal auditor were positions with a larger misfit percentage and those positions seemed to be ones managerial accountants avoided (para. 21).

Holland's categories assign accounting as a college major within the category of Conventional. Categories assigned to business-related majors show economics and finance as Investigative, and management, management information systems and marketing classified as Enterprising (Thompson, 2003; Smart, 2003; Furnham, 2001).

*Use of Holland's Theory to Study College Students*

Kenneth Feldman, John Smart, and Corinna Ethington have authored texts, published articles, and presented their research findings at a variety of conferences over the past three decades on students in higher education, particularly using Holland's P-E Fit theory. In 1969 Feldman, with T. M. Newcomb, studied and then published their findings in a text, *The Impact of College on Students*. Smart recently published *Academic Disciplines Holland's Theory and the Study of College Students and Faculty* (2008).

Additional study among college students pertaining to the socialization aspect of Holland's theory reflects the historical focus of collegiate education "to promote student growth and development of multiple and distinctive abilities and interest domains" (Feldman, Smart, & Ethington, 2004, p. 531) and the inculcation of a professions' standards and values upon new entrants. The term, "anticipatory socialization" used by Merton and Rossi in 1968, applies to the process for undergraduate students (Clikeman & Henning, 2000). In studies using Holland's theory, the findings suggest "a stronger socialization than psychological [personal] dynamic at work for college students" (Smart, 2003; Feldman, Smart, & Ethington, 2004). Evidence exists that "college students, irrespective of their dominant personality types as freshmen, are equally influenced by the prevailing norms and values of whatever academic environment they select" (Feldman, et. al., 2004, p. 530). Feldman, Smart, and Ethington studied college students through a series of analyses using Holland's theory of careers "to examine the patterns of student stability and change inherent in the college experience" (2004, p. 528). Research findings support "that the advice provided students need not be constrained by students' past or present personality profile, but rather can be grounded in a more futuristic and

developmental perspective based on the broad repertoire of competencies and interests that students aspire to develop as a result of their collegiate experiences" (Feldman, et. al., pp. 546-47). This finding offers confirmation of the historical focus of a college education, that of enabling students to grow beyond the point at which they began.

Earlier studies confirmed that students who entered a field within their dominant personalities made sizable gains in ability in those areas. However, students who choose an incongruent academic major "uniformly increase in the abilities and interests promoted by their chosen environment" and may gain more than is lost but will generally not gain as much as the student who chooses a congruent major will gain. For example, a student with a dominant Artistic personality who entered an Artistic field gained in ability and interest. If a student with a dominant Artistic personality entered an Enterprising field, the student gained but less than with the Artistic field, and decreased in ability and interest if entered the Investigative and Social fields. Results showed two exceptions, both for Enterprising student types. If an Enterprising student personality entered an Investigative environment, that student gained more in Enterprising ability and interest than an Enterprising student gained entering Enterprising environments. Too few students in the categories of Realistic and Conventional (accounting majors) participated in the study for developing meaningful results (Feldman, et. al., 2004).

Study findings also support that "the likelihood of students developing any specific repertoire of competencies and values is singularly dependent upon their entry into an academic environment that requires, reinforces, and rewards that particular repertoire" (Feldman, et.al., 2004, p. 534). Such studies confirm the strength of the

socialization process by institutions, especially those of higher education and one's college major.

*Holland's Theory as Partial Support for Berger and Luckmann's Construct*

Holland's theory of congruence of personal and environmental (social) factors with subsequent research and testing provides support for the theoretical construct of personal and social interaction by Berger and Luckmann. Holland's work with accountants through the person and social/environmental fit theory provide affirmation that differences exist between financial and managerial accounting (Aranya, Barak, & Amernic, 1981; Chacko, 1991; Cluskey & Rivers, 1999; Cluskey & Vaux, 1997). The differences identified by these studies were primarily those associated with jobs rather than traits associated with intergroup/intragroup distinctions, such as those described at the beginning of this chapter.

Berger and Luckmann included religion as one of their three components of the construction of reality. None of the career research described using Holland's P-E Fit theory used religion as a factor in making choices or developing preferences. From looking at religion as a factor in studies of ethical behavior described earlier within this chapter, it has been shown that religion, as religious behavior, positively affects ethical choices of accountants, both those working within the accounting profession and those who are learning about the accounting profession for the opportunity to work within that profession. Therefore, to utilize the fullness of "one's way of knowing" using the sociological construct put forth by Berger and Luckman, a test of an accounting major's preference for either financial or managerial accounting needs to include a religiosity measurement.

*Selection of Measure for Determining Preferences*

The three differences between financial and managerial accounting described in the first section of this chapter provide the traits for measuring to make a determination of an accounting major's preference of accounting area. These differences, decision focus of users, time frame of information, and reporting standards, as noted previously, capture intergroup/intragroup dynamics. Because undergraduate accounting majors typically begin their study through the first course in accounting, described by the AECC in 1992 as "the introductory accounting sequence, usually taught over two terms (e.g., introductory "financial" and "managerial" accounting)" (AECC & AAA, 1996, p.PS 2-1), they have been exposed to the two accounting areas. This is the point at which the socialization process with the institution of professional accounting commences for the students through their everyday experiences with the subject, classmates, and professors, allowing them to begin the process of developing a preference for one or the other types of accounting. Typically, those students are not exposed to religious beliefs in the study of accounting, except perhaps for the students enrolled in religious-based institutions, as accounting is considered objective and utilitarian (Sorter, Ingberman, & Maximon, 1990; AICPA, 2008; IMA, 2004).

*Use of Differences for Scale Choice*

With a paucity of literature addressing the interplay of religion and accounting, existing research streams and/or scales for measuring religious beliefs of those engaged in the profession of accounting were not available for use. A published compendium of religious scales in the psychology of religion, describing over 100 measures with recognized validity and reliability in 17 different categories, (Hill & Hood, 1999) was

utilized in conjunction with research studies for addressing factors pertaining to one's manner of holding religious beliefs for differentiating financial and managerial accounting. Accounting serves a critical role, that of providing relevant information to decision makers, in the economic environment of every nation and, therefore, within a multiplicity of religious belief systems. The survey instrument had, by necessity therefore, to be free of any doctrinal content. It is also true that colleges and universities in the U.S., where the survey would be used, attract a wide variety of students from around the world, students with a broad range of religious beliefs.

The differences in types of accounting as described in this study are fundamental differences between the two types of accounting. Financial accounting uses past data/information according to a set of authoritative standards to provide information to external users. Managerial accounting uses information about the future for specific decisions under consideration by managers within a specific organization. Financial accounting is defined more explicitly in terms of content and structure than managerial accounting, a characteristic understood by most accounting majors. The economic descriptions of assets and equities arranged within the structure of financial statements, balance sheet, income statement, and cash flow statement, are repeated through a series of courses in the accounting major.

The choice was made to match the type of accounting with a similar type or way of holding one's religious beliefs. Content and structure in financial accounting are fundamental to the nature of financial accounting, undergirded by the reliance on generally accepted accounting principles (GAAP). This fundamental, basic, essential construct of how one does financial accounting led to the selection of a religious scale

utilizing fundamentalism, an instrument for measuring a fundamentalist manner of holding one's religious beliefs. The measurement scale that fit the requirements was the Religious Fundamentalism (RF) Scale.

The RF Scale has been used in research with participants from a variety of religions, Christian, Muslim, Jew, and others (Hill & Hood, 1999, p. 422). The RF Scale has shown a reliability based upon internal consistency of .92 and a validity that correlates with the Right-Wing Authoritarianism Scale between .66 to .75 [Altemeyer, 1988], the Christian Orthodoxy Scale between .60 to .75 [Fullerton & Hunsberger, 1982], and the Dogmatism Scale .57 to .60 [Altemeyer, 1996] (p. 423).

*Use of Scale with Accounting Majors*

Using two studies in psychology, in which accounting students were participants in one of the studies, support was provided for the use of the RF Scale. Accounting student participation occurred in a study of the need for closure by Webster and Kruglanski (1994). A later study used the Need For Closure Scale (NFCS) developed by Webster and Kruglanski and the RF Scale by Altemeyer and Hunsberger (1992) for testing the need for closure in persons for understanding aspects of religious personality (Saroglou, 2002). The 1992 version of the RF Scale consisted of 20 items, but that Scale was reduced by its authors to a 12-item scale in 2004 (Altemeyer & Hunsberger). The Saroglou study had participants from a French-speaking Belgian University who were undergraduate psychology students and students in economics, political science, and social science.

The Webster and Kruglanski study (1994) consisted of six separate studies, of which only the first three are relevant to this work. The first study had two sample

groups, a student sample and a library group composed of adults in public libraries who volunteered to participate in the study. These two groups tested an individual-difference measure of the need for closure developed by the researchers (1994, p. 1050). Based upon their results with the two participant groups that the NFCS reliably assessed the closure construct, Webster and Kruglanski then used the NFCS among eight other measures with 97 introductory psychology students and another 60 introductory psychology students who took a set of three different tests (all were students at the University of Maryland). The researchers were trying to determine "whether the NFCS taps a unique variable distinct from alternative relevant constructs" (1994, p. 1052). Though the tests were not exhaustive, the NFCS exhibited the expected pattern. The need for closure, using the NFCS, did provide results showing "low to moderate association with authoritarianism, intolerance of ambiguity, dogmatism, need for cognition, cognitive complexity, impulsivity, need for structure, and fear of invalidity" while not showing a relationship with participants' intelligence or concerns of social desirability (p. 1056).

The researchers, wanting to test the validity of the measure, used Holland's Theory of Personal-Environment Fit to select groups with known validity for specific types of personality. The two types selected were Conventional and Artistic. The two groups of students recruited to participate in this part of the study were accounting majors, Conventional, and studio-art majors, Artistic, predicting that the accounting students would attain higher scores on the NFCS than the art majors. The results of the study confirmed that the accounting majors scored significantly higher than did the studio-art majors in the need for closure (Webster & Kruglanski, 1994. p. 1056).

The Saroglou study is based upon an assumption that religious people subordinate in some way everything to their faith, a second level of dogmatism in which "the subordination of the peripheral beliefs to the central region of beliefs" occur (2002, p. 184). Dogmatism at the first level separates and isolates one's belief system from one's disbelief system (p. 185). Saroglou used the NFCS for testing participants for a high need for closure, with characteristics of a preference for order, discomfort with ambiguity, preference for predictability, close-mindedness, and decisiveness, with Altemeyer and Hunsberger's Religious Fundamentalism Scale as the test for religiosity (p. 185). A second religiosity scale was developed to differentiate the importance of religion in one's personal life, dividing into two factors, classic religiosity and openness to spirituality-emotional aspects of religion (p. 189).

Results showed that participants with high classic religiosity also scored high in preference for order, "the strongest if not the only predictor of the NFCS-classic religion relation" (Saroglou, 2002, p. 191). With less strength of association than classic religion-preference for order, participants "who scored high in religious fundamentalism also tended to be high in total need for closure, preference for order and predictability" (p. 191). Saroglou concludes that several factors or characteristics within the NFCS is useful for understanding religious personalities (p.192).

Indirectly through the two studies, accounting majors were tested using Berger and Luckmann's construct of the dialectic relationship of personal, social, and religious realities connected to Holland's P-E Fit Theory and Altemeyer and Hunsberger's RF Scale.

As described with the religiosity aspect of this study, no specific measurement or scale for differentiating students by their preference for either financial or managerial accounting was found in the existing literature. The scale/instrument devised for this study and its use is described in the Chapter 3. The hypotheses derived from the review of the literature follow.

## Hypotheses

For addressing the question of does the manner of holding one's religious beliefs make a difference in an accounting major's preference for financial or managerial accounting, the question is divided into two parts, preference for financial or managerial accounting and difference through use of religious fundamentalism in the manner of holding religious beliefs. The accounting preference issue is addressed first in forming hypotheses for answering the research question.

Hypothesis 1. The design of an undergraduate accounting major in most colleges and universities follows a general or common curriculum, one that does not differentiate between financial or managerial accounting. The three differences, users, timing, and authority, however, do provide differentiation between these two types of accounting.

Hypothesis 1. (Alternative form): Financial and managerial accounting career preferences (as measured by items focused on users, timing, and authority) will load on separate factors in an exploratory factor analysis of the data collected for measuring student preference.

Hypothesis 2. This hypothesis depends on the results of the factor analysis. Subscales will be created to measure student preferences for financial versus managerial accounting. The average of the items that load on the "financial" factor in the factor

analysis will be used to yield a financial subscale. Items that load on the "managerial" factor will be averaged to yield a managerial subscale score. These scores should then correlate with student intent to pursue financial or managerial careers and to take particular professional exams.

Hypothesis 2 is designed to measure career plans by looking at the present ("made choice today") and the future ("five to ten years from now"). Career plan choice is divided into three parts for recognizing the impact of the socialization process in which the academic accounting professoriate, throughout the history of accounting education, has favored teaching the practice of financial accounting, in close relationship with the AICPA. The collegiate socialization favoring financial accounting likely affects the career plans of those students preferring managerial accounting who would anticipate two plans, one short-term (choice today) and a second long-term (five to ten years hence) career plan. For those accounting students who favor financial accounting, only one career plan would seem likely for both periods (today, and five to ten years from now).

Hypothesis 2a: Financial accounting subscale should correlate significantly with both present and future intent to pursue a career in financial accounting.

Hypothesis 2b: Managerial accounting subscale should correlate significantly with present intent to pursue a career in financial accounting, but less so with future intent to pursue financial accounting.

Hypothesis 2c: The managerial subscale should correlate significantly with future intent to pursue managerial accounting.

Hypothesis 3. In addition to intent to pursue a career in one area or another, the profession of accounting uses certification examinations that are specific to career paths

in financial or managerial accounting. The CPA is the exam for financial accounting since 1896 and is the most recognized accounting credential (Hargadon & Fuller, 2001; Previts & Merino, 1988). Again, the socialization of undergraduate accounting majors likely affects which of the certifications students plan to acquire against a background of the importance of the CPA credential for a professional career in accounting. The AICPA promotes being a CPA as the opening for all career opportunities within the profession, "from public practice to business/industry to government and education" (AICPA, 2009 March). Financial accounting career preference should correlate significantly with intent to take the CPA exam.

Managerial accounting should show a weaker relationship with the CPA exam intent than that of the financial accounting students. As noted for Hypothesis 2, undergraduate accounting majors experience a socialization process that emphasizes the CPA as an important credential for becoming a member of the profession of accounting. Within the practice of managerial accounting, accounting practiced in an intra-relationship basis, certification programs cover a variety of professional accounting areas. The various professional organizations develop and maintain these credential programs. The primary certifications in managerial accounting are the Certified Management Accountant (CMA), the Certified Internal Auditor (CIA), the Certified Information Systems Auditor (CISA), and the Certified Fraud Examiner (CFE).

Because a CFE may operate as an external party to an organization or individual (inter-relationship) and may operate within an organization (intra-relationship) in a staff position, the CFE may fit within either category, financial or managerial. Given the broad array of types of professions noted within the ACFE membership and the broad array of

activities undertaken that are supported by the ACFE, support exists for classifying the CFE as more akin to managerial accounting than financial accounting. The table below, Table 6, provides a listing of the major professional accounting organizations in the U. S. from the earliest recognized professional accounting organization through the creation of the ACFE.

Preference for managerial accounting should correlate significantly with intent to take one of these exams, CMA, CIA, CISA, and/or CFE, while preference for financial accounting should not correlate significantly for taking any of the managerial-based exams. In addition, preference for managerial accounting may correlate with intent to take the CPA exam because of the socialization process in collegiate accounting and similar orientation for career plans (Hypothesis 3b and c).

Hypothesis 3a: Financial accounting subscale scores should correlate significantly with intent to take the CPA exam.

Hypothesis 3b: Managerial accounting subscale scores should correlate significantly with intent to take the CMA, the CIA, the CFE, and/or the CISA exam.

Hypothesis 3c: Managerial accounting subscale scores may correlate significantly with intent to take the CPA exam.

Hypothesis 4: This hypothesis directly addresses the research question, that of religion making a difference in forming a preference for either financial or managerial accounting as an undergraduate accounting major. The three differences used to create the subscales for differentiating financial and managerial accounting (users, timing, and authority) provides a basis for describing how one's religious beliefs could be held. This differentiation of types of accounting, financial, described as inter-relational, between

groups, or managerial, described as intra-relational, within a group, provides the basis for defining "the manner of holding one's religious beliefs" for this study. Because financial

Table 6

Development of United States Professional Accounting Organizations with Certifications

| | |
|---|---|
| 1844 | British Companies Act (BCA) Companies needed to be audited |
| 1854 | The Institute of Chartered Accountants of Scotland—world's first professional body of accountants |
| 1856 | Revision of British Companies Act—beginning of independent professional auditors |
| 1883 | Parliament granted charter for The Institute of Chartered Accountants of England and Wales |
| 1882-1908 | Institute of Accounts of New York--first umbrella professional accounting organization in the U S |
| 1884 | Institute of Internal Revenue (IRS) Enrolled Agent's examination **(EA)** |
| 1887 | American Association of Public Accountants (AAPA) |
| 1896 | Enactment of state licensure law—certification of public accountants **(CPA)** New York |
| 1902 | Federation of Societies of Public Accountants forms |
| 1905 | Merger of AAPA with Federation of Societies of Public Accountants |
| 1916-1917 | Institute of Accountants in USA, American Institute of Accountants (AIA) Name change from AAPA |
| 1916 | American Association of University Instructors in Accounting (AAIUA) forms |
| 1919 | National Association of Cost Accountants (NACA) forms |
| 1921 | American Society of Certified Public Accountants (ASCPA) forms |
| 1936 | ASCPA merger with American Institute of Accountants (AIA) |
| | AAIUA changes name to American Accounting Association (AAA) |
| 1941 | Institute of Internal Auditors (IIA) forms |
| 1950 | Association of Government Accountants (AGA) forms |
| 1957 | AIA changes name to American Institute of Certified Public Accountants |
| | NACA changes name to National Association of Accountants (NAA) |
| 1967 | Information Systems Auditor and Control Association (ISACA) forms |
| 1969 | Doctorate declared to be terminal degree for collegiate teaching |
| 1972 | NAA initiates the Certified Management Accountants exam (CMA) |
| 1974 | IIA initiates the Certified Internal Auditor exam (CIA) |
| 1978 | ISACA initiates the Certified Information Systems Auditor exam (CISA) |
| 1988 | Association of Certified Fraud Examiners (ACFE) forms, Certified Fraud Examiner exam (CFE) |
| 1991 | NAA changes name to Institute of Management Accountants (IMA) |
| 1994 | AGA initiates the Certified Government Financial Manager exam |

(Moyer, 1951, Brown, 2004, Hein, 1963, p 509, Edwards, J D & Miranti, Jr , P J , 1987, Previts &Merino, 1998, IRS, 2008, Flesher, Miranti, & Previts, 1996, p 51, Zeff, 1984, Meyers & Koval, 1994, Van Wyhe, 1994, American Accounting Association, 208, Langenderfer, 1987, Roberts, 1987, Institute of Internal Auditors, n d , Association of Government Accountants, 2008, ISACA, 2008, Association of Certified Fraud Examiners, 2008 & n d )

accounting, with its between-groups characterization, requires a basic or fundamental approach (manner) recognizable by all participants in order to communicate and function properly, the users, timing, and authority basis for financial accounting served to select a religious fundamentalism scale. Managerial accounting, operating within a group characterization, allows for some communication and functions peculiar to its own group. The diversity possible within groups did not seem manageable for a study lacking prior research identifying or narrowing the peculiarities possible.

Hypothesis 4a: Financial accounting subscale scores should correlate significantly with religious fundamentalism as measured by the Revised Religious Fundamentalism Scale.

Hypothesis 4b: Managerial accounting subscale scores should not correlate significantly with religious fundamentalism as measured by the Revised Religious Fundamentalism Scale.

## Summary

Using the sociological construct for one's way of knowing, the background presented in this chapter described the institutionalization or social aspect an undergraduate student majoring in accounting would experience through interaction with members of the academic accounting professoriate charged with passing along the history and traditions of the profession of accounting. The identified differences between financial and managerial accounting, though noted in textbooks and experienced by practitioners, generally are not used for determining the courses taught or the structure of an accounting curriculum as noted in this chapter.

