

**PROFESSIONAL SKEPTICISM OF STUDENTS: A DESCRIPTIVE STUDY OF  
DIFFERENCES IN TRAIT SKEPTICISM AND PERSONAL VALUES**

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**Submitted to the faculty of the Falls School of Business  
in partial fulfillment of the requirements  
for the degree**

**Doctor of Business Administration**

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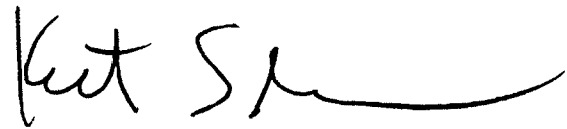
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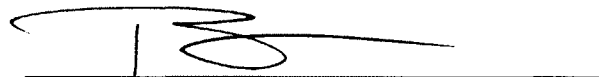
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## DEDICATION

This dissertation is dedicated to the  
four people I cherish on this earth above everyone else.  
First and foremost to Jill: my best friend, confidant, and wife.  
Without you this is nothing but a far-fetched dream.  
To Ezekiel, Elizabeth, and Simon, our delightful children:  
you have given me a gift that I will never forget.  
Always remain curious!

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## ABSTRACT

Seth E. Sikkema

### PROFESSIONAL SKEPTICISM OF STUDENTS: A DESCRIPTIVE STUDY OF DIFFERENCES IN TRAIT SKEPTICISM AND PERSONAL VALUES.

The value of an audit is in part based on the degree of professional skepticism exercised by an auditor. Indeed, the importance of professional skepticism has been stressed by regulators and practitioners since the earliest stages of the auditing profession. Recent scrutiny of the audit profession, however, indicates that auditors occasionally lack the ability to exercise an appropriate level of professional skepticism. The concern over the issue suggests a need for greater research and understanding of the determinants and dimensionality of professional skepticism.

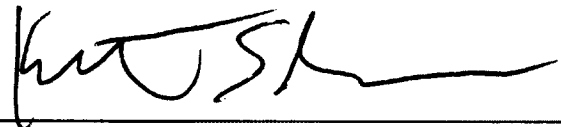
This research examined the individual trait component of professional skepticism and also introduced a new antecedent, personal values, into a revised model of professional skepticism. Understanding antecedents to skeptical behavior is important because the ability to measure individual differences in trait skepticism improves the precision of predictive models of skeptical behavior. The primary objective of this study was to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. As a result, the primary goal is not to study the factors causing trait professional skepticism, but rather whether the result of



skeptical personality trait is associated with different combinations of specific characteristics among a set of students.

The methodology used in the research employs independent t-tests, ANOVAs, and Chi-square tests to identify whether significant differences were present. The data used in the study comes from student participants at two universities located in Western Oregon. Each participant provided demographic data, completed a trait skepticism survey, and ranked personal values by importance.

The results showed that the level of trait skepticism is associated with different categories of GPA, class standing, and age. Furthermore, high trait skeptics tended to choose different majors than low trait skeptics, more skeptical students opting for liberal arts majors. The results also showed that high and low trait skeptics placed different preferences among ten personal value sets. As a result, this study was able to show that skeptical personality trait is associated with different combinations of specific characteristics among a set of students.



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## CHAPTER 1 – STATEMENT OF THE PROBLEM

### Introduction

Although professional skepticism is a foundational concept in the auditing profession, both practitioners and researchers have had trouble agreeing on a precise definition. Some adopt a “neutral” view which encourages a questioning mind and no prior bias of management’s level of honesty or dishonesty (Hurtt, Brown-Liburd, Earley, & Krishnamoorthy, 2012; Hurtt, 2010; Nelson, 2009). The alternative perspective is one of “presumptive doubt” which assumes some degree of dishonesty unless evidence indicates otherwise (Hurtt et al., 2012; Hurtt, 2010; Nelson, 2009). A third possibility, proposed by Hurtt (2010), suggests a balance between keeping an open mind and actively questioning until the skeptic is satisfied with enough evidence to arrive at a conclusion. In spite of the lack of definitional clarity, all parties agree that auditors are required and encouraged to exercise an appropriate level of professional skepticism during all phases of an audit. Yet recent financial scandals and subsequent auditor investigations of audit deficiencies and failures suggest that auditors, at times, fail to exercise the necessary degree of professional skepticism (Center for Audit Quality (CAQ), 2010; Public Company Accounting Oversight Board (PCAOB), 2008). What is less clear in these cases, however, is why auditors lack the appropriate level of professional skepticism. The heightened emphasis on professional skepticism by the accounting community, in conjunction with a post-Sarbanes-Oxley Act regulatory environment, has refocused academics and practitioners alike on better understanding and improving professional skepticism behavior.



Research in earnest on the topic of professional skepticism, however, is still in its early stages. This is in part due to the aforementioned ill-defined nature of the concept in both practice and the literature. As a response to this lack of conceptual and definitional clarity of professional skepticism, Nelson (2009) recently conceived a model of professional skepticism that has helped frame the construct. The Nelson model adopts a presumptive doubt stance and delineates between several factors that affect skeptical judgment and behavior, such as knowledge, experience, and traits (personality, ethics, cognitive ability). Traits in particular are an important, and relatively unexplored, area of research in professional skepticism. As such, Hurtt (2010) refined and modified the trait component of Nelson's model, identified trait skepticism as an antecedent of skeptical behavior, and developed a multi-dimensional psychological scale (e.g. personality construct) measuring individual differences in trait skepticism. This research adopts the third definition of professional skepticism developed from the six separate dimensions of skeptics identified in the Hurtt skepticism scale.

A separate but related stream of literature in psychology identifies the importance of understanding personality traits with respect to personal values (Parks & Guay, 2009). This literature examines the separate but similar constructs of personality and personal values. Although the malleability of personality is still hotly debated, personality is one area that has been linked with motivating behavior (Schwartz, 1992). Recent research has also established the predictive value of personal values on behavior, especially when combined with components of personality (Olver & Mooradian, 2003; Parks & Guay, 2009). In this sense values may reinforce specific behaviors, especially when personality traits and values align.

This research is a direct response to calls for improving our understanding of trait skepticism (Hurt et al., 2012; Hurtt, Eining, & Plumlee, 2010; Nelson, 2009) and calls in psychological literature for the integration of personality constructs and personal values in behavior research (Olver & Mooradian, 2003; Parks & Guay, 2009). The purpose of this research is to expand our understanding of trait skepticism particularly as it relates to personal values, major choice, and other demographic variables among students. The Hurtt trait skepticism scale (2010) was utilized to discover differences in demographic variables, major choice, and personal values of accounting students. In addition, the construct of personal values is utilized in this study both as a way to better understand differences in trait skepticism.

#### Relevance and Contribution

This research is a timely response to several gaps in professional and academic literature. The audit profession is currently re-emphasizing the importance of professional skepticism and is actively seeking ways to enhance auditor skepticism, as modeled by Nelson (2009) and Hurtt (2010). In addition, some researchers have suggested that a deeper examination of trait skepticism might lead to its potential use as a selection tool for the audit profession (Nelson, 2009). Accordingly, this research is expected to have a significant impact on the auditing profession because it clearly identifies how trait professional skepticism relates to a student's major choice and personal values. This research also responds to calls in psychological literature for continued research between personality constructs and personal values.

This research differs from previous studies in two important ways. First, it examined trait skepticism among students, an under-researched population within the

professional skepticism literature domain. Student-based research enhances the ability to identify and improve professional skepticism prior to employment. Using students also improved the strength of trait skepticism analysis since exogenous variables from employment may obscure some results.

Secondly, very little empirical research in accounting attempts to link personal values with personality constructs. Two studies evaluated how personal values impact ethical decision making (Collins, Lowensohn, & Shaub, 2007; Shafer, Morris, & Ketchand, 2001) yet, to the researcher's knowledge, a study examining the relationship between personality trait and personal values in accounting has not been undertaken.

The results of this research are of interest to accounting educators seeking to recruit trait skeptics into the accounting major, accounting professionals seeking to understand the relationships between trait skepticism, personal values, and major type, accounting researchers who investigate trait skepticism and skeptical behavior, and psychology researchers who study personality, personal values, and behavior.

#### Conceptual Framework

The American Institute of Certified Public Accountants (AICPA), the Center for Audit Quality (CAQ), and the Public Accounting Oversight Board (PCAOB), three central professional bodies of auditing in the United States, all have emphasized the need for professional skepticism. The value of an audit is in part based on the degree of professional skepticism exercised by an auditor. Thus, even from the beginning auditors have been tasked with a moral obligation to serve and protect public society (Montgomery, 1934). This social contract is often best guarded when an auditor is able to remain independent and objective. At the very foundation of independence and

objectivity is the ability to exercise sound professional skepticism. Indeed, the importance of professional skepticism has been stressed since the earliest stages of the auditing profession. For example, one of the earliest auditing standards required the auditor to pervasively exercise professional skepticism during the audit engagement (AICPA, 1997). More recent scrutiny of the audit profession, however, indicates that auditors occasionally lack the ability to exercise an appropriate level of professional skepticism (CAQ, 2010; PCAOB, 2008). Unfortunately these lapses in professional skepticism have also been linked to the majority of the Securities and Exchange Commission (SEC) enforcement actions (Beasley, Carcello, & Hermanson, 2001). The concern over the issue suggests a need for greater research and understanding of the determinants and dimensionality of professional skepticism. There is a need to clarify where individual differences exist between those that exercise an appropriate level of skepticism and those that do not. Clearly professional skepticism is an important, relevant, and accepted concept for regulators and the auditing profession and is worthy of serious investigation.

### *Professional skepticism*

In spite of the reinvigorated interest in professional skepticism, the concept itself remains poorly defined and underexplored (Hurtt, 2010; Nelson, 2009). This is likely due to the difficulty of measuring professional skepticism (Hurtt et al., 2012) and the broad nature of the concept which borrows from academic literature in accounting, psychology, philosophy, management, organizational behavior, and several others. Nelson (2009) proposes a seminal model of professional skepticism which suggests audit evidence, when combined with various determinants of professional skepticism, produces

judgments, and ultimately actions, that demonstrate professional skepticism. In his model Nelson (2009) shows that skeptical behavior occurs when an auditor changes his or her actions based on skeptical judgment. Skeptical judgment occurs when certain individual characteristics such as knowledge, traits, and ability and environmental characteristics such as incentives, interact with audit evidence characteristics. As a result a better understanding of the nature and interaction of these antecedents to skeptical behavior are critical for studying professional skepticism. However, the complexity of professional skepticism demands that relevant research into the issue also be focused and narrow. As such, this research examined the individual trait component of Nelson's model. Nelson isolates individual traits as "problem-solving ability, ethical predisposition, and other traits such as self-confidence and tendency to doubt" (2009, p. 2). Hurtt (2010) further refines the trait concept by developing a psychological scale which measures trait professional skepticism which is comprised of six relatively stable, enduring characteristics of an individual (e.g., questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, self-esteem, and autonomy). Therefore this research draws from both conceptual models of professional skepticism and utilizes the Hurtt scale for exploring differences in student characteristics. This research also introduces a new antecedent, personal values, into a revised model of professional skepticism.

#### *Trait professional skepticism*

The auditing literature contains many studies that have focused on skeptical behavior (e.g., Brown-Liburd, Cohen, & Trompeter, 2009; Carpenter & Reimers, 2009; Choo & Tan, 2000; Endrawes & Monroe, 2010; Fukukawa & Mock, 2010; Fullerton &

Durtschi, 2004; Grenier, 2010; Plumlee, Rixom, & Rosman, 2011). Some have attempted to measure differences in individual trait skepticism (Farag & Elias, 2012; Hurtt et al., 2010; Hurtt, 2010; McMillan & White, 1993; Popova, 2013; Quadackers, Groot, & Wright, 2009; Shaub & Lawrence, 1996). While understanding skeptical behavior is important it is equally important to understand antecedents to skeptical behavior because the ability to measure individual differences in trait skepticism improves the precision of predictive models of skeptical behavior. Yet differences in individual traits as antecedents to skeptical judgments are relatively unexplored, particularly where direct measurements of psychological constructs are concerned. Previous attempts to measure individual trait skepticism relied on proxies of skepticism, such as trust (Choo & Tan, 2000; Shaub & Lawrence, 1996), suspicion (Shaub & Lawrence, 1996), independence (Shaub, 1996), or other experimental measures (McMillan & White, 1993). Hurtt (2010) was the first to develop a multidimensional psychological scale measuring trait skepticism by focusing narrowly on the psychological component of Nelson's trait skepticism model. In her research Hurtt (2010) distinguishes trait skepticism from state skepticism by noting that the former represents a relatively stable and enduring aspect of an individual while the latter is a temporary condition prone to changes in exogenous variables. Overall the research shows that individuals who exercise higher levels of trait skepticism tend to demonstrate more skeptical judgment (Hurtt et al., 2012). However, there is a lack of research employing the Hurtt scale and a lack of research investigating individual characteristics (such as demographics, career path, or personal values) of high versus low trait skeptics. In addition, much of the aforementioned research is focused solely on audit professionals employed in public

accounting. This suggests that non-accounting professionals and students have been underutilized, two essential groups for obtaining a robust understanding of trait skepticism. This research addresses these gaps in the literature.

### *Personal values*

Personal values, unlike attitudes, represent guiding principles that an individual uses in their lives. Although some values are weakly-to-moderately correlated with personality (Parks & Guay, 2009), there is psychological research which distinguishes differences between personality and values in two important ways. First, Parks and Guay (2009) note that personality is a relatively stable and enduring characteristic whereas values are considered to be more temporal. Second, personality is comprised of endogenous characteristics, such as genetics, while values are learned adaptations influenced by external forces (Olver & Mooradian, 2003). In other words, “values relate to what we believe we ought to do, while personality relates to what we naturally tend to do” (Parks & Guay, 2009, p. 677). Both values and personality, however, have an impact on behavior and decision-making. As a result, there may be an incremental predictive benefit associated with combining the two constructs in behavioral research. Prior personal values research in accounting focuses primarily on understanding differences in values between gender (Eaton & Giacominio, 2001; Giacominio & Akers, 1998), discipline (Baker, 1976; Eaton & Giacominio, 2000), ethnicity (Lan, Ma, Cao, & Zhang, 2009), or other factors (Eaton & Giacominio, 2001). Very little research has examined the effect of personal values on behavior in accounting. One study explores the relationship of personal values to ethical decision-making (Shafer et al., 2001). This is the only study in the accounting literature, to the researcher’s knowledge, that utilizes a

set of personal values from the psychology field. A very small number of other studies use one or two discrete value variables that are not always directly related to the personal values literature considered in this research (e.g., Collins et al., 2007). To date there does not appear to be any research examining differences in personal values between high trait skeptics and low trait skeptics. This research addresses these gaps, responding to calls from psychology to integrate personality and values and to the paucity skepticism research incorporating values.

### Problem Statement and Research Questions

The primary objective of this study is to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. As a result, the primary goal is not to study the factors *causing* trait professional skepticism, but rather whether the *result* of skeptical personality trait is associated with different combinations of specific characteristics among a set of students. The problem statement is addressed in the following research questions:

1. Is there a difference between the level of trait professional skepticism in students' demographic characteristics (gender, GPA, class standing, age)?
2. Is there a difference between the level of trait professional skepticism in students and major choice (accounting majors, non-accounting business majors, and liberal arts majors)?
3. Is there a difference between the level of trait professional skepticism in students and personal values?