The development of preferences, one's way of knowing, is informed by the institutionalization process, one's personal experiences, and religious beliefs according to

Berger and Luckmann (1966). In the United States, religion is seldom associated with the study of accounting as pointed out in this chapter. Religion, as a topic of study and research in other countries, such as those in Europe and in the Middle East, aids in one's understanding of the development and practice of the profession of accounting.

The research question of whether the manner of holding religious beliefs makes a difference for an undergraduate accounting major in preferring financial or managerial accounting is addressed through development of a method for answering that question. That methodology is described in the next chapter.

# CHAPTER 3 – RESEARCH METHOD

The research question encompasses two measurable qualities: 1) the manner of holding one's religious beliefs and 2) preference for financial or managerial accounting. To address the primary question of "does the manner of holding one's religious beliefs make a difference" requires scales for both qualities. Adequate scales were available for measuring religious beliefs. An adequate scale for assessing accounting majors' preference for either financial or managerial accounting did not exist, requiring development of survey items to create such a survey. The following section describes the design and selection of measurement instruments drawing from the basic construct that one's way of knowing derives from one's understanding developed through interactions based on personal experience, social relationships, and religious beliefs (Berger & Luckmann, 1966).

## Design and Selection of Measurement Instruments

Holland's Theory of Vocational Personalities and Work Environments (1997) provides the psychological and sociological aspects of the basic construct and statistical validity of differences within the vocation of accounting, described indirectly through the hexagonal model (Cluskey & Vaux, 1997; Cluskey & Rivers, 1999; Aranya, Barak, & Amernic, 1981). The desire for an instrument with a relatively small number of items and one that specifically addressed the three primary differences between financial and managerial accounting identified and described in Chapter 2 were the requirements to be satisfied by development of such a measurement scale. The three differences used in the instrument consisted of

1. the decision focus of users--external vs. internal;

2. the time frame of information--historical vs. present/future; and

3. the reporting standards--authoritative standards-based vs. decision-specific.

Using the sociological construct that college students possess career-influencing ways of knowing based upon their personal experiences, relationships, and manner of holding religious beliefs that will affect their consideration of the field of accounting best suited to them, survey item statements were developed addressing the three differences from those three ways of knowing for students. In using the sociological construct of one's way of knowing, the items needed to draw from personal consideration of the differences (items using the pronoun "I") and the perspective of individuals considered important to the undergraduate accounting major. As the literature shows, classmates and friends (social relationships) influence undergraduate students in the choice of a college major (Smart, 2003). Parents (social relationship) were also included along with classmates and friends as the most likely groups to influence the undergraduate students. A list of 24 statements, a dozen directed toward identifying a preference for financial accounting and a dozen toward managerial accounting were constructed based upon the three differences and the three areas of the construct (Appendix A). These statements formed the survey for differentiating between preferences for either financial or managerial accounting.

A pilot test of the items designed to measure preferences for financial and managerial accounting was conducted prior to the full distribution of the survey instrument. The pilot test resulted only in revision of item wording to clarify meaning. No substantive changes were made. Accounting students attending a small private university located in the Midwest United States (but not in Missouri), participated in the pilot test. All Institutional Research Board (IRB) policies were followed.

As described in Chapter 2, religion is not often addressed within the profession of accounting in the United States (Tables 2 and 3). No existing scale specifically measuring religious beliefs of those engaged in or aspiring to engage in the profession of accounting was located within the literature search for articles or papers combining accounting and religion. Religious scales do exist covering a wide variety of topics (Hill & Hood, 1999). For this study using undergraduates enrolled in colleges and universities that are known to draw students from around the world, a religious scale that would not prejudice a particular religion but would accommodate at least the primary or major world religions was important in selecting a scale.

Because the religious scale should measure difference based upon three characteristics, characteristics that describe fundamental practices of the two types of accounting, the Revised Religious Fundamentalism Scale (RRFS) by Altemeyer and Hunsberger (2004) was selected. The RRFS has demonstrated adequate internal consistency reliability ($\alpha = .85$ or higher) and content validity based on correlations with related scales (Altermeyer & Hunsberger, 2004, p. 53). This "scale was designed to measure attitudes about one's religious beliefs, rather than adherence to any particular set of beliefs" (Altemeyer & Hunsberger, 2004, p. 49). For the undergraduate accounting major, attitude toward a set of beliefs may be a stronger determinant of preference in that they are students in the process of becoming adherents to a variety of ideas. Fundamentalism as defined by Altemeyer and Hunsberger (1992, 2004) is

> the belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be

> vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity (1992, p. 118; 2004, p. 49).

The RRFS items address the areas for defining differences, those of users, timing, and authority, between financial and managerial accounting. The design of this initial approach to religion as a factor in determining accounting preference is the use of specific attributes of one of the preference areas, that of financial accounting. Those characteristics used to define financial accounting in this study, external focus (users), historical time frame (timing), and formal standards-based authority of reporting (authority), are identifiable to students majoring in accounting as they are introduced at the beginning of their study of accounting (AECC). The concept of "fundamentalism" as "attitudes *about* one's religious beliefs" rather than "adherence *to* a particular set of beliefs" (Altemeyer & Hunsberger quoted above) parallels financial accountants providing information for external decisions made *about* one group (a business) by another group (investors and/or creditors) rather than managerial accountants providing information for internal decisions *to* take particular actions (Sorter, Ingberman, & Maximon, 1990, p. 6). Within the definition of fundamentalism (Altemeyer and Hunsberger) are words or phrases that connote external users (humanity, deity, forces of evil), the past or history (practices of the past), and standards-based authority (fundamental truth). This differs, as the research on professions and work place activity confirms, from intra-group environments with decision-specific work demanding multiple approaches to disparate problems disseminated by persons at many different

levels within the same organization, an environment of constant change and new techniques.

The RRFS correlates with measures of "right-wing authoritarianism and with each of its three components--conventionalism, submission to authority, and authoritarian aggression, Altemeyer's (1996) Dogmatism Scale, [and] with [a] degree of Christian orthodoxy" (Hill & Hood, 1999, p. 422). Noted in the previous chapter, accounting majors and studio-art majors were studied for association with various characteristics using the Religious Fundamentalism Scale (Saroglou, 2002).

## Specific Development of the Full Survey Instrument

The 24 items developed to measure preference for either financial or managerial accounting and the 12 items from the RRFS were combined by use of random numbers generated via a computer application. A 7-point Likert-type scale was used with these 36 items (Appendix A). Another 11 items, demographic in nature, queried respondents as to their class (first-year, sophomore, junior, senior) in school, credit hour completion, work experience, grade point average (GPA), membership in student organizations, university type and size, and their gender. These demographic items came first in the instrument based on literature indicating this increases the response rate to such items (Andrews, Nonnecke, & Preece, 2003; Dillman, 2000; Frick, Bachtinger, & Reips, 1999; Oppenheim, 1992).

Following the demographic questions and the mixture of RRFS and accounting preference items, respondents were asked to indicate the degree to which they believed the CPA exam is essential to being a professional accountant. Finally, students were to indicate their current and future career preferences and their intent to take defined

professional accounting exams. The full version of the instrument, as seen by the respondents, is available in Appendix B. A total of 65 items, consisting of 11 demographic, 24 financial/managerial differences using the sociological construct and accounting differences described in professional accounting literature, 12 of the RRFS, one about CPA professional status (Appendix A), choice of six career accounting preferences "if I made the choice today" and the same six career accounting preferences "five to ten years from now" and the likelihood of taking each of five professional accounting examinations, formed the survey instrument (Appendix B).

With a study of undergraduate accounting majors that necessitates the intentional identification of choice between accounting fields, potential biases resulting from a history of professional differences regarding the nature of the major in accounting could skew results of the study. For example, the number and types of accounting courses required in the major affect a student's understanding of the importance and relevance of types of accounting reports and the authoritative process for developing reports (Chapter 2, Development of Preferences section). Other influences affect accounting students as described in Chapter 2, Section "Financial accounting desire for one class of professional accountants" based upon attitudes of the accounting professoriate as another example. To cover the widest range of possibilities for undergraduate accounting majors and to avoid some biases, the design for the survey items was use of wording understandable by sophomores with one course in accounting and that course one in financial accounting. The avoidance of jargon or allusions to specific aspects of accounting work guided the formation of the survey items.

The survey items developed were based upon characteristics of the two areas of accounting published by the Financial Accounting Standards Board (1978) and in published research of the IMA (Seigal, 1996). Financial items reflected the characteristics of reporting data about past events in accordance with published authoritative guidelines for originating reports for decision makers external to the organization (intergroup behavior). Managerial items reflected the characteristics of reporting present or future information relevant to decisions considered by managers within the organization (intragroup behavior). Within the characteristics for each area, each item also contained an attribute of one's way of knowing by using "I" as that of self, ""classmates/members of organizations" and "parents" for those of relationship, and "God" and "religiosity" for religious deity (Appendix A).

## Participants

Fulfillment of research protocol involving human subject research occurred before the survey became available for student responses. Institutional review board permission was obtained from both the sponsoring university for the study and the college in which the researcher teaches. A few institutions required successful completion of online-tests of the researcher's knowledge and understanding of protocols involving human subjects before the survey could be sent to the institution for students' use. All IRB requests were met within the period provided. Opportunity for students to exit the survey allowed students to opt out at any point, another protective device for those asked to participate in the study.

Participants for this survey were solely undergraduate accounting majors enrolled in Missouri colleges and universities. This limitation of enrolled students within Missouri

colleges and universities is justified and appropriate in that Missouri is representative of the United States in many ways. Tim Jones, a correspondent for the Chicago Tribune labeled Missouri as "the mirror on the nation" and an effective intersection of cultural forces (2008, February 7). Seven states share Missouri's borders. The State in its largest cities reflects the diversity of Eastern (St. Louis) versus Western (Kansas City) American cultural attitudes and elsewhere defines itself with large farms to the north and the Ozark Plateau in the southern part of the state.

Using a web-page (http://www.dhe.mo.gov/data/statsum/statsum_0708.php), all of the 36 baccalaureate degree-granting institutions of higher education in the State of Missouri during 2007-2008 were identified. Those that did not offer a major in accounting (or primarily used online courses for a major in accounting) as determined from information on the institution's web site were excluded from further consideration (Columbia College, Stephens College, Missouri University of Science & Technology). The exclusion of colleges and universities using online courses as their primary mode of instruction avoided introducing a variety of instruction venues and allowed the study to be based upon a common mode of teaching/learning style, that of teacher instruction within a physical classroom of students. The remaining school websites provided the names and contact information for the faculty member in charge of the accounting program at each institution. Six of the 33 individuals contacted and invited to distribute a link to the on-line survey to their students did not respond, even after repeated attempts (Table 7: schools shaded in listing); 27 agreed to do so. The 27 schools participating represented colleges and universities from all geographic areas of Missouri in which institutions of higher education have a physical presence. Table 7 provides the name,

Table 7

Missouri Colleges and Universities Enrollment and Accounting Majors

| | Name of College/University Public/Private/Church-Related (CR) | Area of State | City | *MO census | *Public/ Private/ CR *** | ** MS CPA |
|---|---|---|---|---|---|---|
| 1 | Avila University | Western Central | Kansas City | 922 | CR | 66 |
| 2 | Central Methodist College | Central | Fayette | 892 | CR | 15 |
| 3 | College of the Ozarks | Southwestern | Hollister | 1,335 | CR | 29 |
| 4 | Culver-Stockton College | Northeastern | Canton | 765 | CR | 36 |
| 5 | Drury University | Southwestern | Springfield | 2,855 | Private | 43 |
| 6 | Evangel University | Southwestern | Springfield | 1,602 | CR | 39 |
| 7 | Fontbonne University | Eastern Central | St Louis | 1,532 | CR | 53 |
| 8 | Hannibal-LaGrange | Northeastern | Hannibal | 828 | CR | 0 |
| 9 | Harris-Stowe State College | Eastern Central | St Louis | 1,242 | Public | 99 |
| 10 | Lincoln University of Missouri | Central | Jefferson City | 2,001 | Public | 65 |
| 11 | Lindenwood University | Eastern Central | St Charles | 5,657 | Private | 136 |
| 12 | Maryville University | Eastern Central | St. Louis | 1,674 | Private | 169 |
| 13 | Missouri Baptist University | Eastern Central | Creve Coeur | 1,132 | CR | 45 |
| 14 | Missouri Southern State University | Southwestern | Joplin | 3,932 | Public | 201 |
| 15 | Missouri State University | Southwestern | Springfield | 12,757 | Public | 674 |
| 16 | Missouri University-Columbia | Central | Columbia | 20,283 | Public | 333 |
| 17 | Missouri University-Kansas City | Western Central | Kansas City | 5,521 | Public | 280 |
| 18 | Missouri University-St Louis | Eastern Central | St Louis | 5,942 | Public | 625 |
| 19 | Missouri Valley College | Central | Marshall | 1,416 | CR | 51 |
| 20 | Missouri Western University | Northwestern | Saint Joseph | 3,624 | Public | 87 |
| 21 | Northwest Missouri State University | Northwestern | Maryville | 5,057 | Public | 175 |
| 22 | Park University | Western Central | Parkville | 1,163 | Private | 0 |
| 23 | Rockhurst University | Western Central | Kansas City | 1,459 | CR | 56 |
| 24 | Saint Louis University | Eastern Central | St Louis | 6,377 | CR | 260 |
| 25 | Southeast Missouri State University | Southeastern | Cape Girardeau | 6,893 | Public | 216 |
| 26 | Southwest Baptist University | Southwestern | Bolivar | 1,284 | CR | 44 |
| 27 | Truman State University | North Central | Kirksville | 5,473 | Public | 253 |
| 28 | University of Central Missouri | Central Western | Warrensburg | 7,422 | Public | 302 |
| 29 | Washington University | Eastern Central | St Louis | 6,141 | Private | 42 |
| 30 | Webster University | Eastern Central | St. Louis | 2,765 | Private | 85 |
| 31 | Westminster College | Central | Fulton | 952 | CR | 18 |
| 32 | William Jewell College | Western Central | Liberty | 1,101 | Private | 25 |
| 33 | William Woods University | Central | Fulton | 786 | CR | 1 |
| | | | Public | * 80,147 | | ** 3,310 |
| | | | Private & Church-Related (CR) | * 42,638 | | ** 1,213 |
| | (Schools in shaded rows did not participate in the survey) | | TOTAL | *122,785 | | ** 4,523 |

*Information of number of full-time undergraduate students enrolled from Tables 31(Public Baccalaureate) and 32 (Private Not-for-Profit Baccalaureate) compiled by The Missouri Department of Higher Education, 2007-2008 Statistical Summary and retrieved December 21, 2010, from http://www dhe mo gov/data/statsum/statsum_0708 php

**Missouri Society of Certified Public Accountants, 2007-2008, volunteer survey of accounting faculty of Missouri colleges and Universities, 2007-2008, includes all accounting majors--undergraduate and graduate (personal communication)

***Information from Web sites of individual institutions

geographic location, type, and number of undergraduate full-time students enrolled in 2007-2008 of each school (Missouri Dept. of Higher Education, 2007-2008, Tables 31 Public and 32 Private). The Missouri Society of Certified Public Accountants (MSCPA) polled accounting faculty in Missouri colleges and universities for the number of students majoring in accounting during the 2007-2008 academic year. The results of that survey, including both undergraduate and graduate students, are included in Table 7 (Personal correspondence, MSCPA, 2007-2008).

## Procedure

This method of research used accounting faculty at colleges and universities in the State of Missouri for collecting data yielding information on undergraduate accounting majors' preferences for a career either in financial accounting or in managerial accounting. Missouri offers a variety of public and private colleges, some church related, and of varying sizes of student populations. The 65-item survey, available through an online provider (Survey Monkey), included demographic items for ascertaining the variety of types and sizes of institutions from which students responded. It also provided the classification of the respondents, sophomore through senior. Other than demographic responses, the survey protected a respondent's identity information as anonymous. Neither an individual student nor the school attended could be identified from data collected.

Each faculty member identified as chair of the accounting program or major was contacted by email. Once the faculty members agreed to disseminate the instrument, an e-mail was sent to each faculty member with the link to the survey on Survey Monkey, a brief overview of the instrument, and a copy of the Institutional Review Board (IRB)

approval of the study from William Jewell College. Some faculty desired that their own institution's IRB approval be met in addition to that of William Jewell, and those requests were honored.

The faculty members distributed the survey link to their students either directly through e-mail or posting the survey link to an accounting major's website https://www.surveymonkey.com/s.aspx?sm=IboR3pPpA7v86vR2nHMrnQ_3d_3d. The first frame of the survey described participation as follows:

> Thank you for participating in this survey. Please answer each question with what seems to you to be the best choice of those offered.
>
> The composite information from your responses will be available to the researcher, but the researcher will not have access to individual, identifiable responses. Your participation is voluntary and cannot be connected with achievement in any course you may be taking.

Respondents could go back to items throughout the survey. At the end of the survey students could check "Previous" which would return the respondent to any items for which a response was not given. A sentence thanking the person for completing the survey and an icon with "Done" was located on the last page of the survey. At this point, the student could exit the survey instrument. No incentive (e.g., enrollment in a lottery to win a prize or cash amount) was offered for participation.

## Survey Analysis Plan Based upon Hypotheses

The four hypotheses described at the end of Chapter 2 form the basis of the types of statistical analysis applied to the data collected via the survey instrument. This plan depends upon obtaining meaningful results from an exploratory factor analysis of the 24

items describing the three differences (users, timing, authority) between financial accounting and managerial accounting.

*Hypothesis 1 (Alternative form)*

*Financial and managerial accounting career preferences (as measured by items focused on users, timing, and authority) will load on separate factors in an exploratory analysis of the data collected for measuring student preferences* Literature describing the use of exploratory factor analysis suggests various formulae for determining the minimum number of subjects needed for a statistically valid test (Gorsuch, 1983; Hatcher, 1994; Garson, 2008). One common measurement determines the minimum number (N) of subjects (undergraduate accounting majors) as a function of the number of variables (p) multiplied by a factor of 5, $N = p \times 5$, while other measurements prescribe a specific minimum of subjects, such as Gorsuch's rule of 200. As this research is based upon two factors, financial accounting and managerial accounting, with 12 variables each, the formula for N would be 24 x 5, 120 subjects or survey participants, an amount deemed too few and, therefore, unacceptable using Gorsuch's minimum (1983). The minimum goal of 200 students responding to the 24 variables of the preference items was set for this study.

*Reliability of the APT*

The two factors, a financial subscale and a managerial subscale, should load on sufficient items to provide a means of differentiating financial preference from managerial preference. Combining the two subscales would create a scale called the Accounting Preferences Test (APT). The items forming the APT would be submitted to a

principal components factor analysis in SPSS using an oblique (Promax) rotations method, with a two-factor solution specified (Gorsuch, 1983).

Cronbach's alpha (*a*) would be used to measure the initial reliability of the 24 items devoted to measuring financial and managerial accounting career preferences (12 items for each). If the alpha was below accepted standards (.70), the loadings (corrected item-to-total correlations) for each of the 24 survey items would identify markedly low correlations to the total scale (Gorsuch, 1983; Berman, 2007). This would suggest that these items measured something different than the scale as a whole, and makes them candidates for deletion. Using an iterative process, the remaining items would be submitted to a reliability analysis again, with the resultant alpha inspected and additional items considered for deletion. This process would be repeated until a scale with an alpha value of .70 or more was determined. Also, for the purpose of developing a stronger reliability scale for possible use in career counseling, elimination of selected items consistent with maintaining a balance between the two areas of accounting is desired.

*Construct Validity of the APT*

To test the construct validity of the APT (with an alpha of .70 or greater), financial items would need to load on one factor and managerial items on the other. Additionally, for an item to be considered as "loading" on a factor, the loading value should exceed .40 on that factor, and be at least .10 below that on the other "non-loading" factor (Gorsuch, 1983; e.g., Henry, Arrow, & Carini, 1999). All items meeting these criteria would indicate the hypothesized factor structure was supported, suggesting that the constructs on which the items were developed were empirically valid, thus enabling the use of the restructured APT.