The intent of this study is to add to the body of knowledge on professional skepticism and its antecedents related to trait skepticism and individual differences in



students. This research determines the association of demographic variables, major choice, and personal values and the level of trait skepticism. The participants were undergraduate students from two distinct university types. An email survey was sent to these participants to capture responses electronically.

### Limitations

The study tests subjects from one Christian liberal arts institution and one state institution in Oregon. While Oregon may be representative of the Northwest region of the United States, the sample sizes for high and low trait skepticism may change if such tests were administered in a different locality. Additionally, personal values are constructs subject to various environmental factors and as such the relative importance of any specific personal value may change from region to region (although specific groupings of personal values have been shown to be stable across regions and cultures). Therefore, the results may be limited to usefulness in a context of the Northwestern United States.

This research also tests a student population, most of which are without work experience in an accounting-related job. Although students share proximity to first-year working professionals, the proportion of high and low trait skeptics and level of high and low trait skepticism may change if such tests were administered to working professionals who have been employed for a number of years. Therefore, the results may be limited to usefulness in an early-career context.

## Organization of this Research

Chapter 2 of this research summarizes the theoretical and empirical literature on trait professional skepticism and personal values in the area of accounting, particularly as it relates to skeptical behavior.

Chapter 3 develops and presents the hypotheses used for this research. In addition, it describes the proposed research methodology, including data collection, variables, and statistical methods, and rationale for the choices made therein.

Chapter 4 presents, in detail and summary form, the results of the data collection and analysis.

Lastly, Chapter 5 summarizes the results of the data analyses, discusses the findings as well as their relevance and contribution, and presents ideas for future research in light of these results.

## CHAPTER 2 – REVIEW OF THE LITERATURE

### Introduction

This chapter is a review of key literature related to professional skepticism and personal values. There is much that remains to be uncovered as it pertains to understanding different levels of professional skepticism and why they occur. The accounting regulatory bodies, in response to pressure from public opinion after a litany of financial scandals, are exerting pressure on the professional and academic communities to improve and enhance professional skepticism. This heightened pressure has brought professional skepticism to the foreground of auditing research. As a result, this chapter discusses the need for professional skepticism, the nature of professional skepticism and how it relates to trait skepticism, the need to understand the antecedents of trait skepticism, and the need to link trait skepticism with personal values. The chapter concludes with a summary of key research gaps that exist in the literature.

### Importance of Professional Skepticism

Certainly the scrutiny of audit firms and the well documented lapses in audit judgment provide a key impetus for raising the importance of professional skepticism (CAQ, 2010; PCAOB, 2008), especially when coupled with the fact that the majority of these failures of professional skepticism have been linked to the Securities and Exchange Commission (SEC) enforcement actions (Beasley et al., 2001). The value of an audit, it seems, is based in part on the degree of professional skepticism exercised by an auditor. As a result, three central professional bodies of auditing in the United States (AICPA, CAQ, and PCAOB), have each emphasized the need for professional skepticism. But it is interesting to note that professional skepticism has been encouraged, and even

required, as part of a moral obligation in the auditing profession from the very start. For example, one of the earliest auditing standards promulgated in the United States required an auditor to exercise professional skepticism during the audit engagement (AICPA, 1997). The emphasis has not changed over the years; in fact more emphasis continues to be placed on the crucial role played by professional skepticism in auditing, as indicated by the continued issuance of domestic and international regulatory audit guidance (Public Company Accounting Oversight Board (PCAOB), 2006a, PCAOB, 2006b; The International Auditing and Assurance Standards Board (IAASB), 2012). The increased scrutiny is not limited to regulatory agencies. News agencies are also quick to report any audit deficiencies or apparent lapses of professional skepticism (Norris, 2013). There is a clear need to exercise the appropriate level of professional skepticism in the auditing profession. The concern over the issue suggests a need for additional research and testing of professional skepticism. Practitioners, regulators, and academics all lack a detailed understanding of the determinants and dimensionality of professional skepticism. As such, the topic remains an important and relevant concept for all parties and is worthy of serious attention.

### Professional Skepticism Background

#### *Definitions of professional skepticism*

In spite of the reinvigorated interest in professional skepticism, the concept itself remains poorly defined and underexplored (Hurt, 2010; Nelson, 2009). This is likely due to the difficulty of measuring professional skepticism (Hurt et al., 2012) and the broad nature of the concept which borrows from academic literature in accounting, psychology, philosophy, management, organizational behavior, and several others. In

describing the work of an auditor, U.S. Auditing Standards describe professional skepticism as “an attitude that includes a questioning mind and a critical assessment of audit evidence” (PCAOB, 2006b, para. AU Section 230.07). This compares favorably with international guidance, which states that a skeptical auditor adopts “a questioning approach when considering information and in forming conclusions” (IAASB, 2012, p. 3). Both perspectives suggest the adoption of a “neutral,” or bias-free, position when examining audit evidence. In other words, an auditor adopting the “neutral” view “neither assumes that management is dishonest nor assumes unquestioned honesty” (PCAOB, 2006b, para. AU Section 230.09).

However, a slightly different perspective is also proposed by standard-setters, particularly in areas that focus on fraud. In a fraud context the auditor is instructed to:

...conduct the engagement with a mindset that recognizes the possibility that a material misstatement due to fraud could be present, regardless of any past experience with the entity and regardless of the auditor's belief about management's honesty and integrity. Furthermore, professional skepticism requires an ongoing questioning of whether the information and evidence obtained suggests that a material misstatement due to fraud has occurred. In exercising professional skepticism in gathering and evaluating evidence, the auditor should not be satisfied with less-than-persuasive evidence because of a belief that management is honest. (PCAOB, 2006a, para. AU Section 316.13)

In an international context, auditors are encouraged to consider financial statement fraud “...recognizing the possibility that a material misstatement due to fraud could exist, notwithstanding the auditor’s past experience of the honesty and integrity of the entity’s

management” (IAASB, 2012, p. 9). These perspectives suggest a different mindset, one that assumes some level of dishonesty rather than any bias *ex ante*. In other words auditors adopt a “presumptive doubt” perspective. Nelson (2009) develops a more complete analysis of the “neutral” and “presumptive doubt” perspectives, but it should be noted here that academic definitions of professional skepticism are equally as inconsistent as those definitions provided by standard-setters.

More recently, a third possible perspective has also emerged from the development of the Hurtt skepticism scale (2010). The Hurtt scale is based on six separate characteristics of skeptics, including: suspension of judgment, questioning mind, search for knowledge, interpersonal understanding, self-confidence, and self-determination. In their totality these six dimensions suggest a balance between keeping an open mind and actively questioning until the skeptic is satisfied with enough evidence to arrive at a conclusion. In this sense Nelson (2009) notes these characteristics are consistent with both the “neutral” and “presumptive doubt” perspectives. This research adopts the third perspective developed from the six separate dimensions of skeptics identified in the Hurtt skepticism scale.

#### *Nelson’s model of professional skepticism*

Nelson (2009) provided the first integrative model of professional skepticism. According to Nelson, skeptical behavior occurs when an auditor changes his or her actions based on skeptical judgment. Skeptical judgment arises when certain individual characteristics such as knowledge, traits, and ability, plus any environmental characteristics such as incentives, interact with audit evidence characteristics. Knowledge, a combination of unique auditor traits and prior training and experience,

consists of the ability to understand and correlate relationships, patterns, and error rates in audit evidence to increased audit risk. This model is especially helpful for conceptualizing both the combined and individual interactions between audit evidence, auditor characteristics, and environmental factors. Professional skepticism is the translation of skeptical judgments, which were created through interaction of these determinants, into skeptical actions.

Nelson believes that individual auditor traits are an important antecedent of professional skepticism. He defines traits as non-knowledge attributes that refer to an auditor's "problem-solving ability, ethical predisposition, and other traits such as self-confidence and tendency to doubt" (2009, p. 2). Nelson urges researchers to investigate the trait component of the skepticism model. As such, this research examines the individual trait component of Nelson's model.

#### *Hurtt's model of professional skepticism*

Hurtt (2010) further refines the trait concept identified in the Nelson model by creating the first psychological scale to measure trait professional skepticism. This represents a significant development as prior literature used one-dimensional proxies for professional skepticism. She models skeptical behavior as a function of an auditor's skeptical mindset. Skeptical mindset represents the auditor's frame of mind when considering a relatively stable personality trait and a temporarily aroused state skepticism influenced by various moderating variables (such as engagement circumstances or prior experience with the client). In order to measure the trait skepticism component, Hurtt developed a 30-item multi-dimensional scale that captures six distinct characteristics of

skeptics. Those characteristics, which are supported by various disciplines and auditing standards, are summarized from Hurtt's (2010, pp. 152–155) research as follows:

- **Questioning mind:** A questioning mind is explicitly stated in the auditing standards. Skeptics tend to question claims and increase questioning about information from unknown sources in the consumer behavior literature. Philosophers view skeptics as willing to probe and to be inquisitive.
- **Suspension of judgment:** Auditing standards highlight the importance of suspending judgment until persuasive evidence is accumulated. The psychology literature refers to this characteristic as the opposite of need for closure, or the desire for a final answer. Skeptics are open-minded and unwilling to believe without evidence according to the philosophy literature.
- **Search for knowledge:** Philosophers indicate that skeptics maintain a general search for additional knowledge. Psychologists theorize that curiosity is the motivating factor in an individual's search for more knowledge.
- **Interpersonal understanding:** Auditing standards require auditors to assess client integrity and motivation, something that is similar to questioning the motives of advertisers in the consumer behavior literature. The psychology literature notes social competence is important while in philosophy skeptics are characterized by the ability to understand differences in biases and perceptions.
- **Autonomy:** In auditing standards, an auditor decides for himself when the evidence collected is sufficient. Philosophers offer a similar view: skeptics must be personally satisfied with enough evidence before accepting the claims of others.



- Self-esteem: Psychologists refer to self-esteem as the belief in oneself and confidence in one's own ability. Auditors are encouraged to maintain professional courage while philosophers recognize a need for skeptics to weight their own insights equally with others.

These six characteristics formed the basis of the Hurtt skepticism scale. The final 30-item scale was tested and validated first with graduate and undergraduate students, and finally on practicing auditors. This scale gives researchers the ability to distinguish between more or less skeptical auditors in a variety of behavioral settings. Aside from a few early attempts to employ an experimental version of the Hurtt skepticism scale (e.g., Fullerton & Durtschi, 2004), there has been very little research that has incorporated the final scale. Yet the literature continues to acknowledge a lack of research associated with individual differences in trait skepticism. Accordingly, this research utilizes the Hurtt skepticism scale in order to (1) further validate the stability and reliability of the instrument and (2) to address the gap in literature by augmenting the research of individual differences in the level of trait skepticism.

#### Need to Understand the Antecedents of Trait Skepticism

While there has been significant amount of research on auditor characteristics in general, very little research has focused on the individual traits of auditors, especially trait skepticism as measured by the Hurtt scale. The following section discusses the pertinent literature on individual differences in trait skepticism.

#### *Individual differences using non-Hurtt scales*

McMillan & White (1993) examined how hypothesis frame, confirmation bias, and professional skepticism each impact auditor belief revisions and subsequent evidence

search. Hypothesis frame refers to whether the auditor believes that a client's financial statements contain (1) a material error (e.g. error frame) or (2) no material error (e.g. environmental factors are responsible for year over year changes). Confirmation bias refers to an auditor favoring evidence that confirms rather than refutes the initial hypothesis. Auditors exhibit professional skepticism when they converge more on error-related evidence. The results on belief revision show that: (1) hypothesis frame has a significant effect on how auditors respond to evidence, (2) subjects did not demonstrate confirmatory behavior, and (3) subjects also did not demonstrate premature closure. With respect to evidence search, the authors suggest that auditors behave in a manner consistent with their professional and legal environment; that is auditors aim to minimize audit risk by designing evidence search to uncover potential material errors irrespective of the hypothesis frame adopted. While this study does measure professional skepticism, the authors did not distinguish between trait and state skepticism and used a different scale from other studies measuring professional skepticism.

Shaub (1996) investigated the relative effect of situational and dispositional factors on auditors' trust of clients. In doing so Shaub indirectly measured skepticism via a subjective component of trust rather than extrinsic behaviors that are assumed to represent trust. In addition, the author equated professional skepticism with suspicion, a definition that may not be currently tenable. It should be noted that the survey measured perceptions and therefore may be difficult to generalize to personal, inherent traits. The results suggest that experience and situational factors play a more dominant role in auditor trust than do dispositional factors. Shaub believes that audit circumstances, rather than auditor perceptions of trustworthiness and reliability, drive the auditor's decision to

trust a client. Since a unique measurement of skepticism was created, this research suffers from a lack of comparability with other research findings.

Shaub & Lawrence (1996) developed a unique model of professional skepticism comprised of three primary elements: (1) ethical disposition, (2) experience, and (3) situational factors. This model is largely based on trust and its antithesis, suspicion. The ethical disposition component is comprised of ethical orientation, concern with professional ethics, and ethical reasoning. Ethical orientation is defined as the view held (as shaped by cultural forces and past experiences) when an individual faces an ethical dilemma. The results show several effects of situational and/or experience factors on professional skepticism. As with other unique measurements, this study is not comparable with other research literature.

Choo & Tan (2000) investigated two research questions: first, the effect of classroom instruction on students' attitude on professional skepticism, and second, whether the level of instruction would interact with their attitude and impact their ability to detect frauds in auditing. The results indicate that neither basic nor extensive instruction on skepticism significantly changed students' attitude on skepticism. In addition, extensive instruction on skepticism improved students' ability to detect fraud more than basic instruction on skepticism. Finally, students with a strong attitude on professional skepticism were affected by extensive instruction more than students with a weak attitude on professional skepticism. The authors imply: (1) that student attitude on professional skepticism might be an "innate personality trait that is resistant to change" (2000, p. 80) and (2) a student's ability to detect fraud relies in part on extensive instruction on skepticism. This provides early evidence that elements of personality trait

may exist in the professional skepticism construct. Instruction does not improve the proxy for this personality trait, but does positively interact with those classified as stronger skeptics on their ability to detect fraud.

Others have examined the relationship of professional skepticism (e.g. the ability to maintain a questioning, unbiased mindset) to auditor decision making (Quadackers et al., 2009). The authors were curious about an auditor's personal skeptical characteristics and whether these characteristics are predictive of the auditor's behaviors when facing decisions that carry more risk. The primary question of interest is whether individual auditor skeptical characteristics have a relationship with the same auditor's skeptical judgments and decisions. The results of the study are important and provide some of the first evidence that skeptical characteristics affect skeptical judgments and decisions, especially as it relates to interpersonal trust. This opens an avenue for a rich set of future research particularly as it relates to understanding individual personality traits and the relationship to professional skepticism.

#### *Individual differences using the Hurtt scale*

Carpenter & Reimers (2009) provided some of the first investigations of the skepticism links in the Nelson model. In particular the authors examined whether incentives (e.g. partner influence) and the evidential input (presence of fraud) affect auditor judgments and actions. The authors also employed the Hurtt scale and show that trait skepticism is not influenced by either incentives or evidential input, confirming that trait skepticism represents an enduring personality characteristic.