*Comparison of Financial and Managerial Areas*

Cross-tabulations using Pearson Chi-Square (Table 8) would provide another measure of respondents preferences for or dislike of financial and managerial areas of accounting. This measure would indicate any existence of cross over between the two areas. As noted in Chapter 2, Section "Financial accounting desire for one class of professional accountants," undergraduate accounting majors are influenced by the accounting professoriate, most of whom are CPAs, and by the fact that more of the accounting classes required of the students are financial in nature with relatively few classes in managerial accounting, especially at the undergraduate level.

To further explore students' perception of the importance of the CPA exam, a survey item stating "one must be a CPA to be considered a professional accountant" would be subjected to a *t*-test comparing its results with those for the item asking one's intent to take the CPA exam.

*Student Demographics Analyses*

Statistical correlations of the subscales (financial subscale as dependent variable and managerial subscale as dependent variable) composing the APT and the RRFS using demographic information of school type, grade point average (GPA), and gender of respondents (independent variables for each of the dependent variables) could provide additional information about three other influencing characteristics to accounting area preference.

*Hypothesis 2*

*The subscales that are created for measuring preference for either financial or managerial accounting* (and as described in Chapter 2 in the identification and discussion

pertaining to the differences between the two accounting areas) *are expected to correlate with career plans for the immediate future (present) and for longer-term plans (future)* Using the basis developed in Chapter 2 defining and describing the differences between the two areas of accounting, a preference for financial accounting is expected to correlate significantly with intent both presently and for the future to pursue a career in financial accounting. A preference for managerial accounting is expected to correlate significantly with an intent to pursue a career in managerial accounting in the future, though not necessarily in the present as described in Chapter 2. Given the academic accounting preference for and high profile of the CPA credential as described in Chapter 2, it is reasonable to expect that students anticipating a career in either financial or managerial areas of accounting would seek an initial career path upon graduation within the area of financial accounting.

*Convergent Validity of the APT*

In addition to the items tested for inclusion in the APT, survey items assess current career choices, later career choices, and intent to take professional exams in accounting. These items would be used to establish the convergent validity of the APT. Half of the items assessing current and future career choices would be used to measure preference for financial statement preparation, financial statement auditing, and tax accounting. Responses to these three items would be averaged for current choices to yield an indicator of "current financial career choice" and for future choices to yield a variable called "future financial career choice." Three other items measuring preference for management accounting, auditing, internal controls, and systems accounting for both

current and future career choices, would be averaged to produce mean scores for "current management career choice" and "future management career choice."

*Hypothesis 3*

*In addition to seeking a career in either financial or managerial accounting, an accounting student would also anticipate taking one of the professional accounting examinations for certification purposes* As noted in the discussion of Hypothesis 2, an undergraduate accounting major, either financial or managerial, would likely seek CPA certification. In coordination with longer-term career plans, those students preferring managerial accounting could also be seeking certification other than the CPA, planning to take either the CMA, CIA, CFE, and/or the CISA exams (Table 6, Chapter 2). Preferences for managerial accounting, then, expected to correlate with taking one or more of the four exams noted in the previous sentence. Five items ask respondents to indicate the likelihood of taking each of the following five exams: CPA, CMA, CIA, CFE, and CISA. Responses using a 7-point Likert-type scale, ranging from extremely unlikely to extremely likely, would measure intent to take the exams. These items would be measured by correlations between the APT subscales and score from "exam intent" for each of the exam types. An item on the survey placed at the end of the financial, managerial, and religion items stated "One must be a CPA to be considered a professional accountant." A *t*-test using this item as the independent variable to the item within "intent for taking the CPA" exam, dependent variable, would provide a measure of the importance of the CPA credential to the respondent's career plans.

*Hypothesis 4*

The primary research question is addressed with Hypothesis 4: *Does the manner of holding one's religious beliefs make a difference in forming a preference for either financial accounting or managerial accounting.* Using the differences of users, timing, and authority to define the two areas of accounting and the holding of one's religious beliefs in a fundamental manner, those preferring financial accounting are expected to correlate significantly with a fundamentalist manner of holding religious beliefs. Those undergraduate accounting majors preferring managerial accounting should not correlate significantly with holding one's religious beliefs in a fundamental manner. The manner of holding one's religious beliefs as a factor in determining one's preference for an area of accounting would be tested using Pearson Correlation (linear relationship required) between the accounting subscales of the APT and the Revised Religious Fundamentalism Scale (RRFS) for significance.

*Student Demographics Analyses*

Statistical correlation analyses of the RRFS (dependent variable) using demographic information of school type, grade point average (GPA), and gender (independent variables) should provide additional information about possible other influencing characteristics to the manner of holding one's religious beliefs.

## Summary of Research Method

The design and selection of the measurement instrument for this study uses two different instruments: an instrument created for this study (APT) and the RRFS. The two instruments were combined such that the items (APT of 24 and RRFS of 12) will appear in random order after the demographic items (11). A separate item (1) about the

importance of the CPA will follow these 47 items. Items querying career plans in two separate time frames (12 items) and intent to take professional accounting examinations (5 items) finish the survey (total of 65 items). A minimum total of 200 undergraduate accounting majors enrolled in Missouri colleges and institutions, solicited by accounting faculty at the individual schools, are needed to respond to the 24 financial and managerial accounting items (APT) for performing an exploratory factor analysis. The analysis provides the basis for determining an accounting major's preference for financial or for managerial accounting so that the research question, does the manner of holding one's religious beliefs make a difference for either financial or managerial accounting, may be addressed.

The methods used to test the research question, does the manner of holding one's religious beliefs make a difference in an accounting major's preference for financial or managerial accounting, were arranged and explained in order of the formulated hypotheses. Some additional tests were conducted to draw in the demographics items for looking at preferences for either financial or managerial accounting and for any differences in the manner of holding one's religious beliefs. The results of all tests identified in Table 8 are described in the next chapter.

The following statistical methods are to be used for gathering information to address the research question:

Table 8

Statistical Methods Used to Process Data (SPSS)

| Statistical Method/Measure | Use | Purpose | Hypotheses/Demographics |
|---|---|---|---|
| Exploratory Factor Analysis<br>Principal component analysis<br>Promax w/Kaiser normalization | 24 items of the APT | Development of financial and managerial subscales for determining preference of the undergraduate accounting major | Hypothesis 1: Development of financial and managerial subscales |
| Cronbach's Coefficient Alpha | Internal reliability for APT | Development of reliable instrument | Hypothesis 1: Internal reliability of subscales |
| Means testing (t-test) | Subscales to Gender | Gender (IV) to subscale preferences (DV) | Demographics |
| | Q 37 to intent to take CPA exam | Accounting professionalism (IV) to survey item of intent to take CPA exam (DV) | CPA exam as certification of The Professional Certification |
| One-way ANOVA<br>Post-hoc Bonferroni multiple comparison | Subscales to types of schools | Types of schools (IV) to difference in subscale preference (DV) | Demographics |
| | Subscales to GPA | GPA (IV) to Subscales (DV) | Demographics |
| Correlation | Subscales to career plans | Convergent validity testing of APT (DV) with career plans now & future (IVs) | Hypothesis 2: Present and Future career plans |
| | Subscales to exam intent | Convergent validity testing of APT (DV) with intent to take certification exams (IV) Response to research question | Hypothesis 3: Intent to take professional examinations |
| | Subscales to RRFS | | Hypothesis 4: Relationship between subscales and religious fundamentalism |

IV-independent variable/predictor; DV-dependent variable/outcome

# CHAPTER 4 – RESULTS

The primary research question was the difference made between a preference for financial or managerial accounting through the manner of holding one's religious beliefs. However, in order to answer this question, it was necessary to develop an instrument to measure the differences in preference between financial and managerial accounting. The statistical results of this study from responses to a quantitative survey will be given in the order of the research hypotheses, ending with the derived response to the primary research question, does the manner of holding one's religious beliefs make a difference in an undergraduate accounting major's preference for financial or managerial accounting.

## Hypothesis 1 - Alternate Form

### *Exploratory Factor Analysis of Financial and Managerial Items*

With exploratory factor analysis (EFA), no prior theory or construct identifies the factors that provide the structure of the data. EFA is a method to "uncover the underlying structure" of a set of variables (Garson, 2008, p. 1). Results for addressing the four hypotheses in Chapter 2 derive from the use of demographic questions, the accounting preferences test, and the RRFS, processed through the statistical package, Statistical Package for the Social Sciences (SPSS). As described below, the factors identified through EFA from the accounting preferences test modify the original 24-item instrument, reducing it to 14 items labeled as the Accounting Preference Test (APT) for differentiating those who prefer financial accounting to those who prefer managerial accounting. Likewise, the religious items (factors) in the RRFS may load on either the financial or managerial accounting areas through the analysis provided by the EFA .

Exploratory factor analysis generally requires a large sample of respondents. As noted in Chapter 3, Gorsuch (1983) set the minimum responses to the survey at 200. Responses from 228 undergraduate accounting majors attending Missouri colleges and universities during April and early May, 2008, provided data for addressing the hypotheses formulated regarding preferences for financial and for managerial accounting and for the manner of holding one's religious beliefs based upon psychological, sociological, and religious preferences.

Most respondents were students at public institutions (73.6%) with 11.9% from private/secular and 14.5% from private/church-related institutions. A larger percent of respondents were from institutions of 5,000 and up to 10,000 (39.1%), followed by 32.9% from institutions with more than 10,000 students, and 28.0% from institutions with enrollment below 5,000. Fifty-seven percent of the respondents were female and 43% male. Respondents reported overall cumulative grade point averages (GPA) of 3.5 and above (56.1%) with 32.0% reporting a GPA of 3.00 to 3.49, and 11.8% reporting a GPA of less than 3.0.

A comparison to a MSCPA census of accounting majors in Missouri colleges and universities made in 2007-2008 (Table 9) is shown below. Gender and GPA data were not included in the MSCPA census of both graduate and undergraduate accounting majors in Missouri higher education institutions.

Table 9

Comparison of MSCPA Census of Accounting Majors to Survey Numbers*

| Demographic Items | MSCPA Census | Survey Participants |
|---|---|---|
| Type of institution-Public | 73.18% | 73.57% |
| Type of institution-Private•Church Related | 15.76% | 14.54% |
| Type of institution-Private•Secular | 11.05% | 11.89% |
| Size of institution-Less than 5,000 population | 27.13% | 28.00% |
| Size of institution-5,000 to 9,999 population | 50.61% | 39.11% |
| Size of institution-Over 10,000 population | 22.26% | 32.89% |

*MSCPA Census includes graduate students majoring in accounting; only undergraduate accounting majors were counted in the survey.

*Reliability of the Accounting Preference Test (APT)*

Cronbach's alpha was used to measure the initial reliability of the 24 items devoted to measuring financial and managerial accounting career preferences (12 items for each). That initial 24-item scale yielded an alpha of .67, generally below accepted standards for adequate internal consistency (0.8 - 1.0 desired, 0.7-0.8 acceptable, below 0.7 poor (Berman, 2007, p. 54)). Inspection of the corrected item-to-total correlations revealed some items with markedly low correlations to the total scale. This suggested that these items measured something different from the scale as a whole, and raised those particular items as candidates for deletion.

In an iterative process, the remaining items were submitted to a reliability analysis again, with the resultant alpha inspected and additional items considered for deletion. This process was repeated five times to yield a 14-item scale with an alpha value of .76, comprising two subscales measuring financial and managerial career preferences. The desire to have a balanced subscale for each accounting area meant the reliability would lessen. The Financial subscale had eight items and the Managerial subscale had six items, with subscale alphas of .69 and .67, respectively. Although desire was for higher subscale

alphas, the overall scale reliability was adequate, and subscale alphas generally are lower than that achieved for the overall scale.

Table 10

APT Subscale Items (14 item total)*

| Reliability Analysis Scale -- *Alpha* = .76 | | |
|---|---|---|
| Subscale (7-point Likert scale used for items) | Mean | Standard Deviation |
| Financial (*alpha* = .682) | | |
| 29 I like collective evidence in support of events that have occurred. | 5.07 | 0.98 |
| 30. I will network with accounting professionals who work with past or current events rather than what could be. | 4.47 | 1.02 |
| 4. I enjoy preparing reports of a repetitive nature. | 4.17 | 1.43 |
| 6. I am exploring a career that utilizes formal guidelines for required reports. | 5.15 | 1.08 |
| 33. I have confidence in steps I can take for a career reporting on external transactions rather than on internal operations. | 4.53 | 0.93 |
| 20. I am more often complimented on my ability to work with detailed information than for information analysis. | 4.50 | 0.98 |
| 21. I like relying on rules in doing accounting work. | 5.15 | 1.01 |
| 28. My parents know me as a person who likes to follow the rules. | 5.32 | 1.27 |
| Managerial (*alpha* = .662) | | |
| 10. My parents know my strong tendency to plan ahead for most of what I do. | 5.29 | 1.34 |
| 19. I will network with accounting professionals whose work is dealing with the future consequences of events. | 4.92 | 1.01 |
| 12. Classmates/members of organizations to which I belong look to me for analyzing problems within our group. | 4.96 | 0.99 |
| 23. I am exploring a career that provides me the opportunity to prepare reports on solutions to a variety of problems. | 5.24 | 0.88 |
| 18. I like working open-ended accounting problems. | 4.61 | 1.24 |
| 22. My best friends know me as a person able to analyze situations from a variety of perspectives. | 5.21 | 0.93 |

*Numbers in front of each item identify the order of survey presentation for these items

*Construct Validity of the APT*

The subscale structure reported above was tested using factor analysis. The fourteen items on the APT were submitted to a principal components factor analysis in SPSS using oblique (Promax) rotations method, with a two-factor solution specified. The rotated factor pattern from this analysis is presented in Table 12 as the initial eigenvalues

and two-factor solution. These two measures of explained variance are shown in Table 11 accounting for 37% of the variance in the data. A full table of the eigenvalues is in Appendix D for the two-factor solution.

Table 11

Two-Factor Solution: Extraction Sums of Squared Loadings and Eigenvalues

| | Extraction Sums of Squared Loadings | | | Rotation |
|---|---|---|---|---|
| Component | Total | % of Variance | Cumulative % | Total |
| 1 | 3.61 | 25.75 | 25.75 | 3.09 |
| 2 | 1.55 | 11.04 | 36.78 | 2.86 |
| | | | | |
| | Initial Eigenvalues | | | |
| Component | Total | % of Variance | Cumulative % | |
| 1 | 3.61 | 25.75 | 25.75 | |
| 2 | 1.55 | 11.04 | 36.78 | |

Extraction Method: Principal Component Analysis

For the factor structure to support the construct validity of the APT, managerial items needed to load on one factor, and financial items on the other. Using Gorsuch's (1983) minimum three criteria for evaluating the factor structure consisted of (1) items loading on the same factor as items in the subscale, (2) components loading on a value of 0 .40 or greater, and (3) a difference of 0.10 between the loadings of the two component values for each item. Inspection of Table 13, next page, reveals that all 14 items met these criteria, indicating support for the hypothesized factor structure. This suggests that the constructs on which the items were developed are empirically valid. The two subscales correlate show a moderate with each other at the $p < .000$ level ($r = .381$).

Table 12

Pearson Correlation of Financial and Managerial Subscales

| Pearson Correlation | Financial Subscale | Managerial Subscale |
|---|---|---|
| Financial | 1 | .381** |
| Significance (2-tailed) | | .000 |
| Number of cases | 228 | 228 |

Table 13

APT Factor Analysis for Financial and Managerial Subscales*

| *Subscales* | Factors | | |
|---|---|---|---|
| | Financial | Managerial | Difference |
| *Financial Subscale* | | | |
| 30. I will network with accounting professionals who work with past or current events rather than what could be. | **.670** | -.004 | .674 |
| 21. I like relying on rules in doing accounting work. | **.652** | .048 | .604 |
| 33. I have confidence in steps I can take for a career reporting on external transactions rather than on internal operations. | **.568** | -.030 | .598 |
| 4. I enjoy preparing reports of a repetitive nature. | **.517** | .065 | .452 |
| 6. I am exploring a career that utilizes formal guidelines for required reports. | **.516** | .260 | .256 |
| 28. My parents know me as a person who likes to follow the rules. | **.510** | .117 | .393 |
| 29. I like collective evidence in support of events that have occurred. | **.502** | .366 | .136 |
| 20. I am more often complimented on my ability to work with detailed information than for information analysis. | **.368** | .204 | .164 |
| *Managerial Subscale* | | | |
| 19. I will network with accounting professionals whose work is dealing with the future consequences of events. | .221 | **.652** | .431 |
| 12. Classmates/members of organizations to which I belong look to me for analyzing problems within our group. | -.177 | **.646** | .469 |
| 23. I am exploring a career that provides me the opportunity to prepare reports on solutions to a variety of problems. | .322 | **.633** | .311 |
| 18. I like working open-ended accounting problems. | -.033 | **.616** | .649 |
| 22. My best friends know me as a person able to analyze situations from a variety of perspectives. | .138 | **.599** | .461 |
| 10. My parents know my strong tendency to plan ahead for most of what I do. | .235 | **.463** | .228 |

* Numbers in front of each item identify the order of survey presentation for these items
Structure Analysis: Principal Component Analysis extraction & Promax w/Kaiser Normalization

Five iterations were made from the original 24 items (12 each) with an alpha of .657. First iteration resulted in 20 items (11 F, 9 M; a = .762) and second resulted in 18 items (11 F, 7 M; a = .771.). The third iteration resulted in 16 items used for balancing the ratio of financial to managerial items (9 F, 7 M; a = .748). The fourth changed the mix of items but not the number of items (10F, 6 M; a = .773) with a higher alpha. The

fifth and last iteration provided a better balance of financial/managerial with 14 items (8F, 6M; a = .746). These changes are shown in Tables 14 A and B below.

*Discussion of Accounting Survey Items Eliminated for APT*

As noted above, development of the APT resulted in the elimination of several survey items in the process of a factor analysis for the financial and managerial subscales. Three of the items, one financial (34 A) and two managerial (17 A and 36 A), from the authority area (Tables 14A Financial Items and 14B Managerial Items), incorporate the religiosity aspect for guidance in career choice. The response to the religiosity items on the RRFS, negative by those intending to enter the managerial area and not statistically significant by those intending to enter the financial area, show a similar pattern in the initial factor analysis. Through the iterative process of eliminating items to improve the alpha, items became less significant overall.

In the process of improving the alpha, other items that appeared to support the financial area (8U) or the managerial area (11T and 24U), pertaining to users of accounting reports and timing of those reports, became less significant. Items 16T (financial area of timing), 2U (financial area for users), and 14A (managerial area for authority) showed little difference in responses as to preference.

An item that might have been poorly worded is 3U (managerial item for users), in that the word precision or preciseness better illustrates the difference in types of reporting when managerial reports may require a quicker turnaround for informing a decision than financial reports of a scheduled, repetitive nature. Accuracy conveys a meaning important to both areas of accounting and properly loaded poorly in each accounting area.