Frag & Elias (2012) researched whether professional skepticism is related to ethical perceptions of earnings management. In conducting the investigation the authors

employed the Hurtt trait skepticism scale to determine whether high level skeptics view earnings management behaviors differently from low level skeptics. Two scales were utilized: one to capture earnings management actions, and another to measure student professional skepticism (the Hurtt scale). The results show that higher professional skepticism scores were generally associated with more unethical perceptions, the first study to establish such a link. Generally, high skeptics viewed most opportunistic behavior and manipulations as more unethical than low skeptics.

Hurtt et al. (2010) developed a study that examines the impact of trait skepticism (as measured by the Hurtt scale) on skeptical behavior, specifically evidence assessment and generation of alternatives. As such, this is one of the first studies to show an empirical link between trait skepticism and skeptical behavior. In particular, the results show that high skeptic auditors are more likely to engage in skeptical behaviors in both skepticism-inducing and non-skepticism inducing environments. In other words, detection rate of contradictions when reviewing audit work papers is higher for skeptical auditors with the rate improving when induced with environmental factors warranting skepticism. The authors suggest that high skeptic auditors behave in a systematically different way from low skeptic auditors. The innate level of skepticism is an important factor and the authors encourage its consideration in both education and the workforce.

Popova (2013) examined trait skepticism in students and how it interacts with client-specific experiences (previous experiences were categorized as positive, negative, or none). Trait skepticism was measured using the Hurtt scale and was used in the first stage of research in order to categorize students as either high skeptics or low skeptics. Prior experience is manipulated in the experiment and perceptions of trustworthiness are

also captured. The results show that audit judgments are influenced by level of trait skepticism and previous client experience.

The preceding discussion suggests that individual differences in professional skepticism exist and are well established. When a consistent trait skepticism measure is employed (e.g., the Hurtt scale) there is also evidence that higher levels of trait skepticism tend to lead to more skeptical judgments. It is less clear whether there are common characteristics between individuals that exhibit high levels of trait skepticism and those who exhibit low levels of trait skepticism. Although Hurtt (2010) tests for differences among gender, GPA, class standing, and age and the level of trait skepticism, there is no other research which examines, to the best of this researcher's knowledge, other characteristics associated with high levels of trait skepticism. A better understanding of characteristics associated with high levels of trait skepticism might allow for better selection (both into the accounting major and, ultimately, into the auditing profession), better training, or improved audit effectiveness. Selection in particular is of interest to professionals and academics alike (Hurtt et al., 2012; Nelson, 2009). This research enhances the dialogue on selection and trait skepticism by examining the inputs into the profession (students) and whether the level of trait skepticism varies by major choice.

#### Need to Link Trait Skepticism with Personal Values

The literature in psychology identifies the importance of understanding personality with respect to personal values. This literature examines the separate but similar constructs of personality and personal values. Although the malleability of personality is still hotly debated, personality has long been linked with motivating

behavior. Recent research has established the predictive value of personal values on behavior, especially when combined with components of personality. In this sense values may reinforce specific behaviors, especially when personality and values align. There are also calls for additional research in the area of personality and values as these constructs been historically under-researched. For purposes of this research, personality is reduced to the sub-construct of trait skepticism as measured by the Hurtt scale. The construct of personal values was utilized in this study both as a way to better understand differences in trait skepticism and as an interacting variable with personality. Following is a brief review of the literature supporting a link between personality, personal values, and behavior.

#### *Psychology research on personal values*

Although Rokeach (1968) is widely considered the pioneer in personal value research, Schwartz (1992) is credited with significant improvements in values measurement. In his inaugural study, Schwartz (1992) conducted an analysis spanning 20 countries aimed at discovering the contents, structure, and universality of values. As a part of his research, Schwartz developed a measurement instrument (the Schwartz Value Survey) which consists of 56 individual values. Using factor analysis he is able to show 10 meaningful value sets that are stable across and within cultures. The 10 value sets (and sample values for each) are: Power (authority, wealth, social recognition); Achievement (ambition, competence, success); Hedonism (pursuit of pleasure, enjoyment, gratification of desires); Stimulation (variety, excitement, novelty); Self direction (creativity, independence, self-respect); Universalism (social justice, equality, wisdom, environmental concern); Benevolence (honesty, helpfulness, loyalty);

Conformity (politeness, obedience, self-discipline/restraint); Tradition (respect for tradition and the status quo, acceptance of customs); and Security (safety, stability of society). The value domains are organized in a circumplex such that values across from one another tend to conflict while values adjacent to one another are similar. This implies that the values are also ordered by importance. For example, suppose a woman values stimulation (variety and excitement) more than security (safety). If forced to choose between traveling to Russia or England, she would more likely select Russia, because she places greater importance on feeling excitement than on feeling safe. Since the values are ranked by importance, and as discussed more fully below, personality and values are linked, it is plausible that high skeptics or low skeptics might share similar value domains.

Olver & Mooradian (2003) provided a theoretical basis for integrating personality with personal values and subsequently conducted an investigation that shows support for the integrated model. The authors noted that personality is primarily comprised of endogenous characteristics while personal values are learned adaptations influenced by external forces, consistent with the characterizations provided by Parks & Guay (2009). The authors also noted that personal values are not situation-dependent; that is values are beliefs that transcend specific situations. The authors also indicated that prior research has demonstrated stronger relationships between values and the intellectual personality traits as opposed to weaker relationships between values and the more affective personality traits. They conducted a survey and the results suggest that individuals rely on values that are most compatible with that individual's personality and confirm the link



between personality and values. The authors call for more research investigating the causal models that incorporate personality, values, and other environmental factors.

Parks & Guay (2009) show that personality and personal values are distinct, but not completely uncorrelated, constructs. While personality traits are essentially immutable, personal values are more malleable, representing beliefs about what ought to be. Also, values guide personal judgments about appropriate behavior, but do not vary based on the situation (in other words, they are not attitudes). The authors argue that personality, in addition to social experience, may influence the development of values and that there is a consistent relationship between the two. As a result, while there are clear theoretical distinctions between personality and values, there is also a degree of similarity. Furthermore, the authors show a clear link between personality and behavior. The literature on whether personal values impact on behavior is more limited, but importantly, is theorized by Rokeach (1968) and Schwartz (1992). As such, Parks & Guay (2009) proposed that both personality and personal values are antecedents to behavior, but noted a lack of research exploring the simultaneous impact of personality and values on behavior.

#### *Accounting research on personal values*

Prior personal values research in accounting focuses primarily on understanding differences in values between gender (Eaton & Giacominio, 2001; Giacominio & Akers, 1998), discipline (Baker, 1976; Eaton & Giacominio, 2000), ethnicity (Lan et al., 2009), or other factors (Eaton & Giacominio, 2001). Very little research has examined differences between the level of trait skepticism and personal values. One study explores the relationship of personal values to ethical decision-making behavior (Shafer et al.,

2001). This is the only study, to the researcher's knowledge, that utilizes a complete universal set of personal values from the psychology field to examine behavior. A very small number of other studies use one or two values variables that are not always directly related to the personal values literature considered in this research (e.g., Collins et al., 2007).

The aforementioned models by Nelson (2009) and Hurtt (2010) show that skeptical behavior is due in part to trait skepticism and other exogenous, situation-specific factors. Personal values are more enduring than situation-specific variables, but are also not immutable like personality. This suggests that personal values may represent an intermediate link between personality and environmental factors and may contain important predictive information for skeptical behavior. The psychology literature also supports the combination of traits and personal values when considering behavior and suggests a link between personality and personal values. Yet very little research in accounting has utilized personal values, and to this researcher's knowledge, it has not been used at all in the professional skepticism domain. Therefore it is unclear as to whether high trait skeptics have different values than low trait skeptics. There is also a lack of clarity concerning the interactive effect of personal values and the level of trait skepticism. A better understanding of personal values and trait skepticism could improve selection, firm effectiveness (via value congruence), training, and audit effectiveness. This research initiates the dialogue on personal values and trait skepticism by examining whether personal values differences by level of trait skepticism and the interactive effect of personal values and level of trait skepticism.

## Summary

Research in earnest on the topic of professional skepticism is still in its nascent stages. This is in part due to the aforementioned ill-defined nature of the concept in both practice and the literature. As a response to this lack of conceptual and definitional clarity of professional skepticism, Nelson (2009) recently conceived a model of professional skepticism that has helped frame the construct. The Nelson model adopts a presumptive doubt stance and delineates between several factors that affect skeptical judgment and behavior, such as knowledge, experience, and traits (personality, ethics, cognitive ability). Traits in particular are an important, and relatively unexplored, area of research in professional skepticism. As such, Hurtt (2010) refined and modified the trait component of Nelson's model, identified trait skepticism as an antecedent of skeptical behavior, and developed a multi-dimensional psychological scale (e.g. personality construct) measuring individual differences in trait skepticism.

A separate but related stream of literature in psychology identifies the importance of understanding personality traits with respect to personal values (Olver & Mooradian, 2003; Parks & Guay, 2009). This literature examines the separate but similar constructs of personality and personal values. Although the malleability of personality is still hotly debated, personality has long been linked with motivating behavior (Schwartz, 1992). Recent research has also established the predictive value of personal values on behavior, especially when combined with components of personality (Olver & Mooradian, 2003; Parks & Guay, 2009). In this sense values may reinforce specific behaviors, especially when personality traits and values align.

The gaps in the literature are clear. This research is a direct response to improve our understanding of trait skepticism (Hurtt et al., 2012, 2010; Nelson, 2009) and to integrate personality constructs and personal values in behavior research (Olver & Mooradian, 2003; Parks & Guay, 2009). The purpose of this research is to expand understanding of trait skepticism, particularly as it relates to individual characteristics such as personal values, major choice, and other demographic variables. By studying these antecedents of trait skepticism, this research helps the continuing debate on how auditors improve their level of professional skepticism.

## CHAPTER 3 – RESEARCH METHODOLOGY

This chapter discusses the methodology used in this study. The analysis includes the development of hypotheses, research design, sampling, scales that were used and their reliability and validity, collection procedures, and variables. This research examined the association of demographic variables, major choice, and personal values and the level of trait among accounting, non-accounting business, and liberal arts students in one Christian liberal arts university and one state university in Western Oregon. The intent of the research was to determine whether there is a significant difference in demographics, major choice, or personal values as compared to a student's level of trait professional skepticism.

### Hypotheses

Understanding differences in individual characteristics among high trait skeptics and low trait skeptics is important to better determine how trait skepticism might be used for career path and selection in the auditing profession. In this study the primary characteristics of interest include student demographics (such as gender, GPA, class standing, and age), major choice (accounting majors, non-accounting business majors, and liberal arts majors), and personal values.

While developing the skepticism scale, Hurtt (2010) tests graduate and undergraduate students and accounting professionals among several demographic variables. The specific student demographics listed in Hurtt's research include gender, GPA, class standing (i.e., freshman, sophomore, etc.), and age. The results indicate no significant differences in demographics. The few other studies to employ the Hurtt scale have corroborated these findings. However, because the Hurtt scale is still relatively

new, and since there has been limited use of students with the instrument, it is important to continue to validate these results. Since there is no evidence to the contrary, this researcher expected no difference in demographics, which leads to the following null hypothesis:

H<sub>0</sub>1: The level of student trait skepticism is not associated with gender, GPA, class standing, or age.

The Hurtt (2010) skepticism scale was also developed using broad psychological measures not limited to a specific knowledge domain. This allows the scale to be used in a flexible manner across disciplines, a contention supported by Hurtt herself when she acknowledges that the scale was intentionally designed to be used on a business, not just accounting, subject pool. Major choice has often been used in the accounting literature and other domains to distinguish differences in students. A small sample of studies using major choice include: moral reasoning (Jeffrey, 1993; Lan, Gowing, McMahon, Rieger, & King, 2007; McCabe, Dukerich, & Dutton, 1991), personal values (Baker, 1976; Eaton & Giacomino, 2000; Giacomino & Akers, 1998; Lan et al., 2007), generational differences (Giacomino, Brown, & Akers, 2011), and personality (Andon, Chong, & Roebuck, 2010; Pike, 2006). Furthermore, Nelson (2009) calls for future research into the effectiveness of trait skepticism tools for screening students and employees. This implies that there is a need to identify whether high trait skeptic students are enrolling into the accounting major. Currently there is no research linking major choice with trait skepticism. However, the personality research in accounting shows that differences exist between accounting and non-accounting majors. This suggests that differences in trait skepticism, within and between majors, might exist, though there are no theoretical

justifications for predicting directionality. As a result, the null hypothesis was stated as follows:

H<sub>0</sub>2: High trait skepticism students do not choose different majors than low trait skepticism students.

Parks & Guay (2009) show that personality and personal values are distinct, but not completely uncorrelated, constructs. Personality traits tend to be more stable than person values, which are more malleable. Personal values are beliefs about what “ought to be” and as such guide personal judgments about appropriate behavior, but do not vary based on the situation (in other words, they are not attitudes). Research has shown that personality, in addition to social experience, may influence the development of values and that there is a consistent relationship between the two. As a result, there is both a clear distinction and a clear degree of similarity between personality trait and personal values. Some researchers believe that individuals tend to prefer personal values that align with inherent personalities (Olver & Mooradian, 2003; Parks & Guay, 2009). This suggests that high trait skeptics may hold different personal values than low trait skeptics. The null hypothesis was stated as follows:

H<sub>0</sub>3: High trait skepticism students do not have different personal values than low trait skepticism students.

### Research Design

The methodology for this research was quantitative. The ability to measure trait skepticism was a recent development in the literature. Other than the demographic variables of age, gender, class standing, and GPA considered in the development of the Hurtt skepticism scale (2010), there have been no studies, to this researcher’s knowledge,

that have investigated whether high or low trait skeptics have differences in individual characteristics, particularly major choice and personal values. The level of analysis for this research was focused on the individual, specifically undergraduate students. This study employed a web survey comprised of demographic variables and two scales with established reliability using different samples.

### Sampling

Purposive sampling was used in this study. This study examined accounting, non-business accounting, and liberal arts students from one Christian liberal arts institution (George Fox University located in Newberg, Oregon) and one state institution (Oregon State University located in Corvallis, Oregon). Non-business accounting majors included those students pursuing traditional business disciplines such as management, marketing, global/international business, entrepreneurship, and finance. Liberal arts students consisted primarily of traditional disciplines such as sciences, writing, literature, history, music, philosophy, art and other non-professional majors. Researchers should employ convenience sampling carefully, but in this research there were several advantages gained by studying student populations. First, as Popova (2013) suggests, the use of students allowed for a more pure estimation of trait skepticism unaffected by prior work experience. Second, the professional skepticism research domain, which has largely focused on auditors, stood to benefit from student-focused research. Third, student-based research enhanced the ability to identify and improve professional skepticism prior to employment. Samples across two different institution types and several major types should also improve generalizability of the results. Gatekeepers at the universities were



identified through personal acquaintances. Respondents were solicited via a cover letter email to complete an online survey instrument (Survey Monkey) via a questionnaire link.

### Instrumentation

The three part instrument included two scales previously used in accounting and psychology research. Its components were trait skepticism as measured by the 30-item Hurtt Professional Skepticism Scale (Hurtt, 2010), personal values as measured by the 57-item Schwartz Values Survey (Schwartz, 1992), and a final component providing descriptive information.

#### *Hurtt Professional Skepticism Scale*

The scale measuring trait skepticism was from Hurtt's work to develop a multi-dimensional construct that captures six distinct characteristics of skeptics. These characteristics include: a questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, autonomy, and self-esteem. There were 30 items in this component of the questionnaire (see Appendix B). The statements were scored on a six-point scale as to how individuals generally describe themselves, ranging from "Strongly disagree" (1) to "Strongly agree" (6) with the higher score indicating greater association with the described characteristic.

This scale was selected because of its ability to measure inherent personality constructs associated with skepticism. Hurtt (2010) suggested that reliabilities of .70 and above indicate good to excellent research relationships. She validated this scale using through pilot testing with students and final instrumentation with auditors where  $r = .86$ . The scale has since been used by other researchers with strong reliabilities. See Table 1.

**Table 1. Reliabilities of Trait Skepticism Scale in Previous Studies**

Study	Sample	Reliability
Carpenter & Reimers, 2009 30-item scale	80 practicing auditors	Not published
Farag & Elias, 2012 30-item scale	278 students	r = six individual constructs measured separately from .57 to .79
Hurt, 2010 30-item scale	200 practicing auditors	r = .86
Popova, 2013 30-item scale	247 undergraduate students 200 practicing auditors	r = .88 r = .84
Peytcheva, 2014 30-item scale	78 undergraduate students 85 practicing auditors	r = .88 r = .84

The high correlation ( $r = .84$  or higher) and use among practitioners and students support the robustness in reliability of the scale and its use with student participants in this study.

#### *Schwartz Values Survey*

Schwartz' work to develop a universal set of human values is the basis of his instrument measuring personal values. There were 57 items in this component of the questionnaire, which when combined, comprise 10 value sets: Achievement, Benevolence, Conformity, Hedonism, Power, Security, Self-direction, Stimulation, Tradition, and Universalism (see Appendix A). The statements were scored on a 9-point scale as to how important each value is as a guiding principle in that individual's life, the range from "Opposed to my values" (-1) to "of supreme importance" (7) with the higher score indicating greater importance of the value.

This scale was selected because of its ability to measure common values held across cultures and its wide use and acceptance. Schwartz (1992) showed the reliabilities

of all his samples exceed .45 and suggests that these reliabilities are reasonable given the small number of items in each value index. Parks & Guay (2009) noted that the Schwartz values theory is the most widely accepted and well-developed of all value theories.

### *Demographics*

The final section of the questionnaire was biographical data asking gender (question 32), age (question 33), class standing (question 34), institution (question 35), citizenship (question 36), GPA (question 37), major type (question 38), and length within identified major type (question 39). To facilitate correct participant responses, the responses were categorical. The questionnaire also contained several questions related to future research outside the scope of this dissertation. The complete questionnaire is found in Appendix C.

### Administration and Collection Procedures

After human subjects approval was received (Appendix E), data collection began in March 2014. Questionnaires were sent electronically to potential participants using the obtained email addresses or to the gatekeepers for forwarding via email or posting in the class' electronic course site. A cover letter (Appendix D) was sent electronically with a link to the questionnaire to address the issues of anonymity and consent as well as to include contact information.

Participants responded to the instrument by using a persistent web link pointing to the electronic survey. After one week, a reminder was sent to participants. Two more reminders were sent over the final two weeks. Participants were asked "At which institution are you currently enrolled?" (question 35) and "Please select your current major from the options below: Accounting, Non-accounting business (e.g. finance,

marketing, management, global business, and entrepreneurship), Liberal arts (e.g. English, history, art, biology, chemistry, math, etc.)” (question 38). The responses were used to track the cumulative number of responses by institution and major (see Table 2).

**Table 2. Major and Institution, Frequencies, and Percentages**

**Major \* Institution Crosstabulation**

			Institution		Total
			George Fox University	Oregon State University	
<b>Major</b>	<b>Accounting</b>	Count	31	74	105
		% within Major	29.5%	70.5%	100.0%
		% within Institution	16.1%	30.0%	23.9%
		% of Total	7.0%	16.8%	23.9%
	<b>Business</b>	Count	44	133	177
		% within Major	24.9%	75.1%	100.0%
		% within Institution	22.8%	53.8%	40.2%
		% of Total	10.0%	30.2%	40.2%
	<b>Liberal arts</b>	Count	118	40	158
		% within Major	74.7%	25.3%	100.0%
		% within Institution	61.1%	16.2%	35.9%
		% of Total	26.8%	9.1%	35.9%
<b>Total</b>	Count	193	247	440	
	% within Major	43.9%	56.1%	100.0%	
	% within Institution	100.0%	100.0%	100.0%	
	% of Total	43.9%	56.1%	100.0%	

### Data Analysis

#### *Dependent variable*

Analysis occurred on the individual level. Trait professional skepticism represents an individual’s skeptical personality trait as measured by the Hurtt scale and is used as the dependent variable under hypotheses 1 through 3. The Hurtt scale ranges in value from a low of 30 to a maximum of 180. For hypothesis 1 individual’s responses from the Hurtt Scale were scored and a composite trait skepticism score was generated. For hypothesis 2 and 3 the composite skepticism score was used to separate respondents

into two groups: high trait skeptics and low trait skeptics. Participants were split along the median composite trait skepticism score (median = 131 on a scale of 0 – 180; mean = 131). The difference between trait skepticism level means of the two groups was significant at the  $p = .000$  level. In addition, the use of the median for splitting participants is consistent with prior research utilizing the median Hurtt score (Hurtt, Eining, & Plumlee, 2008; Popova, 2013).

#### *Independent variables*

Demographic data (age, gender, class standing, and GPA) was used in hypothesis 1 while major choice represented an individual's selected college major in hypothesis 2. Personal values represent an individual's ranking of beliefs used as guiding principles and were rated in a 9-item scale. Personal values may also grouped by value dimension (Achievement, Benevolence, Conformity, Hedonism, Power, Security, Self-direction, Stimulation, Tradition, and Universalism). For hypothesis 3 individual's responses from the Schwartz Survey were scored and 10 composite scores for each value set (Conformity, Tradition, Benevolence, Universalism, Self-Direction, Stimulation, Hedonism, Achievement, Power, and Security) were generated.

#### *Statistical approach*

A variety of statistical analysis was employed depending on the nature of the variables and research question addressed. Significance was set at  $p < .05$ . For hypothesis 1 ANOVAs were used for each independent variable except gender, which only had two groups. Gender was tested with an independent samples t-test. Hypothesis 2 compares a categorical dependent variable (more or less trait skeptical) with a 3 group categorical independent variable (major choice). As a result, a chi-square test was used

to identify whether a relationship between the variable exists. Hypothesis 3 compares high or low trait skeptics with interval personal value sets and therefore employed t-tests for differences in means among each of the 10 personal value sets. Post hoc tests were employed when necessary.

### *Reliabilities*

Reliabilities for this study were calculated for the 30-item Hurtt scale and 57-item Schwartz survey. Cronbach's alpha ( $\alpha$ ) was used to calculate reliabilities. The trait skepticism composite was .834 showing high internal reliability. The Schwartz value set composite was .949, also showing high internal reliability. Both reliabilities are in line with prior research, as discussed in the *Instrumentation* section above.

### *Research Questions*

A summary of the three research questions, corresponding hypotheses, survey items, variables, variable levels, and statistics employed to analyze each research question is listed in Table 3.

**Table 3. Research Questions, Questionnaire Items, and Related Analyses**

RQ1: Is there a difference between the level of trait professional skepticism in students' demographic characteristics (gender, GPA, class standing, age)?	H <sub>0</sub> 1: The level of student trait skepticism is not associated with gender, GPA, class standing, or age.	Hurtt scale: composite score from all 30 items Demographic section (questions 32 - 34; 37)	Level of TS (interval; skepticism score)	Gender GPA Class standing Age	Categorical	Tests of differences (t-tests) and ANOVAs identifying differences between groups
RQ2: Is there a difference between the level of trait professional skepticism in students and major choice (accounting majors, non-accounting business majors, and liberal arts majors)?	H <sub>0</sub> 2: High trait skepticism students do not choose different majors than low trait skepticism students.	Hurtt scale: composite score from all 30 items Demographic section (question 35)	Level of TS (categorical; grouped into high and low skeptics)	Major choice	Categorical	Chi-square test identifying relationships between groups
RQ3: Is there a difference between the level of trait professional skepticism in students and personal values?	H <sub>0</sub> 3: High trait skepticism students do not have different personal values than low trait skepticism students.	Hurtt scale: composite score from all 30 items Schwartz survey: composite scores for 10 value sets from 57 items	Level of TS (categorical; grouped into high and low skeptics)	Personal values	Interval	Tests of differences (t-tests) between 10 personal value sets

## CHAPTER 4 – FINDINGS

The primary objective of this study was to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. As a result, the primary goal was not to study the factors *causing* trait professional skepticism, but rather whether the *result* of skeptical personality trait was associated with different combinations of specific characteristics among a set of students. Understanding how individual characteristics related to the level of trait skepticism is important to better determine how trait skepticism might be used for career path and selection in the auditing profession.

This study obtained questionnaire responses of undergraduate students from two universities to answer the three research questions. Each student was sent, by the researcher or a gatekeeper, an email that included a cover letter with a web link to the questionnaire that took students to the SurveyMonkey website. The overall response rate for George Fox University was 10.90% ( $n = 193$ ). The combined response rate between both universities could not be calculated as the gatekeepers from Oregon State University forwarded the message without reporting the potential number of respondents. In the future, identifying methods to capture complete response rates will be important to discuss with gatekeepers. This is discussed further in the limitations section in chapter 5.

This chapter is divided into three main sections. The first section provides descriptive characteristics of the respondents. The second section states each specific research question, hypotheses, and the statistical analyses. Supplemental analyses are included in the final section.



## Descriptive Characteristics of Participants

This section describes the participants and their demographics.

### *Personal Demographics*

This study received 440 responses from two universities. Participants responded to a question asking for the name of the institution, their gender and age group, and whether they were a domestic or international student. The percentages of respondents by school are 43.9% (n = 193) from George Fox University and 56.1% (n = 247) from Oregon State University (see Table 4). Approximately 46% (n = 201) of the sample was men (see Table 5). Comparatively, males participated at a greater rate from Oregon State University (29.5%, n = 130) as compared to George Fox University (16.1%, n = 71).

**Table 4. Participants (n = 400) across Universities - Frequencies and Percentages**

		<b>Institution</b>	
		<b>Frequency</b>	<b>Percent</b>
<b>Valid</b>	<b>George Fox University</b>	<b>193</b>	<b>43.9</b>
	<b>Oregon State University</b>	<b>247</b>	<b>56.1</b>
	<b>Total</b>	<b>440</b>	<b>100.0</b>

**Table 5. Gender of Participants by University - Frequencies and Percentages**

<b>Gender * Institution Crosstabulation</b>					
			<b>Institution</b>		<b>Total</b>
			<b>George Fox University</b>	<b>Oregon State University</b>	
<b>Gender</b>	<b>Female</b>	<b>Count</b>	<b>122</b>	<b>117</b>	<b>239</b>
		<b>% of Total</b>	<b>27.7%</b>	<b>26.6%</b>	<b>54.3%</b>
	<b>Male</b>	<b>Count</b>	<b>71</b>	<b>130</b>	<b>201</b>
		<b>% of Total</b>	<b>16.1%</b>	<b>29.5%</b>	<b>45.7%</b>
<b>Total</b>		<b>Count</b>	<b>193</b>	<b>247</b>	<b>440</b>
		<b>% of Total</b>	<b>43.9%</b>	<b>56.1%</b>	<b>100.0%</b>

The age ranges of participants were distributed from 18-22 years, 23-27 years, 28-32 years, 33-37 years, 38-42 years, 43-47 years, 48-52 years, and over 53. Several age

groups had a small number of respondents. As a result these participants were re-categorized into a single age group identified as over 27. These participants included 2 respondents over 53, 1 respondent from 48-52 years, 5 respondents from 38-42 years, 3 respondents from 33-37 years, and 14 respondents from 28-32 years were combined into a new age group identified as over 27. Most students, irrespective of institution, 78.9% (n = 347), reported their age as 18-22 years. A higher rate of participants over 22 was from Oregon State University (see Table 6). Females in the age range of 18-22 had the highest number at 196 (44.5%) of any age and gender group. 34.3% (n = 151) of males reported age of 18-22 while 9.5% (n = 42) reported age of 23-27.

**Table 6. Age Ranges by University - Frequencies and Percentages**

**Age \* Institution Crosstabulation**

			Institution		Total
			George Fox University	Oregon State University	
Age	18-22	Count	176	171	347
		% of Total	40.0%	38.9%	78.9%
	23-27	Count	16	52	68
		% of Total	3.6%	11.8%	15.5%
	Over 27	Count	1	24	25
		% of Total	0.2%	5.5%	5.7%
Total		Count	193	247	440
		% of Total	43.9%	56.1%	100.0%

Domestic students accounted for 85.7% (n = 377) of the respondents. Of the 63 international students (14.3%), the majority (10.7%, n = 47) were enrolled at Oregon State University (see Table 7).

**Table 7. Domestic and International Participants by University - Frequencies and Percentages**

**Domestic \* Institution Crosstabulation**

			Institution		Total
			George Fox University	Oregon State University	
Domestic	Domestic	Count	177	200	377
		% of Total	40.2%	45.5%	85.7%
	International	Count	16	47	63
		% of Total	3.6%	10.7%	14.3%
Total		Count	193	247	440
		% of Total	43.9%	56.1%	100.0%

*GPA Demographics*

Participants were asked to self-report cumulative GPA at the time of the survey. The GPA ranges of respondents were distributed from 1.7 to 2.6, 2.7 to 3.6, and 3.7 to 4.0. The respective percentages were 7.3% (n = 32), 63.6% (n = 280), and 29.1% (n = 128) (see Table 8). 20.2% (n = 89) of the highest GPA group was from George Fox University.

**Table 8. GPA of Participants by University - Frequencies and Percentages**

**GPA \* Institution Crosstabulation**

			Institution		Total
			George Fox University	Oregon State University	
GPA	3.7 to 4.0	Count	89	39	128
		% of Total	20.2%	8.9%	29.1%
	2.7 to 3.6	Count	94	186	280
		% of Total	21.4%	42.3%	63.6%
	1.7 to 2.6	Count	10	22	32
		% of Total	2.3%	5.0%	7.3%
Total		Count	193	247	440
		% of Total	43.9%	56.1%	100.0%

The rate of females and males reporting GPA of 2.7 to 3.6 was similar at 33.0% (n = 145) and 30.7% (n = 135), respectively (see Table 9). GPA of 3.7 to 4.0 was most frequently reported by females with 81 participants (18.4%).

**Table 9. GPA by Gender - Frequencies and Percentages**

**GPA \* Gender Crosstabulation**

			Gender		Total
			Female	Male	
GPA	3.7 to 4.0	Count	81	47	128
		% of Total	18.4%	10.7%	29.1%
	2.7 to 3.6	Count	145	135	280
		% of Total	33.0%	30.7%	63.6%
	1.7 to 2.6	Count	13	19	32
		% of Total	3.0%	4.3%	7.3%
Total		Count	239	201	440
		% of Total	54.3%	45.7%	100.0%

Participants were also asked to identify their current major group, defined as accounting, non-accounting business (e.g. finance, marketing, management, global business, entrepreneurship), and liberal arts (e.g. English, history, art, biology, chemistry, math, etc.). Business majors most frequently reported GPA of 2.7 to 3.6 (29.8%, n = 131). Liberal arts majors had the highest number of respondents with GPA of 3.7 to 4.0 at 66 (15.0%) while Accounting majors reported only 1 participant with GPA of 1.7 to 2.6 (0.2%) (see Table 10).