Table 14 A

Iterations for Financial Accounting Area*

| Financial Accounting Items | | Structure Matrix Components | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Users [U], Timing [T], Authority [A] | | 24 | | 20 | | 18 | | 16 | | 16 | | 14 | |
| Q #s | 1-Financial, 2-Managerial | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| 2 U | Classmates/members of organizations to which I belong look to me for adhering to designated procedures for our group. | 361 | 287 | 282 | 362 | 558 | 074 | .645 | .001 | .635 | 029 | - | - |
| 4 U | I enjoy preparing reports of a repetitive nature. | 534 | - 071 | 595 | - 025 | .105 | 556 | 133 | 528 | .124 | 488 | .517 | 065 |
| 6 U | I am exploring a career that utilizes formal guidelines for required reports | 602 | 097 | 580 | 185 | .322 | 497 | 341 | 481 | .328 | 458 | 516 | 260 |
| 8 U | I prefer the cyclical nature of preparing financial statements to preparing one-of-a-kind reports. | 578 | - 306 | 683 | - 266 | - 153 | .705 | - | - | - | - | - | - |
| 33 U | I have confidence in steps I can take for a career reporting on external transactions rather than on internal operations. | 455 | - 036 | 443 | 072 | 026 | 537 | - 030 | 561 | - 035 | 585 | 568 | - 030 |
| 16 T | My best friends note my strong tendency to keep notes and papers from my past classes. | 434 | 208 | 341 | 322 | .442 | 214 | .463 | 200 | .456 | 224 | - | - |
| 29 T | I like collecting evidence in support of events that have occurred. | 537 | 279 | .469 | 397 | 390 | 474 | - | - | 350 | 516 | 502 | 366 |
| 30 T | I will network with accounting professionals who work with past or current events rather than what could be. | 533 | 025 | 544 | 072 | .066 | .614 | -.014 | 662 | - 017 | 685 | 670 | - 004 |
| 20 A | I am more often complimented on my ability to work with detailed information than for information analysis | 358 | 123 | 379 | 154 | 177 | 382 | .107 | 457 | .116 | 425 | 368 | 204 |
| 21 A | I like relying on rules in doing accounting work. | 642 | - 123 | 631 | 015 | 093 | 642 | .082 | 603 | 074 | 636 | 652 | .048 |
| 28 A | My parents know me as a person who likes to follow the rules. | .521 | 046 | 500 | 130 | 288 | .398 | .302 | .410 | 285 | 416 | .510 | 117 |
| 34 A | Strict obedience to God's plan for one's life work leads to an appropriate career choice. | 001 | - 563 | - | - | - | - | - | - | - | - | - | - |

Table 14 B

Iterations for Managerial Accounting Area*

| Financial Accounting Items | | Structure Matrix Components | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Users [U], Timing [T], Authority [A] | | 24 | | 20 | | 18 | | 16 | | 16 | | 14 | |
| Q #s | 1-Financial, 2-Managerial | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| 3 U | I am more often told that I sacrifice accuracy for speed. | -.146 | - 085 | - | - | - | - | - | - | - | - | - | - |
| 12 U | Class/members of organizations to which I belong look to me for analyzing problems within our group | 141 | 454 | 028 | 494 | 646 | - 200 | .740 | -.277 | .738 | -.254 | - 177 | .646 |
| 23 U | I am exploring a career that provides me the opportunity to prepare reports on solutions to a variety of problems | 450 | 454 | .299 | 609 | .596 | 263 | .523 | .356 | 527 | 358 | 322 | .633 |
| 24 U | I enjoy preparing a variety of reports, most of which are not repeated. | -.167 | 558 | - 305 | 594 | - | - | - | - | - | - | - | - |
| 10 T | My parents know my strong tendency to plan ahead for most of what I do | 431 | 269 | 87 | 333 | 548 | .178 | .613 | 131 | .603 | .140 | 235 | .463 |
| 11 T | I prefer planning for future strategies rather than reporting past events. | - 175 | 379 | - | - | - | - | - | - | - | - | - | - |
| 19 T | I will network with accounting professionals whose work is dealing with the future consequences of events. | 302 | 582 | .196 | 652 | 629 | 143 | 513 | 332 | 521 | 283 | .221 | .652 |
| 14 A | I prefer informal problem solving that does not require following "legalistic" guidelines. | -.387 | 413 | - | - | - | - | - | - | - | - | - | - |
| 17 A | One's choice of a professional career need not be affected by one's religion | .148 | 467 | 115 | 384 | .282 | .140 | 162 | .320 | - | - | - | - |
| 18 A | I like working open-ended accounting problems | .061 | 640 | - 052 | 649 | 550 | - 070 | .433 | .098 | .452 | .052 | - 033 | 616 |
| 22 A | My best friends know me as a person able to analyze situations from a variety of perspectives. | .272 | 459 | 168 | 537 | .527 | 123 | 506 | 159 | 509 | 172 | 138 | 599 |
| 36 A | I have more confidence in steps I can take toward building a career than in relying on God's guidance. | .028 | 498 | .002 | 375 | - | - | - | - | - | - | - | - |

*Numbers in left-hand column identify the order of presentation for these items in the Survey, letters represent differences-users (U), timing (T), authority (A)

Within the APT (14-item scale) are items addressing each of the three differences between financial and managerial accounting. The four items addressing the timing of information divide equally between financial and managerial; three items address financial reports for external users with only two items addressing managerial reports; and reporting authority has three items whereas the more informal managerial approach has two items, a total of 14 items with eight financial and six managerial.

*Student Demographics Analyses of Subscales*

The mean scores for the subscales were analyzed to determine if there were any gender differences detectable. Although no significant difference was detected between males and females on the managerial subscale score, a significant difference using a t-test did occur between the genders on the financial subscale as shown in Table 15. Comparing the demographic item of gender to the subscales of financial and managerial accounting, a statistically significant result using a t-test for equality of means emerges that female undergraduate accounting majors prefer financial accounting to that of managerial accounting. No statistical difference existed for male undergraduate accounting majors.

Table 15

Gender Used with Subscales

| | t-test for Equality of Means—Equal Variances Assumed | | | |
|---|---|---|---|---|
| Female students | t | df | Significance (2-tailed) | Mean Difference |
| Financial Subscale | 2.463 | 225 | **.015** | .199 |
| Managerial Subscale | 0.010 | 225 | .992 | .087 |

To determine if any differences in preferences as measured by the APTS subscales existed at different types of universities, a one-way analysis of variance

(ANOVA) was conducted on the two subscales using the three types of universities (public, private/secular, and private/church) as the independent variable. No differences were observed at the $p < .05$ level as shown in Table 16 below.

Table 16

ANOVA for School Type Using Subscales

| | | SS | df | MS | F | p-value |
|---|---|---|---|---|---|---|
| Managerial Subscale | Between schools | .059 | 2 | .029 | .068 | .934 |
| | Within schools | 96.821 | 224 | .423 | | |
| | Total | 96.880 | 226 | | | |
| Financial Subscale | Between schools | .644 | 2 | .322 | .861 | .424 |
| | Within schools | 83.702 | 224 | .374 | | |
| | Total | 84.345 | 226 | | | |

*Discussion of Hypothesis 1*

Hypothesis 1, in the alternative form, stated that undergraduate accounting majors would differ between financial and managerial accounting preferences (as measured by items focused on users, timing, and authority), loading on separate factors in an exploratory factor analysis of the data collected for measuring student preference. The data loaded on separate factors as hypothesized, though reliability as measured by Cronbach's alpha meant that the initial scale would not be acceptable for use with other similar data sets. Through an iterative process, described in a previous section, items were eliminated resulting in a scale with an acceptable Cronbach alpha score for reliability in use with similar data sets. Cronbach's Coefficient Alpha is not a statistical test but is as named, a coefficient of reliability or consistency. A correlation measures consistent reliability, meaning that a test can be reproduced with the same results, all things being equal.

The 14-item APT, comprising two subscales, eight of which are financial item and six managerial items, with a Cronbach's alpha of .76, provides statistical evidence for the alternative form of Hypothesis 1. Undergraduate accounting majors can display a preference for either financial or managerial accounting through use of the APT. The items composing the APT Subscale are listed in Table 13.

## Hypothesis 2

To further validate the financial and managerial subscales of the APT, students were provided an opportunity to indicate in which areas of accounting they would chose a career, both currently and in the future. Responses to those career choices provided the quantitative data for examining the convergent validity of the APT.

### *Convergent Validity of the APT for Current and Future Career Plans*

In addition to construct validation through factor analysis, another strategy for establishing the validity of a scale is the notion of convergent validity. This strategy involves establishing that a given scale correlates with other measures of similar items (or negatively correlates with opposing measures). Convergent validity uses "multi-method multi-trait correlations . . . to show that different methods of measurement of a construct yield similar findings and confirmation of measurement" (Yaffee, 2003, p.12).

The correlations of financial and managerial subscales with current and future career choices are presented in Table 17. The strongest intercorrelation is observed between the financial subscale and both the current preference and future preference for financial career activities (.395** and .348**). The financial subscale also exhibited a fairly strong preference for future managerial career (**.232). While this may seem to undermine the convergent validity of the APT, this may merely reflect student belief that

one should begin one's accounting career in financial career positions and that such experience provides a variety of career choices later in one's career. The managerial subscale correlated significantly with both current and future managerial career choice (.270** and .305** respectively). The managerial subscale for current financial as greater than financial subscale for current managerial may reflect the influence of public accounting in academe. Again, students may believe that a position in public accounting is necessary or strongly recommended for continuing in the accounting profession. Those students with a preference for managerial accounting indicate a stronger desire for a career in managerial accounting, both current and future, than for work in financial at a later date though with some potential for current financial work. A more detailed table of these topics is available in Appendix F.

Table 17

Correlations between APT Subscales with Current and Future Career Choice

| Subscales | Current Financial Career | Future Financial Career | Current Managerial Career | Future Managerial Career |
|---|---|---|---|---|
| Financial Subscale | .395** | .348** | .160* | .232** |
| Managerial Subscale | .171* | .142* | .270** | .305** |
| Current & Future Careers | Financial .759** | | Managerial .800** | |

** p<.001
* p < .05

The subscales correlate significantly with both financial and managerial current and future career choices. The magnitude of the correlations reveals that the strongest relationships are between financial subscale with current and future financial career choice, and managerial subscale for current and future managerial career choice. This suggests convergence of the scales with items where convergence would be expected. Career choice for both the current and the future suggests that those preferring financial

may move into the managerial accounting in the future (.759**), whereas those in managerial, allowing some opportunity for financial current and future careers, are more likely to stay within the one area of managerial accounting during their careers (.800**).

*Discussion of Hypothesis 2*

Hypothesis 2 relates to students' consideration of career goals, both at the present and in the future. Career expectations then were hypothesized that the financial and managerial subscales would correlate significantly with both present and future intent to pursue a career in financial or managerial accounting, respectively. The high profile of the CPA credential may cause students of both preferences, financial and managerial, initially to pursue a career in financial accounting for fulfilling the CPA experience requirement mandated by some states. Because of the CPA credential, the managerial subscale was hypothesized to correlate significantly with a present intent to pursue a career in financial accounting but with a lesser intent to pursue a future career in financial.

As shown above, the financial subscale correlated significantly with the intent to pursue a career in financial accounting currently and in the future, though with the possibility of a future career in managerial. The managerial subscale, in addition to correlating significantly with both current and future career choice, did show more possibility for a student with a preference for managerial to begin with on a financial career course than for a student with a preference for financial to consider beginning in a managerial career. The concept of an initial attachment to a financial career may derive from the emphasis on financial accounting within most academic accounting curriculae as described in Chapter 2.

## Hypothesis 3

The accounting profession uses professional certifications as an indication of achievement within a particular area of accounting as described in Table 18. Other than the Enrolled Agent (IRS), the CPA exam is the oldest and most widely known of the certifications used in this study (Table 6, Ch. 2). To continue the convergent validation of the APT beyond students' indications of career plans currently and in the future, their plans for taking one or several of the professional certification examinations was queried in the survey.

### *Convergent Validity of the APT Using Professional Certification Exams*

In addition to the items tested for inclusion in the APT, the survey also presented items pertaining to the intent to take professional exams in accounting. Five items asked respondents to indicate the likelihood of taking each of the following five professional certification exams: CPA, CMA, CIA, CFE, and CISA. These items were analyzed individually, not collapsed into a mean score.

Further evidence of the interpretation that students may see the financial career path as a necessary first (i.e., "current") step, and that their later aspirations allow the predictive value of the scale to be revealed as previously noted is supported by the pattern of correlations between the subscales and the intent to take different professional accounting exams. While both financial and managerial subscales correlate significantly with intent to take the CPA exam (F .180**, M .238**), only the managerial subscale shows persistent correlations with intent to take the other professional exams. The fact that the managerial subscale correlates significantly with preference to take the managerially oriented exams, while the financial subscale does not, supports the

convergent validity of the APT. Of interest is the higher interest in the CPA exam by those preferring managerial accounting.

Table 18

Correlations between APT Subscales and Exam Intent

| Subscales/Exam | CPA | CMA | CIA | CFE | CISA |
|---|---|---|---|---|---|
| Financial: Pearson Correlation | .180** | .118 | .125 | .083 | .051 |
| Significance (2-tailed) | .007 | .078 | .062 | .213 | .443 |
| N | 225 | 225 | 225 | 225 | 225 |
| Managerial: Pearson Correlation | .238** | .194** | .139* | .163* | .169* |
| Significance (2-tailed) | .000 | .004 | .038 | .014 | .011 |
| N | 225 | 225 | 225 | 225 | 225 |

* $p < .05$
** $p < .01$

*Discussion of Hypothesis 3*

Hypothesis 3 consisted of three parts related to the types of professional certification examinations students preferring financial accounting or managerial accounting would expect to take. Five choices of professional certification exams were listed: CPA, CMA, CIA, CFE, and/or CISA (Table 6, Ch. 2). As hypothesized both the financial and managerial subscales of the APT correlated with the intent to take the CPA examination. Reasons have been offered for the prominence of the CPA credential in both Hypothesis 1 and 2.

*Hypothesis 3b*: Managerial accounting subscale scores should correlate significantly with intent to take the CMA, the CIA, the CFE, and/or the CISA exam. This subset of the hypothesis worked as predicted in that those who preferred managerial accounting did plan to take the CIA exam.

*Hypothesis 3c*: Managerial accounting subscale scores may correlate significantly with intent to take the CPA exam. This subset of the hypothesis was validated by a

significant score of .238, higher than that of the students who preferred financial accounting.

Hypothesis 3 assumed that undergraduate accounting majors would plan to acquire the CPA credential against a background of its importance in a professional accounting career. Also hypothesized was that those students preferring financial accounting according to the financial subscale would correlate significantly with an intent to take the CPA exam and those students preferring managerial accounting according to the managerial subscale would correlate significantly with an intent to take the CMA, CIA, CFE, and/or CISA exam.

The results of the survey confirm that students who preferred financial accounting per the financial subscale, intended to take the CPA exam, as did students who preferred managerial accounting.

After the financial, managerial, and religious items, respondents were asked to indicate the degree to which they believed the CPA exam was essential to being considered a professional accountant. A t-test of two-samples was done with this item (Item # 37) and the item for intent to take the CPA exam. The results of the statistical test are shown below.

With a mean of 4.0 on a 7-point Likert scale as used in this study, the mean for Question 37 (3.75) indicates disagreement with the survey item ("One must be a CPA to be considered a professional accountant.") whereas the mean of the survey item "My intention to take professional accounting examinations" for the CPA exam was almost 6 (5.98) "moderately likely" out of a possible 7 ("extremely likely"). With a test result that essentially no probability exists that in one question the respondents' opinion is that the

CPA exam does not designate an accountant as a professional yet for intent to take professional exams, the CPA exam is the professional exam of choice for those with a preference for financial and those with a preference for managerial. This may indicate that students resist the concept that having the CPA credential confers professional status.

Table 19

CPA as the Professional Credential in Accounting and Intent to Take CPA Exam

| Two-sample *t*-test | Item # 37 IV | Intent to take CPA exam |
|---|---|---|
| Mean | 3.75 | 5.98 |
| Standard Deviation | 1.66 | 1.60 |
| Observations | 225 | 225 |
| df | 224 | |
| t | -15.804 | |
| P(T < = t) two-tail | .000 | |

IV-Independent Variable/Predictor; DV-Dependent Variable/Outcome

Those students who are not interested in public accounting and do not plan to take the CPA exam may consider that other professional examinations and areas of accounting also confers professional status. This disparity in the means of the two items possibly reflects the disparity between financial and managerial accounting in the choice of topics taught, emphases placed on the importance of concepts, and other professorial choices within the accounting major.

## Hypothesis 4

To investigate the relationship between the APT subscales (preference for financial accounting or for managerial accounting) and the RRFS (measure of fundamentalism) for statistical evidence, a correlation analysis was conducted. This analysis revealed that the fundamental manner in which religious beliefs are held is not significantly related to a preference for financial accounting that involves supplying information to external users, working with past data, and adhering to authoritative

standards as descriptive of those in financial accounting. However, the fundamental manner in which religious beliefs are held is related to those who indicate a preference for managerial accounting. Managerial accounting is not bound by authoritative pronouncements, the use of historical data, and interaction with external users of financial information. Managerial accounting uses a decision-making approach that relies upon information about the future for specific problems or opportunities that would help improve managers' decisions for their company or organization. The analysis also revealed that the correlation between the financial subscale and the RRFS was near zero, but the correlation between the managerial subscale and the RRFS was significant but in the negative direction ($r = -.22$, $p < .001$). This suggests that the stronger the preference for managerial accounting, the less likely one is to hold religious beliefs in a fundamentalistic way.

Table 20

Preference for Financial or Managerial Accounting and Fundamental Manner of Holding Religious Beliefs

| | | Religion |
|---|---|---|
| Financial Subscale | Pearson Correlation | -.032 |
| | Significance | .626 |
| Managerial Subscale | Pearson Correlation | -.211 |
| | Significance | **.001** |

*Results Using Demographic Items and Religiosity*

The religiosity items, the fundamental manner in which religious beliefs are held, compared to the type of college or university, public, private and secular, and private and church-related found no statistical significance between the types of institutions, private church-related, private secular institutions, and public was found. In addition, a

correlation of the religiosity items and gender showed no significant relationship for either female or male respondents.

A one-way ANOVA with multiple comparisons, students preferring financial accounting, students preferring managerial accounting, and the RRFS, did show that GPA had some significance among those students preferring managerial accounting who were within a grade category representing a range of 3.00 to 3.99 GPA. From the table below

Table 21

One-way ANOVA of GPA with Financial, Managerial, and RRFS Scale

| | | Sum of Squares | df | Mean squares | F | Sig |
|---|---|---|---|---|---|---|
| Financial | Between Groups | 1 318 | 3 | 439 | 1 176 | 320 |
| | Within Groups | 83.663 | 224 | 373 | | |
| | Total | 84 981 | 227 | | | |
| Managerial | Between Groups | 4 091 | 3 | 1 364 | 3 241 | **.023** |
| | Within Groups | 94 247 | 224 | 421 | | |
| | Total | 98 337 | 227 | | | |
| RRFS | Between Groups | 2 336 | 3 | 779 | 639 | 591 |
| | Within Groups | 273 039 | 224 | 1 219 | | |
| | Total | 275 375 | 227 | | | |

Multiple Comparisons-- Using Bonferroni

| Dependent Variable | GPA category | GPA category | Mean Difference | Std Error | Significance |
|---|---|---|---|---|---|
| Managerial | 1.00 [2.5-2 99] | 2 00 | .07484 | 14788 | 1.000 |
| | | 3 00 | -.21795 | .14097 | 741 |
| | | 4.00 | - 07509 | 21502 | 1 000 |
| | **2.00 [3.0-3.49]** | 1 00 | - 07484 | 14788 | 1 000 |
| | | **3.00** | - 29279* | 09683 | **.017** |
| | | 4 00 | -.14994 | 18905 | 1 000 |
| | **3.00 [3.5-3.99]** | 1.00 | .21795 | 14097 | 741 |
| | | **2.00** | .29279* | .09683 | **.017** |
| | | 4 00 | 14286 | .18369 | 1 000 |
| | 4.00 [4.0 or above] | 1 00 | 07509 | 21502 | 1 000 |
| | | 2.00 | 14994 | 18905 | 1 000 |
| | | 3 00 | - 14286 | 18369 | 1.000 |

(Table 21), the GPA variable was significant (.023) for those students preferring managerial accounting. The use of the Bonferroni correction produces a more conservative approach by lowering the alpha based upon the number of cases or tests

used. The "Multiple Comparisons" accompanying Table 21 provide the details of the GPAs of students with a managerial preference, 3.00 to 3.99, tested against students preferring financial accounting and the RRFS. These students would fit the managerial category that rejected the fundamentalistic manner of holding one's religious beliefs (Table 20).

Based upon a usual grade range in the U. S. these students are the B-students, academically good students. They may choose managerial accounting because of the variety of opportunities managerial accounting offers (note from Table 18 that students having a preference for managerial accounting indicate the desire to take the broad range of accounting-credentialing exams). They possibly do not meet what may be considered the "cream of the crop" who are striving for a place in a Big Four public accounting firm and would probably be among the higher-grade category of A for students. Other possibilities for having a managerial preference exists, such as not having a requirement for an advanced degree (150-hour requirement for licensure as a CPA), strength of the job market, location (rural or metropolitan), reputation of workload, travel requirement/possibility, longer-term potential for promotion and salary increases, and family issues, among others.

*Discussion of Hypothesis 4*

This hypothesis directly addresses the research question, that of religion making a difference in forming a preference for either financial or managerial accounting as an undergraduate accounting major. Two subsets accompany this hypothesis:
Hypothesis 4a: Financial accounting subscale scores should correlate significantly with religious fundamentalism as measured by the Revised Religious Fundamentalism Scale.
Hypothesis 4b: Managerial accounting subscale scores should not correlate significantly with religious fundamentalism as measured by the Revised Religious Fundamentalism Scale.

The results of the test for measuring these hypotheses went in a different direction than expected. Though the results went in a different direction, a significant result was found; a result that addressed those who prefer managerial accounting. Managerial accounting subscale scores correlated significantly with a negative attitude toward religious fundamentalism. The wide variety of types, diverse nature, and push for expeditious accumulation of relevant information for the decisions that managerial accountants acquire may suggest that such work operates from practical application rather than general principles. Financial accounting subscale scores did not correlate as that relationship was essentially nil. Those students preferring financial accounting may take the fundamental nature of the system somewhat for granted, and therefore, may not consider the larger but underlying nature of the system.

*Summary of the Results of Hypothesis Testing*

Results of the survey of undergraduate accounting majors enrolled in colleges and universities in Missouri for testing religiosity as a significant factor for determining a

preference for either financial or managerial accounting supported the hypothesis that accounting subscales would correlate significantly with religious fundamentalism as measured by the Revised Religious Fundamentalism Scale. Though the correlation occurred, those undergraduate accounting majors who preferred managerial over financial accounting provided the significant results by rejecting religious fundamentalism as a factor in their preference for managerial accounting. The hypothesis was that those accounting majors who preferred financial accounting would respond to the survey items that would show significant correlation with religious fundamentalism as measured by the RRFS and that those preferring managerial accounting would show no correlation with the scale. The results of the survey showed that the financial accounting subscale scores did not show any correlation with the religious fundamentalism scale. The significant correlation was that of the managerial subscales scores and that correlation was a repudiation of religious fundamentalism as a factor in determining preference for managerial accounting.

The hypotheses concerning accounting preference and religious fundamentalism could be measured because accounting subscales were developed through exploratory factor analysis of 24 survey items resulting in the Accounting Preferences Test (APT) of 14 items of which eight were financial-based and six managerial-based. A reliability analysis scale of .76 for the 14 item-scale came from factor loadings processed according to Gorsuch's directions for iterative deletion of items for obtaining acceptable alpha scores above .70. A description of determining construct validity for the APT through factor analysis was noted in the section of this chapter "Construct Validity of the APT." Significant convergent validity measures were developed as described in Hypotheses 2

and 3 in this chapter. Significant results were determined through various statistical measurements (Table 8 in Chapter 3) for Hypotheses 1, 2 and 3.

With positive results for Hypotheses 1, 2, and 3, and interesting results for Hypothesis 4, some conclusions can be formed and questions raised as to the ramifications of this initial testing of the role of religion in determining preferences for different areas of accounting during the undergraduate process of majoring in accounting. These conclusions and questions raised are addressed in Chapter 5.

# CHAPTER 5 – SUMMARY AND DISCUSSION

The following discussion of the findings of this study suggests that undergraduate accounting majors have preferences for a particular area of accounting and that their choice of preferred area of accounting is affected by the manner in which religious beliefs are held.

## Religiosity in Accounting Preference

Using the concept of fundamentalism as the manner of holding one's religious beliefs, those undergraduate accounting majors indicating a preference for managerial accounting responded negatively to statements based upon the "the belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity" (Altemeyer & Hunsberger, 1992, p. 118). The preference for managerial accounting included items advocating an open-ended, decision-making approach to providing decision makers with information. Testing from a fundamentalistic approach of believing in an authoritative set of standards with which to view humanity revealed that those with a decision-making approach to providing information for intra-company decisions were stronger in their opposition to fundamentalism than those whose work shares traits with fundamentalism, presenting historical data in accordance with authoritative pronouncements to external parties. Students with a preference for financial accounting showed no statistically significant agreement or disagreement in their responses to the RRFS items (Table 20).

### *Discussion of the Results of the Religiosity Measure*

That undergraduate accounting students expressed preference for either financial or managerial accounting through the convergence of personal attitudes, social

relationships, and manner of holding religious beliefs fits within the relationships described by the sociology of knowledge, specifically the construct that defines social reality via the dialectic relationships of the three elements. Religiosity has an impact in determining student preference along with personal and social factors.

*Literature from Managerial and Financial Perspectives in Relation to Religion*

The U. S. accounting literature that incorporated some aspect of religion, described in Chapter 2, provides an opportunity to reflect on religious measures and their importance to this study. The articles relating to internationalization of financial reporting standards cited the differences created by ideologies, major religions holding conflicting belief systems that affect a profession's standards-setting process. The ethics studies provide an aspect of external versus internal orientation akin to the difference in users of accounting information: users of financial statements are external and they can read only about the results of internal activities; whereas the internal users of managerial information must live with the results of the internal activities adopted based upon managerial accounting reports. The Harmonists of Indiana provide a model managerial accounting system at work.

Lynn White (2004) summarizes the role of religion in setting standards for financial reporting in that the product of a global standard should not be a "one-size-fits-all" approach (2004). Islamic corporate financial reports privilege Allah's directives over Western financial standards in philosophical viewpoints, principles, and criteria creating the need for two basic formats. She writes, "It appears that religion is a significant cultural variable that exerts considerable influence both on how financial information is formed and how it is utilized" (White, 2004, p. 9). She further suggests two formats for

reporting financial information: a format that "would fully comply with IASC [International Accounting Standards Committee] and would prescribe a specific accounting treatment for each area reported. The second format, if so elected by a company, would allow companies to publish financial statements prepared according to national priorities and customs" (pp. 9-10). Ignoring religious belief systems in the attempt to develop one system of financial reporting privileges one perspective over another. Financial reporting is based upon serving the public interest and, therefore, should accommodate those users who incorporate a moral or ethical stance within their religiosity by allowing, or even promoting, financial statements that address religious beliefs.

Within the four studies of ethics of accountants, practitioners and students, in which religion was an independent variable, are differing results (Table 3). In three of the articles, the independent variables representing religion were belief in heaven (Riahi-Belkaouri, 2004), level of church attendance (Riahi-Belkaouri, 2004; Emerson, Conroy, & Stanley, 2007), self-reported religious fervor defined by items on the survey instrument, "I derive my ethical beliefs from deep religious values" and "If I have time, I seek guidance of a religious person or text as a way of finding answers to ethical dilemmas" (Keller, Smith, & Smith, 2007, p. 312). These variables describe religious behaviors, although the statement of holding "deep religious values" may have multiple meanings. The primary conclusion formed by the authors of these articles is that religious behavior is associated with stronger ethical attitudes and principles.

In the fourth article in which religion was an independent variable, Adnan and Sulaiman (2007) examined budgetary slack, an ethical issue, and religion in a Muslim

manufacturing environment. The authors hypothesized that religious commitment, religiosity, would influence managers' propensity to create budgetary slack. This study, compared to the other three studies that used religious behaviors, used religious beliefs. Perspectives examined for considering religiosity, religious beliefs, as a factor in the study were three related concepts: 1) *religious identity salience* and *religious motivational intention* (Weaver & Angle, 2002; e.g. Adnan & Suliaman, 2007, p. 22); 2) *intrinsic* and *extrinsic*; and 3) force and scope (Geertz, 1968; e.g. Adnan & Suliaman, 2007, p. 22). Religious motivational intention, extrinsic, and scope are referenced as the social practice of religion as a means to an end. Religious identity salience, intrinsic, and force refer to internalization of religion such that oneself identity is defined by one's religious beliefs. Results were insignificant that religious beliefs affected budgetary slack.

In their analysis of the results, Adnan and Suliaman suggested that "capitalistic tendencies of managers, whatever their religious persuasion" help develop a materialist philosophy among managers, which then lessened the influence of religion. They defined the three religious concepts noted above, as the difference between "religiousness" and "religious-mindedness" such that "religiousness is not merely knowing the truth, but embodying and living it. Religious-mindedness, on the other hand, offers reasons for one's beliefs" (Adnan & Suliaman, 2007, p. 27). They offer, "it might be concluded that the Muslim respondents illustrate a religious-minded disposition as opposed to a religious disposition" and that the contention that religiosity could restrain a Muslim from engaging in a dysfunctional behavior like slack creation was not supported in this study" (p. 27).

These researchers described several studies in which "the relationship between religiosity and ethical behavior tends to find little evidence of an effect" (p. 22) before conducting their study. They did identify one article that "reported a small positive association between religious beliefs and attitudes toward statements of corporate social responsibility" (p. 22). Hill and Hood (1999) provide a chapter of "Scales of Religious Orientation" in their compendium of religious measures that includes measures of extrinsic (external) and intrinsic (internal) religious orientations. Gordon W. Allport, who with J.Michael Ross developed the Religious Orientation Scale measuring extrinsic (convenience) and intrinsic (motive) orientations, "asserted that not all religion is created equal; that is, although any two individuals might engage in similar religious behaviors, such as church attendance, their underlying motives may differ" (Hill & Hood, 1999, p. 119). The Allport and Ross scale is labeled by Hill and Hood as "the single most dominant research paradigm in the psychology of religion . . . that probably did more that (sic) anything else to foster the empirical investigation of how one approaches religion" (p. 119).

For this research study of undergraduate accounting majors' preference for either financial or managerial accounting, the Allport & Ross scale was considered. However, the intention of this study was not the degree of religiosity or religious belief but the manner in which religious beliefs of undergraduate accounting majors are held, that of fundamentalism. Using a fundamental manner of holding religious beliefs for determining preference for either financial or managerial accounting was the issue rather than whether the individual student was " 'using' versus 'living' " his or her religion [extrinsic versus intrinsic] (Hill & Hood, 1999, p. 145). The further study of the degree of

religiosity ("using versus living"), such as extrinsic versus intrinsic for the study of ethical stances, among undergraduate accounting majors for specific purposes could provide information that would aid in understanding students' approach to ethics and other moral stances.

The descriptive study of the Harmonists or Rappites (Flesher & Flesher, 1979) may provide some insight into the results of this research of undergraduate accounting majors who prefer managerial accounting. The Harmonists provide an example of an intentional intragroup society, offering a look at managerial accounting operating in a setting in which each person is working for the benefit of every other person, an idyllic situation. The authors describe in their abstract what they found in their study of the Harmonists:

> Managerial accounting is a product of its environment. Consequently, different forms of societal organizations will have different levels of sophistication in their accounting systems. This is evidenced by the accounting system of the Harmonists, a communistic religious society on the Indiana frontier (1814-1824). Whereas most of American society consisted of individual merchants, craftsmen and farmers, the Harmonists had an integrated economy with everyone working for the common welfare. The Harmony conglomerate necessitated a system with greater sophistication than those in other parts of America (Flesher & Flesher, 1979, Abstract).

Examples of managerial accounting included records of human resources, departmentalization and responsibility accounting, transfer pricing, forecasted income statements and budgets with recognition of sunk and relevant costs, productivity, and

attention to detail and preservation of records, including inventory. The group did not have to report to outsiders so their reporting system was strictly internal, "not an outgrowth of a financial accounting system" (p. 298).

The intragroup aspect of managerial accounting, providing information to those within the organization, orientation toward the future, and utilizing a variety of reports, helped define those undergraduate accounting majors who preferred managerial accounting and it describes the Harmonists, a communistic community. The commonality of traits toward accounting suggests that those undergraduate accounting majors who indicated a preference for managerial accounting would prefer a working environment similar to that of the Harmonists though their manner of holding religious beliefs might differ. One belief of society members was that the end of the world was soon to occur. The group dissolved in 1916 after Rapp's death (Flesher & Flesher, 1979).

The few instances of the use of religion in accounting studies in the United States show that religion provides a perspective for examining the behaviors and beliefs of those who work in accounting. Some of the accounting journals published in Great Britain, for example, provide and support opportunity for engaging religion in an accounting study (Table 2).

Many reasons may be explored in considering the results of this study as to the difference in the manner of holding one's religious beliefs that affects an undergraduate accounting major's preference for either financial or managerial accounting. With the use of undergraduate students, mostly juniors and seniors in this study, their age range is likely to be fairly compact or small. Age may be one of the untested variables in this study.

The lack of significant statistical results in measuring a relationship between undergraduate accounting majors who prefer financial accounting to the tenets of religious fundamentalism may reflect age-related psychological change. Psychologists who have studied moral development place the beginnings of adulthood at about age 25, typically a few years past graduation from a college or university for those in bachelor-degree programs (Fowler, 1981, 2000; Kegan, 1982; Chickering & Reisser, 1993; Parks, 2000). The undergraduate student would have passed through childhood, internalizing norms of parents and other adults, into adolescence with its "search *for* identity rather than an expression *of* identity" (Fowler, 1981, p. 82). During this time, post high school, undergraduates are likely in the throes of a crisis of identity, "a kind of transitional moral relativism, which necessarily emerges as persons dis-embed themselves from conventional moral thinking and begin to be critical of it" (Fowler, 1981, p. 81). Survey respondents favoring financial accounting may have reacted to the religious fundamentalism items by not taking a position. The respondents favoring managerial accounting may have reacted in a similar manner but they chose to take a negative stand rather than be ambivalent.

That few of the survey takers chose a positive attitude toward the religious fundamentalism items is of interest, allowing other testing opportunities to provide further insight as to the role of religion in accounting. The results of this study show that preferences for financial and for managerial accounting differ on religiosity. The scale, consisting of the two subscales, may not have differentiated financial from managerial precisely as hoped, but the APT results seems clear enough for addressing the research question in that the manner of holding one's religious beliefs makes a difference to those

with a preference for managerial accounting as supported by the statistical results of this study. Within this result, that undergraduate accounting majors who prefer managerial accounting expressed a statistically significant negative attitude toward religious fundamentalism clearly implies a difference in preferences between managerial and financial accounting preferences for undergraduate accounting majors.

## Accounting Curriculum Considerations

Statistical results support that undergraduate accounting majors have identifiable preferences for either financial or managerial areas when using differences classified as intergroup and intragroup. These categories derive from accounting work involving the users of accounting reports (external or internal to the organization), timing of those reports (historical or past information or present/future oriented information), and the basis of authority under which the reports are derived (formal standards or decision specific). The different preferences correlate with career choice at present and those career plans for the future (10 years hence). A financial bias appears to exist for present career choice with inclination to take the CPA exam among most of the students surveyed. The longevity and legal recognition of the CPA credential very likely affect student choice for types of exams taken.

Based upon the history of accounting education with its emphasis on financial accounting, the divide between financial and managerial preferences indicates that some accounting majors may benefit from a curriculum in which the characteristics of managerial accounting are more predominate. Greater emphasis on managerial accounting topics and theory could foster more qualified entrants who could be more productive earlier in their employment. A model developed at Kansas State University,

one example of a school that received an Accounting Education Change Commission grant designed to build a 150-hour program, works from "a career-neutral accounting curriculum" for the undergraduate and four "specialization tracks within its master of accountancy program: financial accounting and auditing, management accounting and controllership, taxation, and enterprise information systems" (Deines & Valentine, 2007). This type of program does not operate on predisposition to a particular accounting direction and provides accounting majors the opportunity to follow their preference of career choice, a positive step toward accommodating accounting preferences. The notion of career neutral accounting education is supported by this study using undergraduate students' preference for financial or managerial accounting.

As noted in Chapter 4 "Comparison of Financial and Managerial Areas" some colleges and universities offer a major in management accounting. With the information that some undergraduate accounting majors develop a preference for managerial accounting, academics could take the opportunity to develop courses specifically designed to provide more theory-based knowledge along with managerial experiential offerings at both or either the undergraduate and graduate level. Doctoral programs could be based upon developing more managerial courses, encompassing a wider variety of topics and theory for creating management accounting majors. Such majors would do more than merely assemble a variety of undergraduate accounting, business, and economics courses. They could impact course content for the business and economics courses. With the possibility of different types of managerial accounting courses, the business major at most undergraduate schools could be enhanced, attracting some of those majors into a managerial accounting programs that would possibly be more

appealing, either as a double major or for selecting a graduate school major in management accounting.

The undergraduate accounting major could draw more equally upon these two areas, financial and managerial, to introduce students to the diversity available within the profession of accounting. If the introduction to the accounting major emphasizes one area over the other (as it currently does), potential majors can be lost from seeing accounting as existing in more than one dimension. College students partially select a major based upon peer influence (Smart, 2003). Providing a perspective of the profession of accounting as a broader arena may interest a wider range of potential entrants, those of one's peer group.

### *The Role of the CPA Credential*

Though survey results indicated that respondents did not support the concept of the CPA as "the" professional designation for accountants, students supported taking the CPA exam with a positive response to "intent to take CPA exam" survey item (Table 20). Future career plans closely aligned with the use of the APT-recognized preferences, with those indicating a financial preference choosing a future career in financial accounting and, likewise, those indicating a managerial preference choosing a future career in managerial accounting. However, responses from two other survey items run significantly counter to students' response that a professional accountant is a CPA. Student responses, from those preferring financial accounting and those with a preference for managerial accounting, were positive and significant for a "present" career choice of financial accounting. Again, both students preferring financial and those preferring managerial responded with a significantly positive response to intent to take the CPA

exam with managerial scoring .25 and financial with only a .20. Undergraduate accounting majors are poised between a job market in which 93% of professional accountants "work inside organizations in value-adding, decision-support roles (vs. the other 7% who work in assessment or compliance roles)" (Clinton, 2007).

The membership of the AICPA seems to confirm this pattern of beginning a career in financial accounting (CPA) and then moving into a managerial career, hence the need for joining with the Chartered Institute of Management Accountants (CIMA) to support those AICPA members working in managerial accounting. Some of the leadership of the IMA at that time were upset that the CIMA made the choice to join with the AICPA rather than with the IMA (Smith, 2006). Neither the AICPA nor the IMA seem to want to work together to form an umbrella organization for the profession of accounting. Both organizations operate worldwide. For example, through the NASBA, the AICPA has mutual recognition agreements with Australia, Canada, New Zealand, Ireland, and Mexico (NASBA, 2011). The IMA, likewise, offers the CMA exam globally (IMA 2011).

Taking the exams, either or both the CMA and the CPA, is expensive and requires time to prepare and sit for the exam. A requirement of 150 credit hours for licensure in most States in the U. S. (NASBA, 2008) adds an additional 30 credit hours beyond the typical baccalaureate degree, requiring more expense of time and money. However, the students responding to the survey item that the CPA is not the designation of a professional accountant, also responded to related survey items indicating a disconnect between what the CPA means and the supposed "requirement" to take it and work in the related area.

The history of the development of the accounting profession within the U. S. shows that the first "professional" organization of accountants was an umbrella group, open to all accountants such as auditors, academics, management, governmental, etc. Within a few years, due to the influence of the British who began a separate organization (forerunner of the AICPA--Table 6), accountants began to organize as separate groups (managerial and financial) (Zeff, 1984; Johnson & Kaplan, 1987), in contrast with the professions of medicine and the law with their single overarching professional organizations (ABA, nd; AMA, nd). Auditing was elevated through the SEC (Previts & Merino, 1998); managerial accountants have been impacted by Sarbanes-Oxley (SOX) (Matherly, McWhorter, & Frizzell, 2005; Walker, 2008). This may be the time to encourage NASBA to work toward one accounting examination with a licensure aspect. Separate exams or credential could then be obtained through areas of specialization within the profession of accounting allowing accounting majors to take one primary examination with the licensure aspect, equal combination of financial and managerial accounting concepts, and then, if desired, take additional exams within specific specialization areas.

*Female Preference for Financial Accounting*

Women are joining CPA firms at a higher rate than men, shown by an increasing trend over the past four decades after anti-discrimination laws were passed, specifically Title VII of the Civil Rights Act of 1964. This Act was strengthened in 1972 and Title IX became law, a law banning gender discrimination in educational institutions receiving governmental funds. Several factors influencing this trend are "social change,

governmental legislation, and greater attention to female employees' needs" (Gold, 2007; Koretz, 1997; Joyce, 2007; Cavaluzzi, 2007; AccountingWEB-KPMG, 2007).

Women may prefer a career in financial accounting over that of a career in managerial accounting for several reasons. Flexibility of workload, especially in smaller CPA firms and/or with tax work, may seem a greater possibility throughout the year or on a weekly/daily basis than that of working for an organization with a more constant workload.