**Table 10. GPA by Major - Frequencies and Percentages**

**GPA \* Major Crosstabulation**

			Major			Total
			Accounting	Business	Liberal arts	
GPA	3.7 to 4.0	Count	35	27	66	128
		% of Total	8.0%	6.1%	15.0%	29.1%
	2.7 to 3.6	Count	69	131	80	280
		% of Total	15.7%	29.8%	18.2%	63.6%
	1.7 to 2.6	Count	1	19	12	32
		% of Total	0.2%	4.3%	2.7%	7.3%
Total		Count	105	177	158	440
		% of Total	23.9%	40.2%	35.9%	100.0%

*Educational Demographics*

105 (23.9%) participants were accounting majors, while 177 (40.2%) and 158 (35.9%) were business and liberal arts majors, respectively (see Table 11). Of the accounting majors, most (n = 75) held senior class standing. The majority of business majors were either sophomores (n = 70) or juniors (n = 55). The highest number of liberal arts majors were juniors and seniors (each equal at n = 46).

**Table 11. Class Standing by Major - Frequencies and Percentages**

**Major \* Class\_standing Crosstabulation**

			Class_standing				Total
			Freshman	Sophomore	Junior	Senior	
Major	Accounting	Count	5	13	12	75	105
		% of Total	1.1%	3.0%	2.7%	17.0%	23.9%
	Business	Count	13	70	55	39	177
		% of Total	3.0%	15.9%	12.5%	8.9%	40.2%
	Liberal arts	Count	30	36	46	46	158
		% of Total	6.8%	8.2%	10.5%	10.5%	35.9%
Total		Count	48	119	113	160	440
		% of Total	10.9%	27.0%	25.7%	36.4%	100.0%

More accounting (n = 74) and business (n = 133) respondents were captured from Oregon State University than from George Fox University (see Table 12). More liberal arts majors, however, were from George Fox University (n = 118).

**Table 12. Major by Institution – Frequencies and Percentages**

**Major \* Institution Crosstabulation**

			Institution		Total
			George Fox University	Oregon State University	
<b>Major</b>	<b>Accounting</b>	<b>Count</b>	31	74	105
		<b>% of Total</b>	7.0%	16.8%	23.9%
	<b>Business</b>	<b>Count</b>	44	133	177
		<b>% of Total</b>	10.0%	30.2%	40.2%
	<b>Liberal arts</b>	<b>Count</b>	118	40	158
		<b>% of Total</b>	26.8%	9.1%	35.9%
<b>Total</b>		<b>Count</b>	193	247	440
		<b>% of Total</b>	43.9%	56.1%	100.0%

The percentage of male and female accounting participants was nearly even, at 11.8% (n = 52) and 12.0% (n = 53), respectively (see Table 13). Gender was similar for business participants, at 83 females and 94 males. However, twice as many females (23.4%, n = 103) were liberal arts majors, as compared to males (12.5%, n = 55).

**Table 13. Major by Gender - Frequencies and Percentages**

**Major \* Gender Crosstabulation**

			Gender		Total
			Female	Male	
<b>Major</b>	<b>Accounting</b>	<b>Count</b>	53	52	105
		<b>% of Total</b>	12.0%	11.8%	23.9%
	<b>Business</b>	<b>Count</b>	83	94	177
		<b>% of Total</b>	18.9%	21.4%	40.2%
	<b>Liberal arts</b>	<b>Count</b>	103	55	158
		<b>% of Total</b>	23.4%	12.5%	35.9%
<b>Total</b>		<b>Count</b>	239	201	440
		<b>% of Total</b>	54.3%	45.7%	100.0%

### *Profile Summary*

While more participants were females (239, 54.3%) than males (201, 45.7%), both were well represented. Most participants were domestic students (377, 85.7%) majoring either in accounting (84, 19.1%), business (141, 32.0%) or liberal arts (152, 34.5%). Class standing was dispersed, with seniors reported as the largest group (160, 36.4%). Finally, 63.6% of the participants reported GPA of 2.7 to 3.6.

### Descriptive Analysis of Trait Skepticism and Personal Values

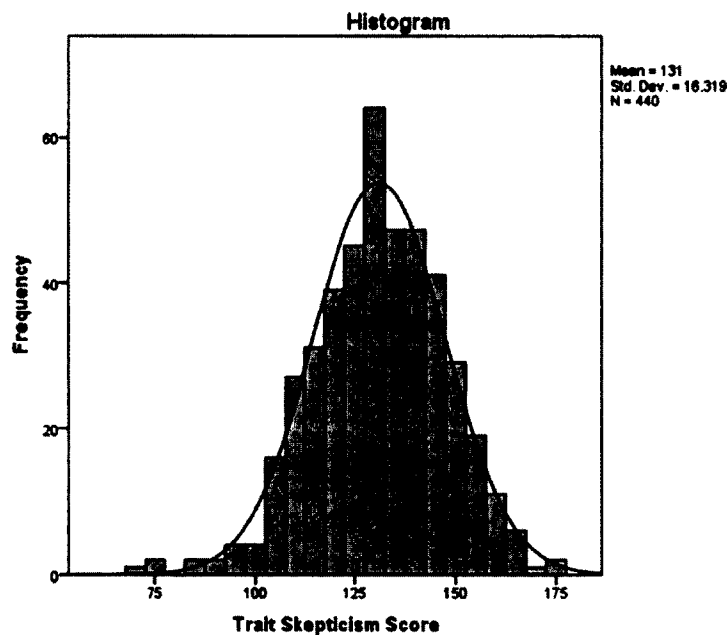
The first part of this section describes the responses of the Hurtt trait skepticism scale. The second part describes the responses to the Schwartz personal values survey.

#### *Trait skepticism*

Trait skepticism is defined as a relatively stable and enduring multidimensional psychological trait of an individual. The trait skepticism instrument used in this study was created by Hurtt (2010). It consisted of 30 statements. Responses were given on a scale ranging from “Strongly Disagree” (1) to “Strongly Agree” (6). Items 1, 10, 11, 16, 17, 19, 25, and 26 are reverse scored when generating the trait skepticism composite score (Subtract the score from 7 and use the reversed number in summing the total score). See Appendix F for individual statement responses means and standard deviation.

The mean score for the trait skepticism scale was 131 (n = 440 respondents). This is consistent with findings from previous research employing the Hurtt scale. The item with the highest average on the trait skepticism scale, after adjusting for reverse coding, was number 8 “Discovering new information is fun” (4.98). On the other hand, the lowest average was item 19 “Most often I agree with what the others in my group think” (3.48).

A visual inspection of this histogram indicates that the trait skepticism score is approximately normally distributed. Furthermore, skewness for the trait skepticism scale was  $-.291$  with a standard error of skewness of  $.116$ . This implies that the distribution of composite trait skepticism scores is relatively normal and permits the use of ANOVA to identify specific variance between groups (see Figure 1). If skewness is within the guideline of  $+1.00$  through  $-1.00$  then the data are considered to be normally distributed (Hair, Black, Babin, & Anderson, 2009). Finally, a Kolmogorov-Smirnov test was performed showing that the trait skepticism score is relatively normal ( $p = .200$ ).



**Figure 1. Skewness for Trait Skepticism Composite**

*Personal values*

Personal values represent malleable beliefs about what ought to be and guide personal judgments about appropriate behavior, but do not vary based on the situation (in other words, they are not attitudes) (Parks & Guay, 2009). This study used the Schwartz Values Survey to measure personal values among respondents (Schwartz, 1992). It has



57 statements scored on a 9-point scale as to how important each value is as a guiding principle in that individual's life, the range from "Opposed to my values" (-1) to "of supreme importance" (7) with the higher score indicating greater importance of the value. Responses to the survey items are combined into 10 value sets: Conformity, Tradition, Benevolence, Universalism, Self-Direction, Stimulation, Hedonism, Achievement, Power, and Security. This researcher followed the coding and data transformation guidelines recommended by Schwartz in the survey user manual (2009). This includes centering individual mean scores on all items in order to correct for any individual differences in scale use. See Appendix F for personal value set means (not centered) and standard deviation.

The personal value set with the highest average mean was Benevolence (5.349). Benevolence was the highest ranked personal value irrespective of institution. This means respondents believed the items comprising Benevolence were relatively more important than the other values. Schwartz defines Benevolence as voluntary concern for others' welfare (2012). The personal value set with the lowest average mean was Power (2.781), also irrespective of institution, indicating that respondents believed Power was relatively less important than other values. Power relates to an individual's desire to control or dominate people and resources and is connected to social status and prestige (Schwartz, 2012).

A visual inspection of each personal value shows that the data is approximately normally distributed. Skewness for personal values ranged from -.970 (std. error = .116) for Benevolence to .332 (std. error = .116) for Power. Skewness for all personal value sets is listed in Table 14. As noted previously, if skewness is within the guideline of

+1.00 through -1.00 then the data are considered to be normally distributed (Hair et al., 2009). Kolmogorov-Smirnov tests were conducted for each value set. Tradition, Universalism, and Security were approximately normal ( $p > .05$ ). The seven other personal values were not normally distributed ( $p < .05$ ). The tests for normality showed mixed results. Therefore, both parametric (t-tests) and non-parametric tests were performed. See Appendix G for histograms for each value set.

**Table 14. Skewness for personal value sets**

	N		Mean	Std. Deviation	Skewness	Std. Error of Skewness
	Valid	Missing				
Conformity	440	0	4.706	1.2446	-.436	.116
Tradition	440	0	3.979	1.3798	-.128	.116
Benevolence	440	0	5.349	1.1121	-.970	.116
Universalism	440	0	4.295	1.2583	-.195	.116
Self-Direction	440	0	4.907	1.1325	-.542	.116
Stimulation	440	0	4.074	1.6326	-.455	.116
Hedonism	440	0	4.284	1.5917	-.458	.116
Achievement	440	0	4.915	1.2076	-.591	.116
Power	440	0	2.781	1.6481	.332	.116
Security	440	0	4.310	1.2083	-.331	.116

### Research Questions and Hypotheses

The problem statement is addressed by the following research questions:

1. Is there a difference between the level of trait professional skepticism in students' demographic characteristics (gender, GPA, class standing, age)?
2. Is there a difference between the level of trait professional skepticism in students and major choice (accounting majors, non-accounting business majors, and liberal arts majors)?
3. Is there a difference between the level of trait professional skepticism in students and personal values?

The following section describes the statistical tests and results for each research question and corresponding hypotheses.

### Research Question 1

1. Is there a difference between the level of trait professional skepticism in students' demographic characteristics (gender, GPA, class standing, age)?

To test the first research question, individual composite scores of trait skepticism (TS) were determined. Tests of differences in mean composite TS scores were conducted across four demographic variables: gender, GPA, class standing, and age. ANOVAs were used for all variables except gender, which only had two groups, and as a result an independent t-test was used.

#### *Gender*

The mean composite TS score for females was 131.96 (n = 239) and 129.86 (n = 201) for males. Levene's test for equality of variances indicated that variances were unequal (see Table 15). As a result, the t-test statistic was selected with equal variances not assumed. The results indicate that TS is not significantly affected by gender as  $t(388) = 1.326, p = .186$ . Therefore the first hypothesis is supported with respect to gender, consistent with prior research findings.

**Table 15. Gender Independent T-Test**

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
Trait Skepticism Score	Equal variances assumed	3.850	.050	1.347	438	.179	2.102	1.560	-.964	5.169
	Equal variances not assumed			1.326	388.200	.186	2.102	1.566	-1.016	5.221

*GPA*

Composite scores for TS and self-reported GPA data were obtained. ANOVA was conducted to identify any differences among groups. There was a significant difference by composite TS score and GPA as  $F(2, 437) = 9.841, p = .000$ . The Tukey HSD post hoc test was conducted to determine which GPA categories were significantly different (see Table 16). Results revealed that the GPA category of 3.7 to 4.0 was significantly different from all other categories.

**Table 16. Tukey HSD Post Hoc among composite TS and GPA**

**Multiple Comparisons**

Dependent Variable: Trait Skepticism Score  
Tukey HSD

(i) GPA	(j) GPA	Mean Difference (i-j)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
3.7 to 4.0	2.7 to 3.6	6.651	1.707	.000	2.64	10.67
	1.7 to 2.6	10.797*	3.162	.002	3.36	18.23
2.7 to 3.6	3.7 to 4.0	-6.651	1.707	.000	-10.67	-2.64
	1.7 to 2.6	4.146	2.986	.348	-2.88	11.17
1.7 to 2.6	3.7 to 4.0	-10.797*	3.162	.002	-18.23	-3.36
	2.7 to 3.6	-4.146	2.986	.348	-11.17	2.88

\*. The mean difference is significant at the 0.05 level.

*Class standing*

Composite scores for TS and self-reported class standing data were obtained. ANOVA was conducted to identify any differences among groups. There was a significant difference by composite TS score and class standing as  $F(3, 436) = 3.106, p = .026$ . The Tukey HSD post hoc test was conducted to determine which class standing categories were significantly different (see Table 17). Results revealed that the mean composite TS score was significantly different among sophomores and seniors.

**Table 17. Tukey HSD Post Hoc among composite TS and Class Standing**

**Multiple Comparisons**

Dependent Variable: Trait Skepticism Score  
 Tukey HSD

(I) Class standing	(J) Class standing	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Freshman	Sophomore	3.748	2.771	.530	-3.40	10.89
	Junior	-1.124	2.792	.978	-8.32	6.08
	Senior	-1.988	2.667	.879	-8.86	4.89
Sophomore	Freshman	-3.748	2.771	.530	-10.89	3.40
	Junior	-4.872	2.128	.102	-10.36	.62
	Senior	-5.735*	1.961	.019	-10.79	-.68
Junior	Freshman	1.124	2.792	.978	-6.08	6.32
	Sophomore	4.872	2.128	.102	-.62	10.36
	Senior	-.864	1.991	.973	-6.00	4.27
Senior	Freshman	1.988	2.667	.879	-4.89	8.86
	Sophomore	5.735*	1.961	.019	.68	10.79
	Junior	.864	1.991	.973	-4.27	6.00

\*. The mean difference is significant at the 0.05 level.

*Age*

Composite scores for TS and age data were obtained. ANOVA was conducted to identify any differences among groups. There was a significant difference by composite TS score and age as  $F(2, 437) = 5.327, p = .005$ . The Tukey HSD post hoc test was conducted to determine which age categories were significantly different (see Table 18). Results revealed that the age category of 18 to 22 was significantly different from the Over 27 category.

**Table 18. Tukey HSD Post Hoc among composite TS and Age**

**Multiple Comparisons**

Dependent Variable: Trait Skepticism Score  
Tukey HSD

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18-22	23-27	-1.084	2.143	.869	-6.12	3.96
	Over 27	-10.910*	3.347	.003	-18.78	-3.04
23-27	18-22	1.084	2.143	.869	-3.96	6.12
	Over 27	-9.826*	3.780	.026	-18.72	-.94
Over 27	18-22	10.910*	3.347	.003	3.04	18.78
	23-27	9.826*	3.780	.026	.94	18.72

\*. The mean difference is significant at the 0.05 level.