Women are joining CPA firms at a higher rate than men, shown by an increasing trend over the past decade or two (have information on this from research a student did this past spring). Women may be attracted to the professional status associated with work with a public accounting firm (if prior analysis proved correct on CPA and professional status). Professional status was denied women in earlier times and they are making up for that earlier discrimination. According to the AICPA "women represent approximately 30 percent of the current AICPA membership, a percentage that is increasing each year. . . . an average of 56 percent of new accounting graduate over the past five years were women" (AICPA, 2011 February; Feucht, Kratchman, Smith, & Smith, 2008).

As the accounting professoriate gains in percentage of female instructors/professors, the number of female students has also increased. The women professors provide a role model for the women students (Canes & Rosen, 1995; Violette & Pryor, 2005; Hasselback & Yost, 2007 May; *e g.* Billinger, 2008).

## Contribution to Career Guidance in Accounting

The development of a scale indicating preference for financial or managerial accounting at the undergraduate level provides those persons who work with students an

opportunity to use a concise and practical approach in identifying career choice within accounting. Combining religiosity with personal and social factors shows the interaction of these three elements provide an additional dimension for one's way of knowing as it relates to career choice for either financial or managerial for undergraduate accounting majors. The responses of academic accountants and accounting practitioners from various types of colleges and universities to the subscales and RRFS could be helpful and interesting.

Use of the APT with accounting faculty and with practitioners could foster the development of other, novel scales for identifying personal, social, and religious factors that would guide good career choices. Much good research about careers and preferences has come from Holland's work using personal and social perspectives for career choice (Arayna,Barak, & Amernic, 1981; Aranya, Meir, & Bar-Ilan, 1978), but these studies do not include the religious perspective.

The importance of the impact of collegiate socialization offers another research possibility, that of using the APT or a similar scale, for testing friends of accounting majors, to test for like preferences. The APT might also be used with business majors during a financial accounting course and during a managerial accounting course. Business majors with some of the same preferences possibly could be guided into the field of accounting upon recognizing a preference for either financial or managerial accounting.

## Limitations of the Study

The following areas represent limitations of this study and represent topics for additional research.

Participants were enrolled undergraduate students within Missouri colleges and universities. Though Missouri is representative of the United States in many ways, it does not capture cultural forces from very large cities and coastal areas. Stronger preferences for either financial or managerial accounting might result from measuring preferences of students in other areas of the United States, areas with greater diversity of ethnicity, religious preference, and socio-political attitude.

Accounting specializations continue to increase. This study used only two broad categories with placement of the specializations within either financial or managerial. In this study, managerial accounting included cost and management accounting, information systems, internal auditing, and forensic or fraud accounting. Financial accounting included basic financial statement preparation, public accounting (external audit), tax, governmental, and not-for-profit areas. By necessity, there is some arbitrariness in such assignment. The rearrangement of these areas and the use of other categories of accounting specializations could possibly offer different perspectives of student preferences, thereby increasing the number of accounting areas beyond those either of financial or managerial.

The selection of the three differences, users, timing, and authority, resulted from a variety of sources including descriptions of the activities of financial and managerial accounting in studies of the work in those areas and from descriptions in accounting textbooks comparing the two areas. Those differences seemed to be the most familiar to the students in the pilot testing of the survey items. These three differences fit within the concept of intergroup and intragroup behaviors. As noted earlier within this chapter, student characteristics change over time. Not only do they mature but also they form a

generation-type, such as Baby Boomers, Gen-Xers, Millennials, Generation Z, etc. The electronic revolution ushered in new ways of behaving and working. As the revolution continues the accounting, profession will continue to change as it has with internationalization forces. How information is obtained and disseminated may change the difference designated as "users" and the concept of "timing" in this study as access to real-time data may change integration of groups and kinds of information and what is perceived as knowledge. Some concept of "authority" will probably continue to be a characteristic of financial/managerial output.

The Revised Religious Fundamentalism Scale (RRFS) by Altemeyer and Hunsberger (2004), though deliberately chosen for its straightforward approach and wording to favor one area of accounting (based on users, timing, and authority) over the other, provided negative result rather than the positive hypothesized. The use of extrinsic and intrinsic approaches to one's religious orientation, as described using the Adnan and Suliaman study (2007), could have tested the external focus (intergroup aspect) versus internal focus (intragroup), although no significant results were obtained in their study. Within the study of religiosity and accounting, the use of religious behaviors (church attendance, pray weekly) might garner more positive feedback about religiosity than the use of statements describing a religious ideology (fundamentalism). Perhaps accounting, unlike the professions of medicine and the law with their Hippocratic Oath and Constitution, respectively, provides students with a practical/behavioral ideology that does not seemingly have a theoretical and altruistic basis that is held forth as an ideal. This lack of a "higher ground" for the profession may be a result of the dearth of U. S. accounting literature that addresses religion. Interestingly, NASBA has developed a

Center for the Public Trust "to champion the public trust" (2011) whereas, the AICPA Code of Professional Conduct "serves the public interest" (AICPA, 2011), and IMA has a "Statement of Ethical Professional Practice" admonishing members to behave ethically (2011). The U. S. accounting profession addresses the personal and social dialectic of Berger and Luckmann's construct of one's way of knowing but very little of its sacred cosmos, usually understood to be religiosity (1966). Religion made a difference in this study of undergraduate accounting majors' preferences for financial or managerial accounting. The profession should encourage more studies integrating religion within the social and personal aspects of the way an accountant makes sense of reality or of his or her way of knowing about life.

## Further Research

The limitations noted in the previous section also serve as the basis for suggesting additional research. Although abundant possibilities for research about the role of religion in the profession of accounting within the United States exist, only three specific areas are encouraged here. Areas for research studies include 1) the overall role of religion in the profession of accounting, 2) the role that religion has for accounting faculty and their affect on accounting instruction in different types of institutions of higher education, and 3) the role of the CPA credential and the ethical concerns associated with it being hailed as the professional standard for all undergraduate accounting majors, regardless of preference for an area of accounting and with the reality that public accounting does not employ the bulk of accounting graduates.

*Role of religion in accounting*

Religiosity, measured with other approaches than the RRFS, could signal other differences between those students who prefer managerial accounting to financial accounting. A variety of scales exists to measure approaches to religiosity (Hill & Hood, 1999). Additional studies using different aspects of religious beliefs would add to the body of knowledge and its impact on those who practice and those desiring to enter the profession of accounting.

Studies of ethics, using both religious behaviors and ideologies, addressed in a variety of approaches, testing accountants who practice in different areas of accounting and at different stages in their careers could provide insight for understanding what role religion plays in decision making and interactions with others, including clients, colleagues, and those in authoritative positions. Of special interest would be studies of the AICPA's concept of what public accounting means by the phrase "serves the public interest" in relation to a higher calling, higher in the sense of Berger and Luckmann's sacred cosmos or that of a spiritual nature. Do some professional accountants sense that serving the public interest is something of a sacred duty or is it simply recognizing that many in the public sector have an interest in the products or services of financial accounting? Do ethics and morals have to be grounded in something beyond that which is personal or social in character? How could such a relationship be determined? The profession of accounting may have overlooked an important factor, that of religion, in its development and practice for serving the public interest.

Other questions inspired by the Berger and Luckmann dialectic construct offers a challenge for the profession of accounting beyond that of serving the public interest. These questions are

- Are accounting majors asked to set aside what Berger and Luckmann consider an essential element of human nature, that of religiosity, in their quest for practicing within the profession, by not being introduced into the role that religion could have in professional accounting studies?
- When the concept of accounting was changed from an "art" (Nelson, 1947, p. 341) to a "process" (Nikolai & Bazley, 2003, p. 3), was a dimension lost within accounting that took it from a three-dimensional (personal, social, religious) profession to two-dimensions (personal, social)?
- Was the loss a spiritual component, an aesthetic or something beyond the ordinary, that is embedded within the term "art" that could have preserved something akin to medicine's Hippocratic Oath with its reference to the practice of medicine as an art?
- What changed within the profession that the perception of what constituted accounting had to be redefined?
- How did the change in the definition change the practice of accounting and how accounting was taught?

These questions invite responses as to the role of religion within the profession of accounting, responses perhaps best gleaned from further research.

*Accounting for Religion in the Classroom*

The finding that accounting majors enrolled in private church-related schools preferred financial accounting is of interest. What are alternative explanations? Is there a difference in the manner of teaching, choice of texts/materials that emphasize or minimize areas of accounting practice, less exposure to a variety of instructors, tendency to replace instructors with those who are like-minded with existing faculty, or were the results of this study because of a particular point in time that students who preferred financial accounting responded to the survey? Do accounting majors form closer bonds with their accounting instructors at private church-related schools than at other types of higher educational institutions? Are accounting faculty at private church-related schools primarily interested in teaching financial accounting, and if so, why is that?

Further study of and comparison to the accounting programs (majors) at private church-related school could provide some specific insight into the role of religion and students' preference for financial accounting. A similar study of private church-related school compared to public schools could also reveal information about the role of religion in public colleges and universities. Such studies could assist, then, in understanding the role of accounting faculty, types of job opportunities available to accounting graduates, funding sources of the schools, textbooks used, and a variety of other independent variables.

*Ethical Issues Concerning the Emphasis on the CPA Credential*

Research should be done concerning the ethics of the accounting profession as to the practice of marketing the CPA credential as "the" professional practice credential and its impact on accounting majors when not all students plan to work within public

accounting or auditing and other respected credible credentials are available within the professional accounting areas. Does licensure need to be the defining issue of legitimate credentialing if it causes accounting majors to expend resources beyond the point of being able to capture a return on the resources expended? Policy questions that arise include: 1) Is the public accounting portion of the profession asking potential entrants to hurdle an unnecessary barrier, that of the CPA exam, for membership within the broader definition of the profession? 2) Does this serve the public interest? These results seem to indicate that further specific research is needed to understand the "CPA-approach" that students preferring managerial accounting seem to consider appropriate and perhaps necessary: at the "present time" become a CPA by passing the exam and pursuing a "present time" career in financial, then switch to a career in managerial in the future, the career preferred.

Research is needed to explore the possibilities of creating an umbrella accounting organization with alignment of examinations for specialty areas such that no one credential is given preference. With NASBA's ability to manage various credentialing processes, those in the organization could work to bring the various professional accounting groups together for the purpose of developing a basic accounting exam with additional exams that serve specific areas within the full profession of accounting. NASBA maintains close ties to the State Boards of Accountancy and could make the case for a different approach to testing and credentialing of accountants. Working with the PCAOB and the SEC, NASBA could lead the credentialing process around the globe as relationships exist internationally. With the percentage of those actually working in public accounting so small, why continue to perpetuate an artifice, that of the CPA

credential, that divides accountants into the "haves" and "have nots"? The two questions posed above should be answered by keeping the welfare of undergraduate accounting majors uppermost in mind as they can and should direct the profession toward embracing the full profession of accounting without prejudice toward any area throughout the world.

## Final Thoughts

The deliberate inclusion of religiosity in considering preference for either a career in financial or managerial accounting hopefully will open an area of further study that includes religion in undergraduate study in accounting. Many in the European and Islamic world embrace the study of religion as a meaningful aspect of accounting. This inclusion of religion within the study of accounting should not only affect the study of ethics within the discipline but range further afield in the practice of within communities, much like those of Harmony, Indiana. Persons who become accountants should not mask their personhood by ignoring their religiosity, religiosity is as much a part of them as personal experience and social relationships.

In a recent process in which Harvard University considered curricular changes requiring one course in "reason and faith" for all undergraduate students, differing views about the place of religion in colleges and universities were offered (Pope, 2006, October). A co-chair of the committee working with curriculum changes noted in an interview, "As academics in a university we don't have to confront religion if we're not religious, but in the world, they will have to" (Pope, 2006). The news article quoted the Harvard report that "Harvard is no longer an institution with a religious mission, but religion is a fact that Harvard's graduates will confront in their lives," with the added note that "94 percent of incoming students report discussing religion and 71 percent attend

services" (Pope, 2006). This specific proposal of the curriculum change committee was dropped in 2006 (Associated Press, 2006, December).

In between the time of the Harvard proposal and its dismissal, a response by the president and provost of the University of Notre Dame was published in the Washington Post (2006, October). These collegians make an appeal for "reintroducing faith to the academy" through their editorial by writing that "It's time for universities to explore the reasoning that is possible within a tradition of faith, and to help their students appreciate this possibility and the rich resources in great religious traditions. Such efforts would enhance the ability of those with faith to engage in thoughtful, reasoned and self-critical spiritual reflection" (Jenkins & Burish, 2006, October). This study has engaged a construct supporting the dialectical relationship of person (undergraduate accounting major), society (profession of accounting), and religion (fundamentalistic manner of holding one's beliefs) for considering a career in financial or managerial accounting. The testing of this construct through the research question, does the manner of holding one's religious beliefs make a difference in an accounting major's preference for financial or managerial accounting, offers validity of the interaction of these three influences in making a choice.

Appendix A

Accounting Preferences Test, Revised Religious Fundamentalism Scale, and One Item of CPA and Professional Status

| | *Time Frame of Information* | *Decision Focus of Users* | *Reporting Standards--Authority* |
|---|---|---|---|
| | | | |
| **Financial** | I like collecting evidence in support of events that have occurred. | I enjoy preparing reports of a repetitive nature. | I like relying on rules in doing accounting work |
| | **My best friends** note my strong tendency to keep notes and papers from my past classes. | I prefer the cyclical nature of preparing financial statements to preparing one-of-a-kind reports. | Strict obedience to <u>God's plan</u> for one's life work leads to an appropriate career choice. |
| | I will network with accounting professionals who work with past or current events rather than what could be | **Classmates/members of organizations** to which I belong look to me for adhering to prescribed procedures for our group | I am more often complimented on my ability to work with detailed information than for information analysis |
| | | I am exploring a career that utilizes formal guidelines for required reports | **My parents** know me as a person who likes to follow the rules. |
| | | I have confidence in steps I can take for a career reporting on external transactions rather than on internal operations | |
| | | | |
| **Managerial** | I prefer planning for future strategies rather than reporting past events.* | I enjoy preparing a variety of reports, most of which are not repeated * | I like working open-ended accounting problems.* |
| | **My parents** know my strong tendency to plan ahead for most of what I do.* | **Classmates/members of organizations** to which I belong look to me for analyzing problems within our group * | I prefer informal problem solving that does not require following "legalistic" guidelines * |
| | I will network with accounting professionals whose work is dealing with the future consequences of events.* | I am more often told that I sacrifice accuracy for speed.* | **My best friends** know me as a person able to analyze situations from a variety of perspectives.* |
| | | I am exploring a career that provides me the opportunity to prepare reports on solutions to a variety of problems * | One's choice of a professional career need not be affected by <u>one's religiosity</u> * |
| | | | I have more confidence in steps I can take toward building a career than in relying on <u>God's guidance</u>.* |

Personal experience (I), social relationships (bold face type), religiosity (underlined)
*Represents a managerial characteristic

Revised Religious Fundamentalism Scale

| | |
|---|---|
| 1 | God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed. |
| 2 | No single book of religious teachings contains all the intrinsic, fundamental truths about life.* |
| 3 | The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God. |
| 4 | It is more important to be a good person than to believe in God and the right religion.* |
| 5 | There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic bedrock message that God has given humanity. |
| 6 | When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not. |
| 7 | Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.* |
| 8 | To lead the best, most meaningful life, one must belong to the one, fundamentally true religion. |
| 9 | "Satan" is just the name people give to their own bad impulses. There really is no such thing as a diabolical "Prince of Darkness" who tempts us.* |
| 10 | Whenever science and sacred scripture conflict, science is probably right.* |
| 11 | The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs. |
| 12 | All of the religions in the world have flaws and wrong teachings. There is no perfectly true, right religion.* |

* indicates item is worded in the con-trait direction, for which scoring is reversed.
Permission granted for use of the Revised Religious Fundamentalism Scale by author Bob Altemeyer of the University of Manitoba, April 18, 2006, via a personal email.

One Item of CPA and Professional Status and One of Intent to Take CPA Exam

| | |
|---|---|
| 37 | One must be a CPA to be considered a professional accountant. |

Within a few years after graduation, I intend to take the following professional examinations:

| | Very Unlikely | | | | | | Very Likely |
|---|---|---|---|---|---|---|---|
| CPA—Certified Public Accountant | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix B

Accounting Preferences Survey

Please read each item carefully, answering each by selecting the response that best describes your situation. Please respond to each item.

1. I best fit the student classification of
   - Undergraduate accounting major-freshman (first-year)
   - Undergraduate accounting major-sophomore
   - Undergraduate accounting major-junior
   - Undergraduate accounting major-senior
   - Graduate accounting major in MBA program
   - Graduate accounting major in masters in accounting program
   - Graduate in doctoral accounting program

2. How many credit hours have you completed in accounting courses?
   - 0
   - 1-6
   - 7-12
   - 13-18
   - 19-24
   - 25-30
   - 30+

3. In how many credit hours are you currently enrolled in accounting courses?
   0
   1-6
   7-12
   Over 12

4. What total amount of time have you worked in an accounting job/internship?
   0
   Less than 1 year
   1-2 years
   2-3 years
   3+ years

5. What is your current grade point average (GPA) in accounting courses?
   Less than 2.0
   2.0 – 2.49
   2.5—2.99
   3.0—3.49
   3.5—3.99
   4.00 or greater

6. What is your current overall grade point average?
   Less than 2.0
   2.0 – 2.49
   2.5—2.99
   3.0—3.49
   3.5—3.99
   4.00 or greater

7. Are you a member of Beta Alpha Psi  Yes  No

8. Are you a student member of the

| | | |
|---|---|---|
| American Institute of CPAs (AICPA) | Yes | No |
| Institute of Management Accountants (IMA) | Yes | No |
| Institute of Internal Auditors (IIA) | Yes | No |
| Association of Certified Fraud Examiners (ACFE) | Yes | No |
| Information Systems Audit & Control Association (ISACA) | Yes | No |

9. Please check the type of college/university in which you are currently enrolled as a student (Check only the most descriptive type).

| | | |
|---|---|---|
| Public | Yes | No |
| Private and church-related/religiously affiliated | Yes | No |
| Private and not church-related/religiously affiliated | Yes | No |
| Proprietary | Yes | No |

10. Please indicate the approximate student population of your present college/university.

Under 1,000 students
1,000—2,499 students
2,500—4,999 students
5,000—10,000 students
Over 10,000 students

11. Please indicate your gender. Female Male

| | Accounting interest survey | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Strongly Disagree | Moderately Disagree | Disagree | Neutral | Agree | Moderately Agree | Strongly Agree |
| 1 | Whenever science and sacred scripture conflict, science is probably right.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | Classmates/members of organizations to which I belong look to me for adhering to prescribed procedures for our group. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 | I am more often told that I sacrifice accuracy for speed * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | I enjoy preparing reports of a repetitive nature | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5 | To lead the best, most meaningful life, one must belong to the one, fundamentally true religion | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | I am exploring a career that utilizes formal guidelines for required reports. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7 | Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | I prefer the cyclical nature of preparing financial statements to preparing one-of-a-kind reports. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9 | No single book of religious teachings contains all the intrinsic, fundamental truths about life * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10 | My parents know my strong tendency to plan ahead for most of what I do * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11 | I prefer planning for future strategies rather than reporting past events.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12 | Classmates/members of organizations to which I belong look to me for analyzing problems within our group. * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13 | "Satan" is just the name people give to their own bad impulses. There really is no such thing as a diabolical "Prince of Darkness" who tempts us * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14 | I prefer informal problem solving that does not require following "legalistic" guidelines.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15 | When you get right down to it, there are basically only two kinds of people in the world the Righteous, who will be rewarded by God; and the rest, who will not | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16 | My best friends note my strong tendency to keep notes and papers from my past classes. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17 | One's choice of a professional career need not be affected by one's religiosity * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18 | I like working open-ended accounting problems * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19 | I will network with accounting professionals whose | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | work is dealing with the future consequences of events.* | | | | | | | |
| 20 | I am more often complimented on my ability to work with detailed information than for information analysis | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21 | I like relying on rules in doing accounting work | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22 | My best friends know me as a person able to analyze situations from a variety of perspectives * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23 | I am exploring a career that provides me the opportunity to prepare reports on solutions to a variety of problems.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24 | I enjoy preparing a variety of reports, most of which are not repeated * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25 | There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic bedrock message that God has given humanity | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26 | The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27 | It is more important to be a good person than to believe in God and the right religion * | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28 | My parents know me as a person who likes to follow the rules | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29 | I like collecting evidence in support of events that have occurred. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30 | I will network with accounting professionals who work with past or current events rather than what could be | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31 | The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32 | God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33 | I have confidence in steps I can take for a career reporting on external transactions rather than on internal operations | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34 | Strict obedience to God's plan for one's life work leads | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | to an appropriate career choice | | | | | | | |
| 35 | All of the religions in the world have flaws and wrong teachings There is no perfectly true, right religion.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 36 | I have more confidence in steps I can take toward building a career than in relying on God's guidance.* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37 | One must be a CPA to be considered a professional accountant | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