In sum, the first null hypothesis was not supported. While gender does not significantly affect an individual’s level of TS, other demographic variables such as GPA, class standing, and age do appear to have a significant influence on the level of TS.

### Research Question 2

2. Is there a difference between the level of trait professional skepticism in students and major choice (accounting majors, non-accounting business majors, and liberal arts majors)?

To test the second research question, composite TS scores were used to separate respondents into two groups: high trait skeptics and low trait skeptics. Participants were split along the median composite TS score of (scale of 30 – 180; mean = 131). The difference between composite TS means of the two groups was significant  $t(438) = -26.669, p = .000$ . The number of subjects in each group was also roughly balanced (high TS  $n = 215$ , low TS  $n = 225$ ). In addition, the use of the median for splitting participants by level of TS is consistent with prior research designs (Hurtt et al., 2008; Popova, 2013).

A crosstabulation table was created to examine high TS and low TS by major type (see Table 19). The highest count of participants designated low TS occurred in Business

(n = 103) while the highest count of participants designated high TS occurred in Liberal Arts (n = 92). A Chi-Square test of differences was conducted. The results show that the frequency of major type by level of TS was significantly different than the expected frequency as  $\chi^2(2, 440) = 9.274, p = .010$  (see Table 20). Therefore the null hypothesis is not supported because there is an association between level of TS and major type.

**Table 19. Crosstabulation among level of TS and major type**

**Major \* Trait Skepticism Score (Binned) Crosstabulation**

		Trait Skepticism Score (Binned)		Total	
		Less skeptical	More skeptical		
Major	Accounting	Count	56	49	105
		% within Major	53.3%	46.7%	100.0%
		% within Trait Skepticism Score (Binned)	24.9%	22.8%	23.9%
		% of Total	12.7%	11.1%	23.9%
	Business	Count	103	74	177
		% within Major	58.2%	41.8%	100.0%
		% within Trait Skepticism Score (Binned)	45.8%	34.4%	40.2%
		% of Total	23.4%	16.8%	40.2%
	Liberal arts	Count	66	92	158
		% within Major	41.8%	58.2%	100.0%
		% within Trait Skepticism Score (Binned)	29.3%	42.8%	35.9%
		% of Total	15.0%	20.9%	35.9%
Total	Count	225	215	440	
	% within Major	51.1%	48.9%	100.0%	
	% within Trait Skepticism Score (Binned)	100.0%	100.0%	100.0%	
	% of Total	51.1%	48.9%	100.0%	

**Table 20. Chi-Square Test among level of TS and major**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.274 <sup>a</sup>	2	.010
Likelihood Ratio	9.311	2	.010
Linear-by-Linear Association	4.551	1	.033
N of Valid Cases	440		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 51.31.

### Research Question 3

3. Is there a difference between the level of trait professional skepticism in students and personal values?

To test the third research question, the same high TS and low TS groupings were utilized. In addition, the individual mean person value sets were centered in order to correct for any individual differences in personal value scale use (Schwartz, 2009). Each individual mean centered value set and TS grouping was tested for differences with an independent samples t-test (see Table 21). The level of TS was significantly different across all mean personal value sets at  $p < .05$  except for Hedonism and Power. The Power personal value set was significant at  $p < .10$ . As a result, the third null hypothesis is not supported as there appears to be different personal values among high and low trait skepticism respondents.

Tests of normality were mixed for each of the personal value sets. As a result, non-parametric tests were conducted in addition to t-tests. Using the Wilcoxon-Mann-Whitney test, the level of TS was significantly different across all personal value sets at  $p < .05$  except for Hedonism, Tradition, and Security. The Tradition and Security personal value sets were significant at  $p < .10$ . These results provide additional evidence that the third null hypothesis is not supported.



**Table 21. Independent t-test between level of TS and personal values sets**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Conformity - center value	Equal variances assumed	1.078	.300	-3.197	438	.001	-.3753	.1174	-.6061	-.1446
	Equal variances not assumed			-3.192	433.376	.002	-.3753	.1176	-.6064	-.1442
Tradition - center value	Equal variances assumed	.933	.335	-.969	438	.050	-.2583	.1312	-.5160	-.0005
	Equal variances not assumed			-.967	434.771	.050	-.2583	.1313	-.5163	-.0002
Benevolence - center value	Equal variances assumed	3.670	.056	-5.278	438	.000	-.5434	.1030	-.7458	-.3411
	Equal variances not assumed			-5.296	432.990	.000	-.5434	.1026	-.7451	-.3418
Universalism - center value	Equal variances assumed	.046	.831	-3.827	438	.000	-.4537	.1186	-.6868	-.2207
	Equal variances not assumed			-3.828	437.411	.000	-.4537	.1185	-.6867	-.2208
Self-Direction - center value	Equal variances assumed	1.211	.272	-5.528	438	.000	-.5779	.1045	-.7834	-.3724
	Equal variances not assumed			-5.545	434.220	.000	-.5779	.1042	-.7827	-.3731
Stimulation - center value	Equal variances assumed	.754	.386	-2.193	438	.029	-.3393	.1547	-.6433	-.0352
	Equal variances not assumed			-2.189	431.786	.029	-.3393	.1550	-.6439	-.0347
Traditionism - center value	Equal variances assumed	9.749	.002	.480	438	.631	.0730	.1521	-.2260	.3720
	Equal variances not assumed			.478	414.752	.633	.0730	.1528	-.2273	.3733
Achievement - center value	Equal variances assumed	1.482	.224	-4.734	438	.000	-.5334	.1127	-.7548	-.3119
	Equal variances not assumed			-4.742	437.672	.000	-.5334	.1125	-.7545	-.3123
Power - center value	Equal variances assumed	.795	.373	-.842	438	.053	.3044	.1567	-.0036	.6124
	Equal variances not assumed			-.839	432.056	.053	.3044	.1570	-.0042	.6128
Security - center value	Equal variances assumed	.173	.678	-2.208	438	.028	-.2533	.1147	-.4788	-.0278
	Equal variances not assumed			-2.209	437.767	.028	-.2533	.1147	-.4787	-.0280

**Supplemental Analyses**

*RQ1: Differences in composite TS by GPA, Class standing, Age*

Composite TS means varied among GPA categories. For GPA of 3.7 to 4.0, the mean composite TS was 136.02 (n = 128), while the mean composite TS of GPA of 2.7 to 3.6 and 1.7 to 2.6 were 129.36 and 125.22 (n = 280 and n = 32), respectively. The data suggests that higher levels of GPA lead to higher levels of TS across all categories.

Composite TS means also varied across class standing (see Table 22). Although the only statistically significant difference detected was between sophomores and seniors, the increases of mean composite TS, except for freshman, suggests that trait skepticism

may change over time, particularly within college students. The anomaly between mean composite TS of freshman and sophomore may be a result of a low n size for the freshman category.

**Table 22. Mean Composite TS by Class standing category**

**Descriptives**

Trait Skepticism Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Freshman	48	131.00	14.979	2.162	126.65	135.35	70	160
Sophomore	119	127.25	15.721	1.441	124.40	130.11	92	161
Junior	113	132.12	15.285	1.438	129.27	134.97	84	174
Senior	160	132.99	17.482	1.382	130.26	135.72	76	173
Total	440	131.00	16.319	.778	129.47	132.53	70	174

The variation in means across time is further supported by the trend in among age categories (see Table 23). The Over 27 category was statistically different from both the 18-22 and 23-27 categories, with each respective older category showing an increase in the mean composite TS. However, a small n size in the Over 27 may be influencing the results.

**Table 23. Mean Composite TS by Age category**

**Descriptives**

Trait Skepticism Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-22	347	130.21	15.797	.848	128.54	131.88	70	173
23-27	68	131.29	17.314	2.100	127.10	135.48	76	162
Over 27	25	141.12	17.922	3.584	133.72	148.52	107	174
Total	440	131.00	16.319	.778	129.47	132.53	70	174

*RQ2: Additional differences between composite TS and major type*

The relationship between major type and level of TS was investigated further by conducting an ANOVA. Major type and composite TS score (not grouped) were used to identify differences across majors. The mean composite TS was highest for Liberal Arts majors at 134.72 (n = 158). See Table 24 for a comparison of means.

**Table 24. Mean Composite TS by Major type**

**Descriptives**

Trait Skepticism Score

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Accounting	105	129.85	17.375	1.696	126.49	133.21	70	170
Business	177	128.36	15.209	1.143	126.11	130.62	84	167
Liberal arts	158	134.72	16.210	1.290	132.17	137.26	76	174
Total	440	131.00	16.319	.778	129.47	132.53	70	174

The results of the ANOVA were significant as  $F(2, 437) = 6.847, p = .001$ . The Tukey HSD post hoc test was conducted to determine which major categories were significantly different (see Table 25). Results revealed that the Accounting was significantly different from the Liberal Arts major. In addition, Liberal Arts was also significantly different from the Business major. Although Accounting participants had a higher level of TS than Business majors, the data suggests that the most skeptical respondents reside in the Liberal Arts major.

**Table 25. Tukey HSD Post Hoc among composite TS and Major type**

**Multiple Comparisons**

Dependent Variable: Trait Skepticism Score  
Tukey HSD

(I) Major	(J) Major	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Accounting	Business	1.486	1.984	.734	-3.18	6.15
	Liberal arts	-4.868*	2.028	.044	-9.64	-.10
Business	Accounting	-1.486	1.984	.734	-6.15	3.18
	Liberal arts	-6.354*	1.763	.001	-10.50	-2.21
Liberal arts	Accounting	4.868*	2.028	.044	.10	9.64
	Business	6.354*	1.763	.001	2.21	10.50

\*. The mean difference is significant at the 0.05 level.

*RQ3: Additional differences between level of TS and personal values*

Mean composite personal values were also generated for each high and low skeptic grouping (see Table 26). This allowed a direct comparison to the relative ranking of each value by level of composite TS. Aside from differences in means analyzed

earlier, there are three personal value sets which differ according to the relative rankings of the two groups. More skeptical respondents placed a higher importance on Self-Direction and Universalism, while a relatively lower importance was placed on Hedonism. This is consistent with the characteristics that would be expected from more skeptical individuals. For example, Schwartz (2012) identifies Self-Direction as independent thought and action, a value that shares similarities with Hurtt’s autonomy characteristic (2010). Therefore, it is not surprising to see more skeptical participants placing higher importance on the Self-Direction personal value set. Conversely, Hedonism is the pleasure or sensuous gratification for oneself (Schwartz, 2012), which could occasionally conflict with autonomy or suspense of judgment. The implication from ranking the personal value means is that high TS individuals place more relative emphasis on specific personal values than do low TS individuals. This provides further evidence that the null hypothesis is not supported.

**Table 26. Mean Composite Personal Values by level of composite TS**

	<u>More skeptical</u>		<u>Less skeptical</u>	
1	Benevolence	5.627	Benevolence	5.084
2	<b>Self-Direction</b>	<b>5.203</b>	Achievement	4.656
3	Achievement	5.186	<b>Self-Direction</b>	<b>4.625</b>
4	Conformity	4.899	Conformity	4.523
5	<b>Universalism</b>	<b>4.528</b>	<b>Hedonism</b>	<b>4.317</b>
6	Security	4.440	Security	4.187
7	<b>Hedonism</b>	<b>4.250</b>	<b>Universalism</b>	<b>4.072</b>
8	Stimulation	4.246	Stimulation	3.909
9	Tradition	4.111	Tradition	3.852
10	Power	2.627	Power	2.929

#### Summary

There was a significant difference between the level of composite trait skepticism and GPA, where a higher level of GPA corresponded to a higher level of TS (RQ1).

Class standing also showed a difference by level of TS, though the difference was isolated between the sophomore and senior classes (RQ1). Likewise, there was a significant difference between age category and level of TS, with higher levels of TS corresponding to older age categories (RQ1). No significant difference was detected between the level of TS and gender (RQ1). A Chi-square test showed that high skeptic individuals selected different majors than low skeptic individuals (RQ2). An ANOVA indicated that the composite TS means for Liberal Arts majors were higher and significantly different than both Accounting and Business majors (RQ2). Finally, individual t-tests showed that high TS and low TS individuals place different importance on personal values (RQ3). Additional comparison of personal value means by level of TS supported these findings (RQ3).

## CHAPTER 5 – SUMMARY, RECOMMENDATIONS, AND CONCLUSIONS

The value of an audit is in part based on the degree of professional skepticism exercised by an auditor. Indeed, the importance of professional skepticism has been stressed by regulators and practitioners since the earliest stages of the auditing profession. Recent scrutiny of the audit profession, however, indicates that auditors occasionally lack the ability to exercise an appropriate level of professional skepticism (Beasley, Carcello, Hermanson, & Neal, 2013; CAQ, 2010; PCAOB, 2008). Unfortunately these lapses in professional skepticism have also been linked to the majority of the Securities and Exchange Commission (SEC) enforcement actions (Beasley et al., 2001). The concern over the issue suggests a need for greater research and understanding of the determinants and dimensionality of professional skepticism. The concept itself remains poorly defined and underexplored, in part due to the difficulty of measuring professional skepticism and the broad nature of the concept (Hurt et al., 2012; Hurt, 2010; Nelson, 2009). There is a need to clarify where individual differences exist between those that exercise an appropriate level of skepticism and those that do not.

Nelson (2009) proposes a seminal model of professional skepticism which suggests audit evidence, when combined with various determinants of professional skepticism, produces judgments, and ultimately actions, that demonstrate professional skepticism. This research examined the individual trait component of Nelson's model as operationalized by Hurt's trait skepticism scale (2010). In her research Hurt (2010) distinguishes trait skepticism from state skepticism by noting that the former represents a relatively stable and enduring aspect of an individual (e.g., questioning mind, suspension of judgment, search for knowledge, interpersonal understanding, self-esteem, and

autonomy) while the latter is a temporary condition prone to changes in exogenous variables. Overall the research shows that individuals who exercise higher levels of trait skepticism tend to demonstrate more skeptical judgment (Hurt et al., 2012).

Understanding antecedents to skeptical behavior is important because the ability to measure individual differences in trait skepticism improves the precision of predictive models of skeptical behavior. Yet there is a lack of research investigating how individual characteristics (such as demographics, career path, or personal values) influence trait skepticism. In addition, the trait skepticism research that does exist largely focuses on audit professionals employed in public accounting. This suggests that non-accounting individuals and students have been underutilized, two essential groups for obtaining a robust understanding of trait skepticism. Therefore this study utilized the conceptual model of professional skepticism and administered the Hurt trait skepticism scale for exploring differences in student characteristics.

Personal values, unlike attitudes, represent guiding principles that an individual uses in their lives. In other words, “values relate to what we believe we ought to do, while personality relates to what we naturally tend to do” (Parks & Guay, 2009, p. 677). In this sense values may reinforce specific behaviors, especially when personality traits and values align. As a result, there may be an incremental benefit associated with combining the two constructs in behavioral research. Very little research has examined the effect of personal values on behavior in accounting. To date there does not appear to be any research examining differences in personal values between high trait skeptics and low trait skeptics. As a result, this research also introduced a new antecedent, personal values, into a revised model of professional skepticism.

The gaps in the literature are clear. This research was a direct response to improve our understanding of trait skepticism (Hurtt et al., 2012, 2010; Nelson, 2009) and to integrate personality constructs and personal values in behavior research (Olver & Mooradian, 2003; Parks & Guay, 2009). The primary objective of this study was to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. As a result, the primary goal is not to study the factors *causing* trait professional skepticism, but rather whether the *result* of skeptical personality trait is associated with different combinations of specific characteristics among a set of students. By studying antecedents of trait skepticism, this research helps the continuing debate on how auditors improve their level of professional skepticism.

This study focused on undergraduate students from two universities in Oregon within three majors: accounting, non-accounting business (e.g. finance, marketing, management, global business, entrepreneurship) and liberal arts (e.g. English, history, art, biology, chemistry, math, etc.). Gatekeepers were identified from each university and emails containing a cover letter and questionnaire web link were sent to either the gatekeepers or directly to the students. SurveyMonkey was used to send the questionnaires and collect the responses for the instrument. Reminder emails were sent a total of three times, each spaced about one week apart. There were 440 participants.

### Findings

Three research questions were developed to address the purpose of this study. The research questions and the findings are presented here.

RQ1: Is there a difference between the level of trait professional skepticism in students' demographic characteristics (gender, GPA, class standing, age)? An



independent t-test and ANOVAs were conducted to analyze demographic information. This study found that gender does not significantly affect an individual's level of TS. This is consistent with prior research (Hurtt, 2010). However, other demographic variables such as GPA ( $F = 9.841, p = .000$ ), class standing ( $F = 3.106, p = .026$ ), and age ( $F = 5.327, p = .005$ ) do have a significant influence on the level of TS. Post hoc testing showed that higher levels of TS are associated with higher levels of GPA. In addition, higher levels of TS are associated with higher levels of age or class standing. This is an unexpected result since trait skepticism is currently construed as a relatively stable personality construct that should not vary with short periods of time or other demographics. This study showed some instability within the trait skepticism scale.

RQ2: Is there a difference between the level of trait professional skepticism in students and major choice (accounting majors, non-accounting business majors, and liberal arts majors)? A Chi-Square test using a crosstabulation table was created to determine differences between high TS and low TS by major type. There was a significant difference between high TS and low TS by major type ( $\chi^2 = 9.274, p = .010$ ). This relationship was investigated further by conducting an ANOVA using major type and composite TS score (not grouped) to identify differences. The results of the ANOVA were significant ( $F = 6.847, p = .001$ ). Post hoc testing revealed that liberal arts majors were significantly different from accounting and non-accounting business majors. Although accounting participants had higher mean TS than business majors, the data suggests that the most skeptical respondents reside in the liberal arts major. This finding was not unexpected since major choice has often been used in the accounting literature and other domains to distinguish differences in students. A small sample of studies using

major choice include: moral reasoning (Jeffrey, 1993; Lan et al., 2007; McCabe et al., 1991), personal values (Baker, 1976; Eaton & Giacominio, 2000; Giacominio & Akers, 1998; Lan et al., 2007), generational differences (Giacominio et al., 2011), and personality (Andon et al., 2010; Pike, 2006).

RQ3: Is there a difference between the level of trait professional skepticism in students and personal values? Independent t-tests were conducted to identify differences between high and low TS among the 10 personal value sets. The results showed that high and low TS were significantly different for Benevolence ( $p = .000$ ), Conformity ( $p = .001$ ), Tradition ( $p = .050$ ), Universalism ( $p = .000$ ), Self-Direction ( $p = .000$ ), Stimulation ( $p = .029$ ), Achievement ( $p = .000$ ), and Security ( $p = .028$ ). Power was also significant at  $p < .10$ . Hedonism was the only personal value set that was not significantly different ( $p = .633$ ). These results were further corroborated by conducting non-parametric tests (Mann-Whitney U). In addition, the mean for each personal value set was ranked for both high and low TS. Three personal value sets differ according to the relative rankings of the two groups. More skeptical respondents placed a higher importance on Self-Direction and Universalism, while a relatively lower importance was placed on Hedonism. This is consistent with the characteristics that would be expected from more skeptical individuals. For example, Schwartz (2012) identifies Self-Direction as independent thought and action, a value that shares similarities with Hurtt's autonomy characteristic (2010). Therefore it is not surprising to see more skeptical participants placing higher importance on the Self-Direction personal value set. Conversely, Hedonism is the pleasure or sensuous gratification for oneself (Schwartz, 2012), which could occasionally conflict with autonomy or suspense of judgment. The implication

from ranking the personal value means is that high TS individuals place more relative emphasis on specific personal values than do low TS individuals. These findings are not unexpected since some researchers believe that individuals tend to prefer personal values that align with inherent personalities (Olver & Mooradian, 2003; Parks & Guay, 2009). The results suggest that high trait skeptics may hold different personal values constructs than low trait skeptics.

### Conclusions

The primary objective of this study was to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. The findings of this study confirm that differences in students do exist among these areas. There were significant results which showed that trait skepticism varies among student GPA, class standing, and age. The findings for class standing and age were surprising as it contradicts the current assumption that trait skepticism is a relatively stable psychological construct over time. As a result, trait skepticism may be more malleable than previously thought. The results may also be an indication of the degree and intensity of personal change occurring during a college student's tenure in university.

Even more interesting, the results showed differences in major choice between high trait skeptics and low trait skeptics. High skeptics generally preferred liberal arts majors, while low skeptics generally preferred business majors. Accounting majors fell between the two. This is an important result for two primary reasons. First, it helps locate where individuals with higher levels of trait skepticism chose to study. The results showed that a greater proportion of highly skeptical individuals are electing *not* to pursue accounting. Secondly, it underscores a need to identify an appropriate level of trait

skepticism for individuals pursuing an auditing career. This could lead to improved recruitment efforts of more skeptical individuals into the accounting major, and ultimately auditing field.

Lastly, a new antecedent to trait skepticism (personal values) was also shown to be a significant differentiator. Personal values play an important role between personality and behavior. This study showed that several personal value constructs were significantly different for high skeptics than low skeptics. This evidence suggests that personal values may be a useful characteristic for identifying high trait skeptics. The results also imply that those who are naturally more skeptical carry a different set of beliefs about what individuals “ought to do” than do those who are naturally less skeptical. These personal value constructs could be useful for the training of accounting students and auditors to be more skeptical by introducing and reinforcing beliefs associated with higher degrees of skepticism.

What do these results mean for researchers and practitioners? The findings are important to researchers in several ways. Prior to this study, little was known about the relationship of individual differences with trait skepticism. This study shows that the level of trait skepticism may change over time, contradicting previous assumptions about the enduring stability of trait skepticism. In addition, by using a student sample this study addressed an important gap in trait skepticism research. Student-based research enhances the ability to identify and improve professional skepticism prior to employment. Using students also improved the strength of trait skepticism analysis since exogenous variables from employment may obscure some results. Finally, this study introduced an important new antecedent, personal values, to trait skepticism.

Similarly, this study is important to the audit profession. Audit professionals continue to seek ways to enhance auditor skepticism. Some have suggested that trait skepticism might be useful as a selection tool (Nelson, 2009). The results of this study suggest that the combination of major choice, personal values, and trait skepticism are useful for distinguishing an individual's level of skepticism. One way practitioners can improve the degree of skepticism in the profession is by recruiting more skeptical people into both the study of accounting and the audit profession. By using the findings from this study, advisors and managers have a better profile of the skeptical individual and can therefore improve selection. Furthermore, auditors may be able to improve skepticism through emphasis of certain personal values, such as Self-Direction.

In sum, this study achieved the goal of determining whether the *result* of skeptical personality trait is associated with different combinations of specific characteristics among a set of students. By studying antecedents of trait skepticism, this research helped improve our understanding of professional skepticism and which particular individual differences are associated with high skeptic personalities.

#### Limitations

The study tested subjects from one Christian liberal arts institution and one state institution in Oregon. While Oregon may be representative of the Northwest region of the United States, the sample sizes for high and low trait skepticism may change if such tests were administered in a different locality. Additionally, personal values are constructs subject to various environmental factors and as such the relative importance of any specific personal value may change from region to region (although specific groupings of personal values have been shown to be stable across regions and cultures).

Therefore, the results may be limited to usefulness in a context of the Northwestern United States.

This research also tested a student population, most of which are without work experience in an accounting-related job. Although students share proximity to first-year working professionals, the proportion of high and low trait skeptics and level of high and low trait skepticism may change if such tests were administered to working professionals who have been employed for a number of years. Therefore, the results may be limited to usefulness in an early-career context.

There is also evidence that suggests that attitudes and values are prone to generational differences (Whitney Gibson, Greenwood, & Murphy, 2011). These generational differences may be an artifact in both trait skepticism and the personal values constructs used in this study, particularly as the study did not incorporate a time series element. Therefore, the results may be limited to usefulness in a context of single generation.

Finally, while the same questionnaire was used for all participants there were some variations in delivery method by the gatekeepers. As a result computing response rate was not possible. This limitation is relevant as the reader uses the findings in application.

## Future Research

Professional skepticism is an essential element of a quality external audit and its importance continues to be highlighted by researchers and practitioners (Beasley et al., 2013). Prior research, this study included, has primarily been isolated to a particular group or region. It would be helpful to understand whether the individual differences in the level of trait skepticism identified in this study are stable across different geographical regions and student groups. Therefore, further study is recommended on differences in trait skepticism and its antecedents. Additionally, the issue of generational differences in traits and values was not addressed in this study. Future research is suggested to determine whether differences are stable across broader cross-sections of student groups, regions, and time.

This study showed that the level of trait skepticism was significantly different by major type. Except for the accounting major, the business and liberal arts majors were broad categories. It would be helpful to understand which majors in particular had higher concentrations of more skeptical students. Future research is suggested to determine if specific business or liberal arts majors have more than normal frequencies of skeptical students. Discriminant analysis could also be employed to determine whether or not group prediction (high vs. low skepticism) is possible utilizing demographics, major type, and personal values. In addition, future research could incorporate other major types, such as majors in the professions like engineering or nursing. Since accounting is a professional field, comparisons across other professional majors might shed further light on trait skepticism. Further analysis could also include a comparison between quantitative and qualitative majors to determine if any differences in trait skepticism

exist. Another comparison could be made with between undergraduate accounting students and graduate students pursuing a master's of accounting or taxation. Finally, the results imply that trait skepticism may not be as stable as previously thought and therefore might be susceptible to different forms of teaching. It would be helpful to explore whether liberal arts education enhances trait skepticism. In addition, further research that clarifies the difference between critical thinking and trait skepticism would be beneficial.

A similar analysis would be helpful with respect to the relationship between trait skepticism and personal values. Future research could better determine the shape and texture of particular personal value constructs among high and low trait skeptics.

Ultimately differences in trait skepticism should lead to differences in actual skeptical behavior. Future research is necessary to determine the extent to which any particular combination of individual differences, trait skepticism, and personal values leads to more skeptical behavior. Such research could enhance the predictive value of trait skepticism on skeptical behavior.

### Summary

The primary objective of this study was to determine whether differences in students exist among the level of trait skepticism, major choice, and personal values. This study utilized independent t-tests, ANOVAs, and Chi-square tests to identify whether significant differences were present. The results showed that the level of trait skepticism is associated with different categories of GPA, class standing, and age. Furthermore, high trait skeptics tended to choose different majors than low trait skeptics, more skeptical students opting for liberal arts majors. The results also showed that high



and low trait skeptics placed different preferences among ten personal value sets. As a result, this study was able to show that skeptical personality trait is associated with different combinations of specific characteristics among a set of students. By studying antecedents of trait skepticism, this research helps the continuing debate on how auditors improve their level of professional skepticism. Practitioners may be able to improve hiring and selection using the individual differences identified in this study. Likewise, accounting educators can use these results to identify the type of student recruits that will best serve the profession.

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## APPENDIX A: SCHWARTZ VALUES QUESTIONNAIRE

## Schwartz Values Questionnaire

### INSTRUCTIONS

In this questionnaire you are to ask yourself: *"What values are important to ME as guiding principles in MY life, and what values are less important to me?"*

Your task is to rate how important each value is for you as a guiding principle in your life. Use the rating scale below:

- 1 – is for rating any values opposed to the principles that guide you.
- 0 – means the value is not at all important; it is not relevant as a guiding principle for you.
- 3 – means the value is important.
- 6 – means the value is very important.
- 7 – is for rating a value of supreme importance as a guiding principle in your life; ordinarily there are no more than two values.

The higher the number (0, 1, 2, 3, 4, 5, 6, 7), the more important the value is as a guiding principle in YOUR life.

In the following questions, select the number that indicates the importance of that value for YOU, personally. Try to distinguish as much as possible between the values by using all the numbers. You will, of course, need to use numbers more than once.

---

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:								
Opposed to my values -1	Not important 0	1	2	Important 3	4	5	Very important 6	Of supreme importance 7

Before you begin, read the values listed below. Choose the one that is of supreme importance to you and rate its importance. Next, choose the value that is opposed to your values and rate it -1. If there is no such value, choose the value least important to you and rate it 0 or 1. Then rate the rest of the values.

1. \_\_\_\_\_ EQUALITY (equal opportunity for all)
2. \_\_\_\_\_ INNER HARMONY (at peace with myself)
3. \_\_\_\_\_ SOCIAL POWER (control over others, dominance)
4. \_\_\_\_\_ PLEASURE (gratification of desires)
5. \_\_\_\_\_ FREEDOM (freedom of actions and thought)
6. \_\_\_\_\_ A SPIRITUAL LIFE (emphasis on spiritual not material matters)
7. \_\_\_\_\_ SENSE OF BELONGING (feeling that others care about me)
8. \_\_\_\_\_ SOCIAL ORDER (stability of society)
9. \_\_\_\_\_ AN EXCITING LIFE (stimulating experiences)
10. \_\_\_\_\_ MEANING IN LIFE (a purpose in life)
11. \_\_\_\_\_ POLITENESS (courtesy, good manners)
12. \_\_\_\_\_ WEALTH (material possessions, money)
13. \_\_\_\_\_ NATIONAL SECURITY (protection of my nation from enemies)
14. \_\_\_\_\_ SELF RESPECT (belief in one's own worth)
15. \_\_\_\_\_ RECIPROICATION OF FAVORS (avoidance of indebtedness)
16. \_\_\_\_\_ CREATIVITY (uniqueness, imagination)
17. \_\_\_\_\_ A WORLD AT PEACE (free of war and conflict)
18. \_\_\_\_\_ RESPECT FOR TRADITION (preservation of time-honored customs)
19. \_\_\_\_\_ MATURE LOVE (deep emotional and spiritual intimacy)
20. \_\_\_\_\_ SELF-DISCIPLINE (self-restraint, resistance to temptation)
21. \_\_\_\_\_ PRIVACY (the right to have a private sphere)
22. \_\_\_\_\_ FAMILY SECURITY (safety for loved ones)
23. \_\_\_\_\_ SOCIAL RECOGNITION (respect, approval by others)
24. \_\_\_\_\_ UNITY WITH NATURE (fitting into nature)
25. \_\_\_\_\_ A VARIED LIFE (filled with challenge, novelty and change)
26. \_\_\_\_\_ WISDOM (a mature understanding of life)
27. \_\_\_\_\_ AUTHORITY (the right to lead or command)
28. \_\_\_\_\_ TRUE FRIENDSHIP (close, supportive friends)
29. \_\_\_\_\_ A WORLD OF BEAUTY (beauty of nature and the arts)
30. \_\_\_\_\_ SOCIAL JUSTICE (correcting injustice, care for the weak)
31. \_\_\_\_\_ INDEPENDENT (self-reliant, self-sufficient)