For each of the accounting areas listed below please rate your preference for a career in each of the two time frames noted in the columns (two choices per line—one in each of the two column per line):

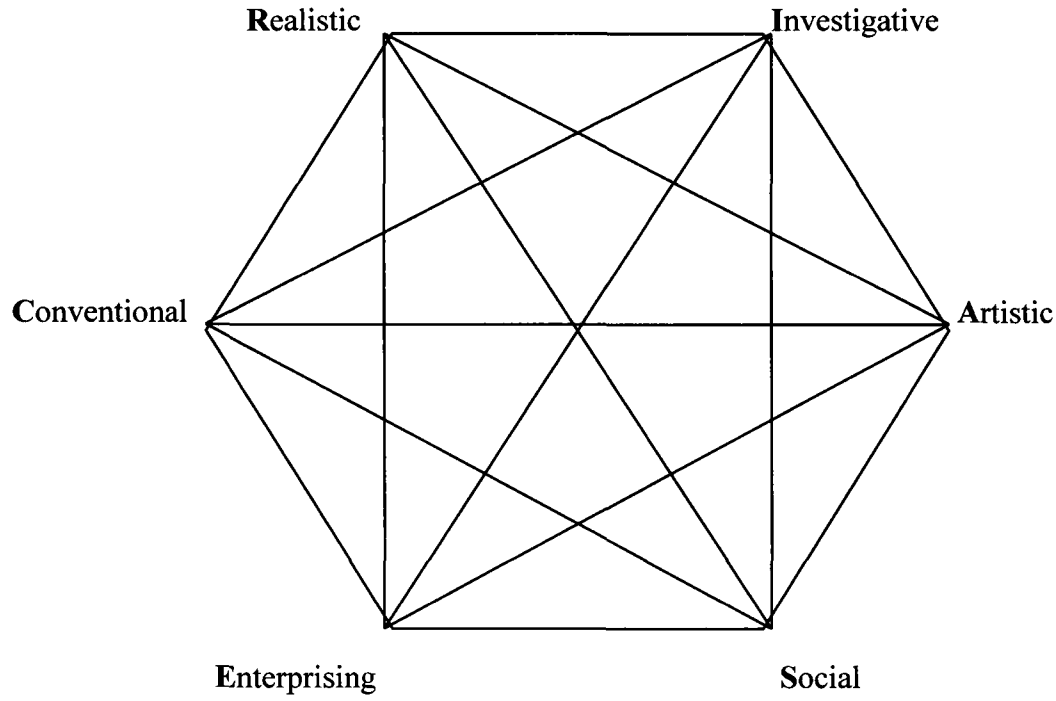
| | If I were choosing today | | | | | | | Ten years from now | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Extremely LOW preference | | | | | | Extremely HIGH preference | Extremely LOW preference | | | | | | Extremely HIGH preference |
| Financial statement preparation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Financial statement auditing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Tax accounting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Management accounting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Auditing internal controls | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Systems accounting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Within a few years after graduation, I intend to take the following professional examinations:

| Professional examination—(please mark choice for each exam) | Unlikely | | | | | | Very likely |
|---|---|---|---|---|---|---|---|
| CPA—Certified Public Accountant | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| CMA—Certified Management Accountant | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| CIA—Certified Internal Auditor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| CFE—Certified Fraud Examiner | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| CISA—Certified Information Systems Auditor | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix C

Holland's hexagonal model of personality and environment types




Accounting types per Holland's codes (Cluskey & Vaux, 1997):

Cost accountant (CES); Systems accountant (CSE); Manager (ESC)

Auditor (REC); Internal auditor (ICR); General accountant (CRS)

Controller (EIS)

The placement of the types about the hexagon corresponds to the personality types and consistency of an environment. Types adjacent to each other are the most consistent with types opposite each other the least consistent. Personality type within the same environment type is most congruent.

Appendix D

Results of Factor Analysis for Financial and Managerial Subscales – APT

Tables for 24 Initial Items (Tables for 14-Item APT after these tables)

Descriptive Statistics

| | Mean | Std. Deviation | Analysis N |
|---|---|---|---|
| Q16 | 4 7724 | 1.60123 | 290 |
| Q29 | 5 0276 | 1.01508 | 290 |
| Q30 | 4 4517 | 1 06180 | 290 |
| Q2 | 4 8966 | 1.18072 | 290 |
| Q4 | 4 0172 | 1 45154 | 290 |
| Q6 | 5 1379 | 1 13528 | 290 |
| Q8 | 4 4655 | 1 11634 | 290 |
| Q33 | 4 5828 | 91227 | 290 |
| Q20 | 4 4207 | 1 02000 | 290 |
| Q21 | 5 1103 | 1 02641 | 290 |
| Q28 | 5 2103 | 1 33124 | 290 |
| Q34 | 3 4690 | 1 62828 | 290 |
| Q10 | 5 2862 | 1 33782 | 290 |
| Q11 | 4 8448 | 1 20842 | 290 |
| Q19 | 4 9759 | 1 03708 | 290 |
| Q3 | 3.0069 | 1 40438 | 290 |
| Q12 | 5 0034 | 1.04401 | 290 |
| Q23 | 5 2103 | 92667 | 290 |
| Q24 | 4.5586 | 1 03152 | 290 |
| Q14 | 3 9138 | 1.12050 | 290 |
| Q17 | 4 7138 | 1.37750 | 290 |
| Q18 | 4 6793 | 1 22993 | 290 |
| Q22 | 5 2379 | 96043 | 290 |
| Q36 | 4.1448 | 1 7873 | 290 |

## Correlation Matrix

| | Q16 | Q29 | Q30 | Q2 | Q4 | Q6 | Q8 | Q33 | Q20 | Q21 | Q28 | Q34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q16 | 1 000 | 236 | 105 | 209 | 155 | 090 | 052 | 112 | 154 | 190 | 328 | - 106 |
| Q29 | 236 | 1 000 | 374 | 219 | 134 | 228 | 306 | 282 | 223 | 352 | 188 | - 069 |
| Q30 | 105 | 374 | 1 000 | 137 | 209 | 287 | 245 | 277 | 166 | 297 | 190 | 039 |
| Q2 | 209 | 219 | 137 | 1 000 | 106 | 238 | 052 | 108 | 025 | 084 | 190 | - 119 |
| Q4 | 155 | 134 | 219 | 106 | 1 000 | 259 | 384 | 089 | 259 | 257 | 252 | 051 |
| Q6 | 090 | 228 | 287 | 238 | 259 | 1 000 | 290 | 250 | 147 | 299 | 253 | - 091 |
| Q8 | 052 | 306 | 245 | 052 | 384 | 290 | 1 000 | 246 | 201 | 351 | 169 | 072 |
| Q33 | 112 | 282 | 277 | 108 | 089 | 250 | 246 | 1 000 | 041 | 238 | 124 | 011 |
| Q20 | 154 | 223 | 166 | 025 | 259 | 147 | 201 | 041 | 1 000 | 260 | 200 | 043 |
| Q21 | 190 | 352 | 297 | 084 | 257 | 299 | 351 | 238 | 260 | 1 000 | 282 | 010 |
| Q28 | 328 | 188 | 190 | 190 | 252 | 253 | 169 | 124 | 200 | 282 | 1 000 | - 041 |
| Q34 | - 106 | - 069 | 039 | - 119 | 051 | - 091 | 072 | 011 | 043 | 010 | - 041 | 1 000 |
| Q10 | 349 | 241 | 145 | 312 | 181 | 211 | 144 | 127 | 124 | 191 | 401 | - 013 |
| Q11 | 009 | 018 | - 126 | 132 | - 077 | - 015 | - 126 | - 037 | 036 | - 064 | 014 | - 047 |
| Q19 | 168 | 234 | 252 | 210 | 065 | 153 | - 053 | 216 | 242 | 120 | 144 | - 104 |
| Q3 | - 122 | - 073 | - 018 | - 054 | 087 | - 064 | - 002 | - 036 | - 067 | 046 | - 160 | 101 |
| Q12 | 150 | 144 | - 039 | 497 | 009 | 160 | - 040 | 045 | - 057 | 074 | 002 | - 156 |
| Q23 | 140 | 347 | 202 | 200 | 134 | 298 | 069 | 256 | 144 | 259 | 245 | - 070 |
| Q24 | 090 | 164 | 044 | 033 | - 099 | - 081 | - 233 | 146 | - 047 | - 075 | - 033 | - 078 |
| Q14 | - 144 | - 013 | - 127 | - 049 | - 110 | - 162 | - 131 | - 045 | - 062 | - 311 | - 213 | - 156 |
| Q17 | 086 | 137 | 084 | 029 | 039 | 192 | - 023 | 057 | 129 | 061 | 145 | - 499 |
| Q18 | 066 | 137 | 032 | 127 | 114 | 141 | - 118 | 124 | 061 | - 013 | - 083 | - 224 |
| Q22 | 105 | 231 | 169 | 223 | 000 | 186 | 025 | 094 | 042 | 187 | 050 | - 109 |
| Q36 | 110 | 106 | 080 | 021 | - 008 | 068 | 004 | 033 | 059 | 033 | - 019 | - 570 |

| | Q10 | Q11 | Q19 | Q3 | Q12 | Q23 | Q24 | Q17 | Q17 | Q18 | Q22 | Q36 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q16 | 349 | 009 | 168 | - 122 | 150 | 140 | 090 | - 144 | 086 | 066 | 105 | 110 |
| Q29 | 241 | 018 | 234 | - 073 | 144 | 347 | 164 | - 013 | 137 | 137 | 231 | 106 |
| Q30 | 145 | - 126 | 252 | - 018 | - 039 | 202 | 044 | - 127 | 084 | 032 | 169 | 080 |
| Q2 | 312 | 132 | 210 | - 054 | 497 | 200 | 033 | - 046 | 029 | 127 | 223 | 021 |
| Q4 | 181 | - 077 | 065 | 087 | 009 | 134 | - 099 | - 110 | 039 | 114 | 000 | - 008 |
| Q6 | 211 | - 015 | 153 | - 064 | 160 | 298 | - 081 | - 162 | 192 | 141 | 186 | 068 |
| Q8 | 144 | - 126 | - 053 | - 002 | - 040 | 069 | - 233 | - 131 | - 023 | - 118 | 025 | 004 |
| Q33 | 127 | - 037 | 216 | - 036 | 045 | 256 | 146 | - 045 | 057 | 124 | 094 | 033 |
| Q20 | 124 | 036 | 242 | - 067 | - 057 | 144 | - 047 | - 062 | 129 | 061 | 042 | 059 |
| Q21 | 191 | - 064 | 120 | - 046 | 074 | 259 | - 075 | - 311 | 061 | - 016 | 187 | 033 |
| Q28 | 401 | 014 | 144 | - 160 | 002 | 245 | - 033 | - 213 | 145 | - 083 | 050 | - 019 |
| Q34 | - 013 | - 047 | - 104 | 101 | - 156 | - 070 | - 078 | - 156 | - 499 | - 224 | - 109 | - 570 |
| Q10 | 1 000 | 310 | 349 | - 069 | 329 | 295 | 017 | - 110 | 108 | 092 | 162 | 059 |
| Q11 | 310 | 1 000 | 342 | 117 | 291 | 076 | 081 | 197 | 104 | 164 | 196 | 014 |
| Q19 | 349 | 342 | 1 000 | 055 | 262 | 434 | 265 | 093 | 270 | 417 | 339 | 180 |
| Q3 | - 069 | 117 | 055 | 1 000 | - 068 | - 062 | 028 | 064 | 017 | 047 | - 060 | - 016 |
| Q12 | 329 | 291 | 262 | - 068 | 1 000 | 228 | 082 | 062 | 014 | 241 | 35 | 124 |
| Q23 | 295 | 076 | 434 | - 062 | 228 | 1 000 | 347 | - 122 | 170 | 302 | 414 | 064 |
| Q24 | 017 | 081 | 265 | 028 | 082 | 347 | 1 000 | 284 | 039 | 330 | 281 | 030 |
| Q14 | - 110 | 197 | 093 | 064 | 062 | - 122 | 284 | 1 000 | 097 | 211 | 132 | 163 |
| Q17 | 108 | 104 | 270 | 017 | 014 | 170 | 039 | 097 | 1 000 | 242 | 068 | 466 |
| Q18 | 092 | 164 | 417 | 047 | 241 | 302 | 330 | 211 | 242 | 1 000 | 267 | 204 |
| Q22 | 162 | 196 | 339 | - 060 | 351 | 414 | 281 | 132 | 068 | 267 | 1 000 | 045 |
| Q36 | 059 | 014 | 180 | - 016 | 124 | 064 | 030 | 163 | 466 | 204 | 045 | 1 000 |

Communalities

| | Initial | Extraction |
|---|---|---|
| Q16 | 1.000 | 194 |
| Q29 | 1 000 | 375 |
| Q30 | 1.000 | 306 |
| Q2 | 1.000 | 225 |
| Q4 | 1.000 | .280 |
| Q6 | 1.000 | 339 |
| Q8 | 1 000 | .406 |
| Q33 | 1.000 | .194 |
| Q20 | 1 000 | .178 |
| Q21 | 1 000 | .448 |
| Q28 | 1 000 | 328 |
| Q34 | 1 000 | 252 |
| Q10 | 1 000 | 334 |
| Q11 | 1 000 | 217 |
| Q19 | 1.000 | 496 |
| Q3 | 1 000 | 1.890E-02 |
| Q12 | 1 000 | 295 |
| Q23 | 1 000 | 430 |
| Q24 | 1 000 | 274 |
| Q14 | 1 000 | 331 |
| Q17 | 1 000 | 223 |
| Q18 | 1.000 | 409 |
| Q22 | 1 000 | 328 |
| Q36 | 1.000 | 200 |

(Extraction Method Principal Component Analysis)

Total Variance Explained --- Extraction Method. Principal Component Analysis

| Component | Initial Eigenvalues | | |
|---|---|---|---|
| | Total | % of Variance | Cumulative % |
| 1 | 4 305 | 17.936 | 17 936 |
| 2 | 2 774 | 11.558 | 29 494 |
| 3 | 1 846 | 7.690 | 37 184 |
| 4 | 1 590 | 6.624 | 43 809 |
| 5 | 1 295 | 5 394 | 49 203 |
| 6 | 1 232 | 5 132 | 54 335 |
| 7 | 987 | 4 114 | 58 449 |
| 8 | .960 | 4.001 | 62.450 |
| 9 | 945 | 3 939 | 66 389 |
| 10 | .858 | 3 573 | 69.962 |
| 11 | 799 | 3 329 | 73 291 |
| 12 | 774 | 3 226 | 76 517 |
| 13 | 661 | 2 755 | 79 271 |
| 14 | .622 | 2 591 | 81.862 |
| 15 | .587 | 2 446 | 84 308 |
| 16 | 548 | 2 285 | 86 593 |
| 17 | .506 | 2.110 | 88 703 |
| 18 | 469 | 1 954 | 90 657 |
| 19 | 431 | 1.794 | 92 452 |
| 20 | .409 | 1 703 | 94.155 |
| 21 | 383 | 1 597 | 95 752 |
| 22 | 359 | 1 496 | 97 248 |
| 23 | 343 | 1 431 | 98 679 |
| 24 | 317 | 1 321 | 100 00 |

| Component | Extraction Sums of Squared Loadings | | | Rotation |
|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total |
| 1 | 4 305 | 17 936 | 17.936 | 3.893 |
| 2 | 2.774 | 11 558 | 29 494 | 3.497 |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |

Total Variance Explained Extraction Method. Principal Component Analysis

a When components are correlated, sums of squared loadings cannot be added to obtain a total variance

Scree Plot

Component Matrix[a]

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q16 | .430 | - 095 |
| Q29 | 598 | - 134 |
| Q30 | 464 | - 301 |
| Q2 | 467 | 8.094E-02 |
| Q4 | 353 | - 395 |
| Q6 | 530 | -.240 |
| Q8 | 306 | - 559 |
| Q33 | 414 | -.148 |
| Q20 | .349 | - 237 |
| Q21 | 498 | - 447 |
| Q28 | .462 | - 399 |
| Q34 | - 243 | - 439 |
| Q10 | 577 | - 040 |
| Q11 | 205 | 418 |
| Q19 | .613 | .348 |
| Q3 | -.107 | 8 628E- 02 |
| Q12 | .423 | 340 |
| Q23 | 648 | 101 |
| Q24 | 225 | 473 |
| Q14 | -.093 | 568 |
| Q17 | 358 | 307 |
| Q18 | 395 | 503 |
| Q22 | 492 | 293 |
| Q36 | 265 | 360 |

Extraction Method. Principal Component Analysis
a 2 components extracted

Pattern Matrix[a]

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q16 | 386 | .146 |
| Q29 | 538 | .200 |
| Q30 | 556 | -1 665E-02 |
| Q2 | 290 | 319 |
| Q4 | 540 | - 158 |
| Q6 | 563 | 7.130E-02 |
| Q8 | 621 | -.326 |
| Q33 | 412 | 9 011E-02 |
| Q20 | 426 | -2 237E-02 |
| Q21 | .684 | - 127 |
| Q28 | 581 | -5 137E-02 |
| Q34 | 128 | -.513 |
| Q10 | 457 | .271 |
| Q11 | - 142 | .474 |
| Q19 | 211 | 629 |
| Q3 | - 140 | 1 863E-02 |
| Q12 | 7507E-02 | .522 |
| Q23 | 411 | .432 |
| Q24 | - 165 | 533 |
| Q14 | - 468 | .447 |
| Q17 | 4 998E-02 | 459 |
| Q18 | -5 992E-02 | 649 |
| Q22 | 160 | 517 |
| Q36 | -5 602E-02 | 456 |

Extraction Method Principal Component Analysis
Rotation Method Promax with Kaiser Normalization
a 2 components extracted

Structure Matrix

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q16 | 417 | 227 |
| Q29 | 580 | 313 |
| Q30 | 553 | 101 |
| Q2 | 358 | .380 |
| Q4 | 506 | -.044 |
| Q6 | 578 | 190 |
| Q8 | .552 | - 195 |
| Q33 | 431 | .177 |
| Q20 | 421 | .067 |
| Q21 | .658 | 017 |
| Q28 | 571 | 071 |
| Q34 | 019 | - 486 |
| Q10 | 514 | .367 |
| Q11 | -.042 | .445 |
| Q19 | 343 | .674 |
| Q3 | - 136 | - 011 |
| Q12 | 185 | 538 |
| Q23 | .502 | 518 |
| Q24 | - 053 | 498 |
| Q14 | - 374 | 348 |
| Q17 | 147 | 469 |
| Q18 | .077 | .637 |
| Q22 | 269 | 551 |
| Q36 | 040 | 444 |

Extraction Method Principal Component Analysis
Rotation Method. Promax with Kaiser Normalization

| Component | 1 | 2 |
|---|---|---|
| 1 | 1.000 | 211 |
| 2 | 211 | 1 000 |

Extraction Method. Principal Component Analysis
Rotation Method Promax with Kaiser Normalization

Tables for 14-Item APT

Descriptive Statistics

| | Mean | Std Deviation | Analysis N |
|---|---|---|---|
| | | | |
| Q29 | 5 0526 | .98752 | 228 |
| Q30 | 4.4825 | 1.01298 | 228 |
| Q4 | 4 1886 | 1 41248 | 228 |
| Q6 | 5 1447 | 1.08296 | 228 |
| Q33 | 4 5351 | 90208 | 228 |
| Q20 | 4 4912 | 98218 | 228 |
| Q21 | 5 1447 | 1 01579 | 228 |
| Q28 | 5 2895 | 1 27133 | 228 |
| Q10 | 5 2500 | 1.34189 | 228 |
| Q19 | 4.8947 | 1 00543 | 228 |
| Q12 | 4 9386 | 98701 | 228 |
| Q23 | 5 2193 | 88809 | 228 |
| Q18 | 4 5921 | 1 22216 | 228 |
| Q22 | 5 1886 | 93132 | 228 |

Correlation Matrix

| | Q29 | Q30 | Q4 | Q6 | Q33 | Q20 | Q21 | Q28 | Q10 | Q19 | Q12 | Q23 | Q18 | Q22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q29 | 1 000 | 344 | 113 | 232 | 270 | 209 | 344 | 216 | 229 | 241 | 157 | 369 | 219 | 262 |
| Q30 | 344 | 1 000 | 186 | 233 | 333 | 190 | 287 | 206 | 115 | 240 | - 058 | 161 | 032 | 174 |
| Q4 | 113 | 186 | 1 000 | 244 | 124 | 289 | 220 | 291 | 231 | 166 | 005 | 128 | 137 | 093 |
| Q6 | 232 | 233 | 244 | 1 000 | 245 | 157 | 321 | 270 | 233 | 148 | 194 | 315 | 125 | 213 |
| Q33 | 270 | 333 | 124 | 245 | 1 000 | 030 | 232 | 122 | 082 | 184 | - 032 | 227 | 111 | 068 |
| Q20 | 209 | 190 | 289 | 157 | 030 | 1 000 | 215 | 101 | 097 | 351 | - 032 | 134 | 157 | 120 |
| Q21 | 344 | 287 | 220 | 321 | 232 | 215 | 1 000 | 233 | 135 | 101 | 048 | 277 | - 020 | 227 |
| Q28 | 216 | 206 | 291 | 270 | 122 | 101 | 233 | 1 000 | 391 | 162 | 039 | 213 | - 026 | 114 |
| Q10 | 229 | 115 | 231 | 233 | 082 | 097 | 135 | 391 | 1 000 | 310 | 331 | 246 | 081 | 128 |
| Q19 | 241 | 240 | 166 | 148 | 184 | 351 | 101 | 162 | 310 | 1 000 | 198 | 426 | 402 | 261 |
| Q12 | 157 | - 058 | 005 | 194 | - 032 | - 032 | 048 | 039 | 331 | 198 | 1 000 | 232 | 165 | 295 |
| Q23 | 369 | 161 | 128 | 315 | 227 | 134 | 277 | 213 | 246 | 426 | 232 | 1 000 | 290 | 445 |
| Q18 | 219 | 032 | 137 | 125 | 111 | 157 | - 020 | - 026 | 081 | 402 | 165 | 290 | 1 000 | 215 |
| Q22 | 262 | 174 | 093 | 213 | 068 | 120 | 227 | 114 | 128 | 261 | 295 | 445 | 215 | 1 000 |

Communalities

| | Initial | Extraction |
|---|---|---|
| Q29 | 1.000 | 391 |
| Q30 | 1 000 | 439 |
| Q4 | 1 000 | 272 |
| Q6 | 1 000 | 343 |
| Q33 | 1 000 | 282 |
| Q20 | 1 000 | 187 |
| Q21 | 1 000 | 427 |
| Q28 | 1 000 | .313 |
| Q10 | 1.000 | 274 |
| Q19 | 1 000 | 468 |
| Q12 | 1.000 | 450 |
| Q23 | 1 000 | .527 |
| Q18 | 1 000 | 383 |
| Q22 | 1 000 | 393 |

(Extraction Method Principal Component Analysis)

| | Initial Eigenvalues | | |
|---|---|---|---|
| Component | Total | % of Variance | Cumulative % |
| 1 | 3 605 | 25 747 | 25 747 |
| 2 | 1 545 | 11 036 | 36.783 |
| 3 | 1 277 | 9 124 | 45 907 |
| 4 | 1 198 | 8 558 | 54 465 |
| 5 | 959 | 6.849 | 61 314 |
| 6 | 849 | 6 066 | 67 379 |
| 7 | 754 | 5.388 | 72 767 |
| 8 | 696 | 4 973 | 77 740 |
| 9 | 672 | 4 796 | 82 537 |
| 10 | 625 | 4 461 | 86 998 |
| 11 | 525 | 3.753 | 90.751 |
| 12 | 493 | 3 521 | 94 272 |
| 13 | 448 | 3 197 | 97.469 |
| 14 | .354 | 2.531 | 100 000 |

Total Variance Explained --- Extraction Method. Principal Component Analysis

| Component | Extraction Sums of Squared Loadings | | | Rotation |
|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total |
| 1 | 3 605 | 25 747 | 25 747 | 3.093 |
| 2 | 1 545 | 11 036 | 36 783 | 2 858 |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |

Total Variance Explained Extraction Method· Principal Component Analysis

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance

Scree Plot

Component Matrix[a]

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q29 | 622 | -6 571E02 |
| Q30 | 496 | - 440 |
| Q4 | 435 | - 287 |
| Q6 | 566 | - 151 |
| Q33 | 419 | - 325 |
| Q20 | 414 | - 126 |
| Q21 | 528 | -.386 |
| Q28 | .474 | - 298 |
| Q10 | .508 | 125 |
| Q19 | 607 | 317 |
| Q12 | .330 | 584 |
| Q23 | 671 | 279 |
| Q18 | 391 | 480 |
| Q22 | .524 | 343 |

Extraction Method· Principal Component Analysis
a 2 components extracted

Pattern Matrix[a]

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q29 | 464 | 275 |
| Q30 | 706 | -.146 |
| Q4 | 534 | -3.503E-02 |
| Q6 | 501 | .164 |
| Q33 | .557 | -7.936E-02 |
| Q20 | 381 | 105 |
| Q21 | 680 | -7 761E-02 |
| Q28 | 569 | -2.468E-02 |
| Q10 | 224 | 393 |
| Q19 | 122 | 627 |
| Q12 | -.290 | 729 |
| Q23 | 197 | 626 |
| Q18 | -.161 | .664 |
| Q22 | 4.547E-02 | .607 |

Extraction Method: Principal Component Analysis
Rotation Method. Promax with Kaiser Normalization
a. rotation converged in 3 iterations

Structure Matrix

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q29 | 572 | 457 |
| Q30 | 649 | 131 |
| Q4 | 521 | 175 |
| Q6. | 566 | .361 |
| Q33 | 526 | 139 |
| Q20 | .422 | .254 |
| Q21 | 650 | .189 |
| Q28 | 559 | 199 |
| Q10 | .378 | 481 |
| Q19 | 368 | .675 |
| Q12 | - 004 | 615 |
| Q23 | 442 | 703 |
| Q18 | 099 | 601 |
| Q22 | 284 | 625 |

Extraction Method Principal Component Analysis
Rotation Method Promax with Kaiser Normalization

Component Correlation Matrix

| Component | 1 | 2 |
|---|---|---|
| 1 | 1 000 | 392 |
| 2 | 392 | 1 000 |

Extraction Method Principal Component Analysis
Rotation Method Promax with Kaiser Normalization

Component Score Coefficient Matrix

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q29 | 171 | 112 |
| Q30 | 261 | - 062 |
| Q4 | 197 | - 016 |
| Q6. | 185 | 067 |
| Q33 | 206 | - 034 |
| Q20 | .140 | 042 |
| Q21 | 251 | -.033 |
| Q28 | 210 | - 011 |
| Q10 | 082 | 161 |
| Q19 | 044 | 258 |
| Q12 | - 109 | 301 |
| Q23 | .071 | .257 |
| Q18 | - 061 | 274 |
| Q22 | 015 | 250 |

Extraction Method Principal Component Analysis
Rotation Method Promax with Kaiser Normalization

Component Correlation Matrix

| Component | 1 | 2 |
|---|---|---|
| 1 | 1 154 | .784 |
| 2 | 784 | 1 154 |

Extraction Method Principal Component Analysis
Rotation Method Promax with Kaiser Normalization

Appendix E

Reliability Analysis for Subscales--Financial and Managerial

| | | Mean | Std. Dev | Cases |
|---|---|---|---|---|
| | | | | |
| 1. | Q4 | 4 1886 | 1 4125 | 228.0 |
| 2 | Q6 | 5 1447 | 1 0830 | 228 0 |
| 3 | Q10 | 5 2500 | 1 3419 | 228.0 |
| 4 | Q12 | 4 9386 | .9870 | 228.0 |
| 5 | Q18 | 4 5921 | 1 2222 | 228.0 |
| 6 | Q19 | 4 8947 | 1 0054 | 228.0 |
| 7 | Q20 | 4 4912 | .9822 | 228.0 |
| 8 | Q21 | 5 1447 | 1 0158 | 228 0 |
| 9 | Q22 | 5 1886 | 9313 | 228.0 |
| 10. | Q23 | 5 2193 | .8881 | 228.0 |
| 11. | Q28 | 5.2895 | 1.2713 | 228.0 |
| 12. | Q30 | 4 4825 | 1 0130 | 228.0 |
| 13 | Q33 | 4 5351 | 9021 | 228 0 |
| 14 | Q29 | 5 0526 | 9875 | 228 0 |

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item -- Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| Q4 | 64 2237 | 47 6722 | .3480 | .7530 |
| Q6 | 63 2675 | 48 4876 | 4505 | 7402 |
| Q10 | 63 1623 | 47 1409 | 4077 | 7448 |
| Q12 | 63 4737 | 52 1711 | 2321 | 7603 |
| Q18 | 63 8202 | 50 2891 | .2695 | 7594 |
| Q19 | 63 5175 | 48.5680 | 4907 | 7371 |
| Q20 | 63 9211 | 51 1215 | 3110 | .7535 |
| Q21 | 63.2675 | 49 7915 | 3928 | .7461 |
| Q22 | 63.2237 | 50 4916 | 3850 | .7473 |
| Q23 | 63 1930 | 49 1080 | 5269 | 7360 |
| Q28 | 63 1228 | 48.3285 | 3683 | 7490 |
| Q30 | 63 9298 | .50 2065 | 3638 | 7488 |
| Q33 | 63 8772 | 51.7998 | 2958 | 7546 |
| Q29 | 63 3596 | 48 8128 | .4831 | 7381 |

Reliability Coefficients

N of Cases = 228 N of Items = 14

Alpha = .7616

Reliability Analysis for Subscales--Financial

| | | Mean | Std Dev | Cases |
|---|---|---|---|---|
| | | | | |
| 1 | Q4 | 4.1886 | 1 4125 | 228 0 |
| 2 | Q6 | 5 1447 | 1 0830 | 228 0 |
| 3 | Q20 | 51.1215 | .3110 | 228 0 |
| 4 | Q21 | 49.7915 | .3928 | 228 0 |
| 5. | Q28 | 48 3285 | 3683 | 228 0 |
| 6. | Q30 | .50 2065 | 3638 | 228 0 |
| 7 | Q33 | 51 7998 | 2958 | 228.0 |
| 8. | Q29 | 48 8128 | 4831 | 228.0 |

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item -- Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| Q4 | 34 1404 | 17 8304 | 3678 | 6693 |
| Q6 | 33 1842 | 19 0232 | 4252 | 6501 |
| Q20 | 33 8377 | 20 5947 | 2977 | 6777 |
| Q21 | 33 1842 | 19 1025 | 4593 | 6436 |
| Q28 | 33 0395 | 18 6020 | 3643 | 6662 |
| Q30 | 33 8465 | 19 3464 | 4310 | 6499 |
| Q33 | 33 7939 | 20 7547 | 3217 | 6730 |
| Q29 | 33 2763 | 19.6193 | 4136 | 6540 |

Reliability Coefficients

N of Cases = 228 N of Items = 8

Alpha = .6899

Reliability Analysis for Subscales--Managerial

| | | Mean | Std. Dev | Cases |
|---|---|---|---|---|
| | | | | |
| 1 | Q10 | 5 2489 | 1.3390 | 229 0 |
| 2. | Q12 | 4 9389 | 9849 | 229 0 |
| 3 | Q18 | 4 5895 | 1 2201 | 229.0 |
| 4 | Q19 | 4 8952 | 1 0033 | 229 0 |
| 5 | Q22 | 5 1878 | 9294 | 229 0 |
| 6 | Q23 | 5.2183 | 8863 | 229.0 |

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item -- Total Correlation | Alpha if Item Deleted |
|---|---|---|---|---|
| Q10 | 24 8297 | 10.9226 | 3248 | 6647 |
| Q12 | 25.1397 | 12.0155 | .3815 | 6323 |
| Q18 | 25 4891 | 11.3387 | 3362 | .6526 |
| Q19 | 25 1834 | 11.1329 | 5155 | .5875 |
| Q22 | 24 8908 | 12 1591 | 3961 | 6287 |
| Q23 | 24 8603 | 11 6997 | 5122 | 5959 |

Reliability Coefficients.

N of Cases = 229 N of Items = 6

Alpha = .6683

Appendix F

Expanded Statistical Data to Supplement Chapter 4 Tables

## Convergent Validity of the APT for Present and Future Career Plans

Table 17A

Correlations between APT Subscales with **Current Career Choice**

| | Managerial | Financial | Current Fin. | Current Mgl. |
|---|---|---|---|---|
| Mgl. Subscale. Pearson Correlation | 1 | ** .381 | * 171 | ** .270 |
| Significance (2-tail) | | .000 | 010 | 000 |
| Responses | 228 | 228 | 225 | 225 |
| Fin Subscale Pearson Correlation | ** 381 | 1 | ** 395 | * 160 |
| Significance (2-tail) | 000 | | 000 | 016 |
| Responses | 228 | 228 | 225 | 225 |
| **Current Fin**: Pearson Correlation | * .171 | ** .395 | 1 | 011 |
| Significance (2-tail) | 010 | .000 | | .874 |
| Responses | 225 | 225 | 225 | 225 |
| **Future Fin.**: Pearson Correlation | * 142 | **.348 | **.759 | 047 |
| Significance (2-tail) | .034 | .000 | .000 | 484 |
| Responses | 225 | 225 | 225 | 225 |
| **Current Mgl.**: Pearson Correlation | ** .270 | ** 160 | 011 | 1 |
| Significance (2-tail) | .000 | 016 | 874 | |
| Responses | 225 | 225 | 225 | 225 |
| **Future Mgl.**: Pearson Correlation | **.305 | ** 232 | 032 | **.800 |
| Significance (2-tail) | .000 | .000 | 636 | .000 |
| Responses | 225 | 225 | 225 | 225 |

** Correlation significant at the 0 01 level (2-tailed)
* Correlation significant at the 0 05 level (2-tailed)

Table 17B

Correlations between APT Subscales with **Future Career Choice**

| | Managerial | Financial | Future Fin. | Future Mgl. |
|---|---|---|---|---|
| Mgl. Subscale. Pearson Correlation | 1 | ** .381 | * 142 | ** 305 |
| Significance (2-tail) | | .000 | .034 | 000 |
| Responses | 228 | 228 | 225 | 225 |
| Fin Subscale· Pearson Correlation | ** 381 | 1 | ** .348 | ** 232 |
| Significance (2-tail) | 000 | | .000 | 000 |
| Responses | 228 | 228 | 225 | 225 |
| **Current Fin.**: Pearson Correlation | * 171 | ** .395 | **.759 | .032 |
| Significance (2-tail) | 010 | .000 | .000 | 636 |
| Responses | 225 | 225 | 225 | 225 |
| **Future Fin.**: Pearson Correlation | * 142 | ** .348 | 1 | * 136 |
| Significance (2-tail) | 034 | .000 | | 042 |
| Responses | 225 | 225 | 225 | 225 |
| **Current Mgl.**: Pearson Correlation | ** .270 | ** 160 | 047 | **.800 |
| Significance (2-tail) | .000 | 016 | 484 | .000 |
| Responses | 225 | 225 | 225 | 225 |
| **Future Mgl.**: Pearson Correlation | ** .305 | ** 232 | * .136 | 1 |
| Significance (2-tail) | .000 | 000 | .042 | |
| Responses | 225 | 225 | 225 | 225 |

** Correlation significant at the 0 01 level (2-tailed) * Correlation significant at the 0.05 level (2-tailed)

# Appendix G

## RRFS - Permission to Use

**From:** "Bonita D'Amil" <Bonita.D'Amil@erlbaum.com>
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**Sent:** Thursday, April 13, 2006 3:12 PM
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Sent: Tuesday, April 11, 2006 1:27 PM
To: Bonita D'Amil
Subject: Rights and Permissions Request from the Web

Applicant: Jean L. Hawkins

Address 1: William Jewell College #1048

Address 2: 500 College Hill

City: Liberty

State/Province: MO

Zip/Postal Code: 64068
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Phone: 816-415-7663

Fax: 816-415-5027

E-mail: hawkinsj@william.jewell.edu

Reprint Title: Religious Fundamentalism Scale

Reprint Author/Editor: Jean Hawkins

Reprint Publisher: In my completed dissertation

Additional Information: I would like to use the scale for dissertation research as part of my DBA program at Anderson University in Anderson, Indiana. I do not wish to reprint the article--just use the scale as part of a research survey for gathering information on differences in knowledge and skills in management accounting versus financial accounting, including students' attitude toward authority in religion [tied to authority found primarily in financial accounting].

Title #1 (ISBN or ISSN): do not have this information

Title #1 (Title): International Journal for the Psychology of Religion

Title #1 (Author/Editor): Altemeyer & Hunsberger

Title #1 (Selection): Authoritarianism, religious fundamentalism, quest, and prejudice (1992) Vol. 2, Issue 2, pages 113-133.

Title #2 (ISBN or ISSN):

Title #2 (Title):

Title #2 (Author/Editor):

Title #2 (Selection):

Title #3 (ISBN or ISSN):

Title #3 (Title):

Title #3 (Author/Editor):

Title #3 (Selection):

**From:** "Jean Hawkins" <hawkinsj@william.jewell.edu>
**To:** <altemey@cc.umanitoba.ca>
**Sent:** Thursday, April 13, 2006 4:59 PM
**Subject:** Request for permission to use RFS

Dr. Altemeyer,

I am writing for permission to use the Religious Fundamentalism Scale (described in your article, "Authoritarianism, Religious Fundamentalism, Quest, and Prejudice" in *The International Journal for the Psychology of Religion* (1992), as part of a survey to be used in my dissertation research (DBA program at Anderson University, Anderson, Indiana). The other items in the survey will be developed by me and pertain to knowledge and skills in management accounting versus financial accounting. Undergraduate accounting majors in educational institutions in the United States will be surveyed for measurable differences in relation to career plans. Students' attitude toward authority in religion (financial accounting with its authoritative pronouncements from authoritative bodies), measurable with the use of the RFS, is of interest and considered an important part of the research planned.

If you need further information, please contact me. I will appreciate permission to use the instrument. Thank you. Jean Hawkins hawkinsj@william.jewell.edu

(I am a full-time accounting faculty member at William Jewell College in Liberty, Missouri, who is seeking the doctoral degree at Anderson.)

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**Master's of Arts**, Business, University of Central Missouri, Warrensburg, MO. August 1970.

**Bachelor of Science in Business Administration**, Accounting, University of Central Missouri, November 1968.

**CMA**, 1995 Certified Management Accountant
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## COLLEGE TEACHING EXPERIENCE

Fundamentals of Financial Accounting (ACC211); Intermediate Financial Accounting I & II (ACC311 & 312); Cost Management Accounting I & II (ACC341 & 342); Advanced Financial Accounting (ACC411); Governmental and Not-for-Profit Accounting (ACC 421); Fraud Accounting (ACC371); Senior Seminar in Accounting (ACC451) ; Organization & Management (BUS201); Business Information Systems (BUS267); Elementary Business Statistics (BUS318); Healthcare at Any Cost (CTI408)
William Jewell College, Fall, 1976, to present

Cost Accounting, Microeconomics, and Marketing
Harlaxton College, Spring 1994

Accounting Principles; Intermediate Financial Accounting
Rockhurst University, 1975-1976

Accounting course
Avila University, evening division, Spring & Summer, 1975

Accounting principles, intermediate, cost, advanced
University of Central Missouri, 1970-1973 [teaching assistant, 1969-1970]

## WORK EXPERIENCE

1968-1969 General Accountability Office (GAO), staff auditor Kansas City office
1973-1975 Larson Morriss, part-time staff accountant, Warrensburg office
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