32. \_\_\_\_ MODERATE (avoiding extremes of feeling and action)
33. \_\_\_\_ LOYAL (faithful to my friends, group)
34. \_\_\_\_ AMBITIOUS (hard-working, aspiring)
35. \_\_\_\_ BROADMINDED (tolerant of different ideas and beliefs)
36. \_\_\_\_ HUMBLE (modest, self-effacing)
37. \_\_\_\_ DARING (seeking adventure, risk)
38. \_\_\_\_ PROTECTING THE ENVIRONMENT (preserving nature)
39. \_\_\_\_ INFLUENTIAL (having an impact on people and events)
40. \_\_\_\_ HONORING OF PARENTS AND ELDERS (showing respect)
41. \_\_\_\_ CHOOSING OWN GOALS (selecting own purposes)
42. \_\_\_\_ HEALTHY (not being sick physically or mentally)
43. \_\_\_\_ CAPABLE (competent, effective, efficient)
44. \_\_\_\_ ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)
45. \_\_\_\_ HONEST (genuine, sincere)
46. \_\_\_\_ PRESERVING MY PUBLIC IMAGE (protecting my "face")
47. \_\_\_\_ OBEDIENT (dutiful, meeting obligations)
48. \_\_\_\_ INTELLIGENT (logical, thinking)
49. \_\_\_\_ HELPFUL (working for the welfare of others)
50. \_\_\_\_ ENJOYING LIFE (enjoying food, sex, leisure, etc.)
51. \_\_\_\_ DEVOUT (holding to religious faith and belief)
52. \_\_\_\_ RESPONSIBLE (dependable, reliable)
53. \_\_\_\_ CURIOUS (interested in everything, exploring)
54. \_\_\_\_ FORGIVING (willing to pardon others)
55. \_\_\_\_ SUCCESSFUL (achieving goals)
56. \_\_\_\_ CLEAN (neat, tidy)
57. \_\_\_\_ SELF-INDULGENT (doing pleasant things)
58. \_\_\_\_ OBSERVING SOCIAL NORMS (to maintain "face")

**APPENDIX B: HURTT PROFESSIONAL SKEPTICISM SCALE**

### Skepticism Scale and Instructions for Administration

Statements that people use to describe themselves are given below. Please circle the response that indicates how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement

	Strongly Disagree					Strongly Agree
	1	2	3	4	5	6
I often accept other people's explanations without further thought	1	2	3	4	5	6
I feel good about myself	1	2	3	4	5	6
I wait to decide on issues until I can get more information	1	2	3	4	5	6
The prospect of learning excites me	1	2	3	4	5	6
I am interested in what causes people to behave the way that they do	1	2	3	4	5	6
I am confident of my abilities	1	2	3	4	5	6
I often reject statements unless I have proof that they are true	1	2	3	4	5	6
Discovering new information is fun	1	2	3	4	5	6
I take my time when making decisions	1	2	3	4	5	6
I tend to immediately accept what other people tell me	1	2	3	4	5	6
Other people's behavior does not interest me	1	2	3	4	5	6
I am self-assured	1	2	3	4	5	6
My friends tell me that I usually question things that I see or hear	1	2	3	4	5	6
I like to understand the reason for other people's behavior	1	2	3	4	5	6
I think that learning is exciting	1	2	3	4	5	6
I usually accept things I see, read, or hear at face value	1	2	3	4	5	6
I do not feel sure of myself	1	2	3	4	5	6
I usually notice inconsistencies in explanations	1	2	3	4	5	6
Most often I agree with what the others in my group think	1	2	3	4	5	6
I dislike having to make decisions quickly	1	2	3	4	5	6
I have confidence in myself	1	2	3	4	5	6
I do not like to decide until I've looked at all of the readily available information	1	2	3	4	5	6
I like searching for knowledge	1	2	3	4	5	6
I frequently question things that I see or hear	1	2	3	4	5	6
It is easy for other people to convince me	1	2	3	4	5	6
I seldom consider why people behave in a certain way	1	2	3	4	5	6
I like to ensure that I've considered most available information before making a decision	1	2	3	4	5	6
I enjoy trying to determine if what I read or hear is true	1	2	3	4	5	6
I relish learning	1	2	3	4	5	6
The actions people take and the reasons for those actions are fascinating	1	2	3	4	5	6

## APPENDIX C: QUESTIONNAIRE



## Introduction

Thank you participating in this survey on student skepticism. This is a research project being conducted for the completion of a dissertation by Seth Sikkema, a doctoral student at Anderson University. You are invited to participate in this research project because you are an undergraduate student in a 4-year college or university. I do not know of any risks to you if you decide to participate in this survey.

The title of this study is "Professional skepticism of students: A descriptive study of differences in trait skepticism and personal values." The purpose of this research is to assess links between various individual characteristics, including major choice and personal values, and the level of inherent skepticism among a range of students.

The procedure involves filling an online survey that will take approximately 30 minutes. The survey contains four sections. In the first section I will ask you questions about yourself that will help me measure your degree of skepticism. Next I will ask you questions about yourself and your student experiences. Then I will ask you questions about personal values that you use as guiding principles in your life. In the final section you will need to respond to a short vignette. You will need to respond to each question before you can move on to the next screen.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

Your responses will be anonymous and I do not collect identifying information such as your name, e-mail address, or IP address. I will do my best to keep your information confidential. All data is stored in a password protected electronic format. The results of this study will be included in my doctoral dissertation and any future scholarly publications.

I do not know if you will benefit from being in this study and you will not be paid for being in this research study. However, through your participation and sharing, you will help us to describe differences in skepticism and personal values among students.

If you have any questions about the research study, please contact Seth Sikkema at 503-554-2813 or [ssikkema@georgefox.edu](mailto:ssikkema@georgefox.edu). This research has been reviewed according to Anderson University IRB procedures for research involving human subjects.

Thank you very much for agreeing to participate!

**\* 1. ELECTRONIC CONSENT: Please select your choice below.**

**Clicking on the "agree" button below indicates that:**

- you have read the above information
- you voluntarily agree to participate
- you are at least 18 years of age

**If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.**

- Agree
- Disagree

## Section 1 - Skepticism

This section contains 30 questions and should take approximately 10 minutes to complete.

Statements that people use to describe themselves are given below. Please choose the response that indicates how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement.

**\*2. I often accept other people's explanations without further thought.**

Strongly Disagree

Strongly Agree

**\*3. I feel good about myself.**

Strongly Disagree

Strongly Agree

**\*4. I wait to decide on issues until I can get more information.**

Strongly Disagree

Strongly Agree

**\*5. The prospect of learning excites me.**

Strongly Disagree

Strongly Agree

**\*6. I am interested in what causes people to behave in the way that they do.**

Strongly Disagree

Strongly Agree

**\*7. I am confident of my abilities.**

Strongly Disagree

Strongly Agree

**\*8. I often reject statements unless I have proof that they are true.**

Strongly Disagree

Strongly Agree

**\*9. Discovering new information is fun.**

Strongly Disagree

Strongly Agree

**\*10. I take my time when making decisions.**

Strongly Disagree

Strongly Agree

**\*11. I tend to immediately accept what other people tell me.**

Strongly Disagree

Strongly Agree

## Section 1 - Skepticism

Statements that people use to describe themselves are given below. Please choose the response that indicates how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement.

**\*12. Other people's behavior does not interest me.**

Strongly Disagree

Strongly Agree

**\*13. I am self-assured.**

Strongly Disagree

Strongly Agree

**\*14. My friends tell me that I usually question things that I see or hear.**

Strongly Disagree

Strongly Agree

**\*15. I like to understand the reason for other people's behavior.**

Strongly Disagree

Strongly Agree

**\*16. I think that learning is exciting.**

Strongly Disagree

Strongly Agree

**\*17. I usually accept things I see, read, or hear at face value.**

Strongly Disagree

Strongly Agree

**\*18. I do not feel sure of myself.**

Strongly Disagree

Strongly Agree

**\*19. I usually notice inconsistencies in explanations.**

Strongly Disagree

Strongly Agree

**\*20. Most often I agree with what the others in my group think.**

Strongly Disagree

Strongly Agree

**\*21. I dislike having to make decisions quickly.**

Strongly Disagree

Strongly Agree

## Section 1 - Skepticism

Statements that people use to describe themselves are given below. Please choose the response that indicates how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement.

**\*22. I have confidence in myself.**

Strongly Disagree      Strongly Agree

**\*23. I do not like to decide until I've looked at all of the readily available information.**

Strongly Disagree      Strongly Agree

**\*24. I like searching for knowledge.**

Strongly Disagree      Strongly Agree

**\*25. I frequently question things that I see or hear.**

Strongly Disagree      Strongly Agree

**\*26. It is easy for other people to convince me.**

Strongly Disagree      Strongly Agree

**\*27. I seldom consider why people behave in a certain way.**

Strongly Disagree      Strongly Agree

**\*28. I like to ensure that I've considered most available information before making a decision.**

Strongly Disagree      Strongly Agree

**\*29. I enjoy trying to determine if what I read or hear is true.**

Strongly Disagree      Strongly Agree

**\*30. I relish learning.**

Strongly Disagree      Strongly Agree

**\*31. The actions people take and the reasons for those actions are fascinating.**

Strongly Disagree      Strongly Agree

## Section 2 - Demographic Information

This section contains 8 questions and should take approximately 5 minutes to complete.

Please select the option that best describes who you are below.

**\*32. What is your gender?**

- Female  
 Male

**\*33. What is your age?**

- 18-22  
 23-27  
 28-32  
 33-37  
 38-42  
 43-47  
 48-52  
 Over 53

**\*34. What is your class standing?**

- Freshman  
 Sophomore  
 Junior  
 Senior  
 Other (please specify)

**\*35. At which institution are you currently enrolled?**

- George Fox University  
 Oregon State University  
 Linfield University  
 Other (please specify)

**\*36. Are you a domestic U.S. student?**

- Yes  
 No

If no, please specify your home country:

**\*37. Assuming a 4.0 scale, please select your overall G.P.A.**

- 3.7 to 4.0  
 2.7 to 3.6  
 1.7 to 2.6  
 1.6 and below

**\*38. Please select your current major choice from the options below**

- Accounting  
 Non-accounting business (e.g. finance, marketing, management, global business, entrepreneurship)  
 Liberal arts (e.g. English, history, art, biology, chemistry, math, etc.)

Other (please specify)

**\*39. Approximately how long have you been declared as your current major?**

- Less than 1 year  
 1 year  
 2 years  
 3 years or more

**\*40. I believe this definition matches who I am:**

**A skeptic has an attitude that includes a questioning mind and a critical assessment of evidence.**

Strongly Disagree

Strongly Agree

### Section 3 - Personal Values

This section contains a list of 57 items and contains two Values Lists. The first Value List has 30 items. The second Value List has 27 items. This section should take approximately 15 minutes to complete.

### Section 3 - Personal Values

**\*41. In this questionnaire you are to ask yourself: "What values are important to ME as guiding principles in MY life, and what values are less important to me?" There are two lists of values on the following pages. In the parentheses following each value is an explanation that may help you to understand its meaning.**

**Your task is to rate how important each value is for you as a guiding principle in your life. The higher the rating, the more important the value is as a guiding principle in YOUR life.**

**In the following questions, select the rating that indicates the importance of that value for YOU, personally. Try to distinguish as much as possible between the values by using all the ratings. You will, of course, need to use ratings more than once.**

**Before you begin, please scroll through and briefly read ALL the values listed below in List 1. There are 30 values. After you have read through ALL the values listed, choose the one that is of supreme importance to you and rate its importance. Next, choose the value that is opposed to your values and rate it. If there is no such value, choose the value least important to you and rate it. Then rate the rest of the values in List 1.**

#### VALUES LIST 1

	Opposed to my values	Not important		Important		Very important	Of supreme importance
EQUALITY (equal opportunity for all)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
INNER HARMONY (at peace with myself)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL POWER (control over others, dominance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PLEASURE (gratification of desires)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FREEDOM (freedom of actions and thought)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A SPIRITUAL LIFE (emphasis on spiritual not material matters)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SENSE OF BELONGING (feeling that others care about me)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL ORDER (stability of society)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AN EXCITING LIFE (stimulating experiences)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MEANING IN LIFE (a purpose in life)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
POLITENESS (courtesy, good manners)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WEALTH (material possessions, money)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NATIONAL SECURITY (protection of my nation from enemies)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SELF RESPECT (belief in one's own worth)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RECIPROICATION OF FAVORS (avoidance of indebtedness)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



**42. VALUES LIST 1 (continued)**

	Opposed to my values	Not important		Important		Very important	Of supreme importance
CREATIVITY (uniqueness, imagination)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A WORLD AT PEACE (free of war and conflict)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RESPECT FOR TRADITION (preservation of time-honored customs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MATURE LOVE (deep emotional and spiritual intimacy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SELF-DISCIPLINE (self-restraint, resistance to temptation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PRIVACY (the right to have a private sphere)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FAMILY SECURITY (safety for loved ones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL RECOGNITION (respect, approval by others)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UNITY WITH NATURE (fitting into nature)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A VARIED LIFE (filled with challenge, novelty and change)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WISDOM (a mature understanding of life)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AUTHORITY (the right to lead or command)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TRUE FRIENDSHIP (close, supportive friends)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A WORLD OF BEAUTY (beauty of nature and the arts)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL JUSTICE (correcting injustice, care for the weak)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\*43. Now rate how important each of the following values is for you as A GUIDING PRINCIPLE IN YOUR LIFE. These values are phrased as ways of acting that may be more or less important for you. Once again, try to distinguish as much as possible between the values by using all the numbers.**

**Before you begin, read the values in List 2, choose the one that is most important to you and rate its importance. Next, choose the value that is most opposed to your values, or if there is no such value choose the value least important to you, and rate it according to its importance. Then rate the rest of the values.**

**VALUES LIST 2**

	Opposed to my values	Not important		Important		Very important	Of supreme importance
INDEPENDENT (self-reliant, self-sufficient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MODERATE (avoiding extremes of feelings and action)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LOYAL (faithful to my friends, group)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AMBITIOUS (hard-working, aspiring)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
BROADMINDED (tolerant of different ideas and beliefs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HUMBLE (modest, self-effacing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DARING (seeking adventure, risk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROTECTING THE ENVIRONMENT (preserving nature)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
INFLUENTIAL (having an impact on people and events)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HONORING OF PARENTS AND ELDERS (showing respect)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CHOOSING OWN GOALS (selecting own purposes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HEALTHY (not being sick physically or mentally)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CAPABLE (competent, effective, efficient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HONEST (genuine, sincere)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**44. VALUES LIST 2 (continued)**

	Opposed to my values	Not important	important	Very important	Of supreme importance
PRESERVING MY PUBLIC IMAGE (protecting my "face")	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
OBEDIENT (dutiful, meeting obligations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
INTELLIGENT (logical, thinking)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HELPFUL (waring for the welfare of others)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ENJOYING LIFE (enjoying food, sex, leisure, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DEVOUT (holding to religious faith and belief)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RESPONSIBLE (dependable, reliable)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CURIOUS (interested in everything, exploring)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FORGIVING (willing to pardon others)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SUCCESSFUL (achieving goals)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
CLEAN (neat, tidy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SELF-INDULGENT (doing pleasant things)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Section 4 - Vignette

Following is a brief workplace scenario. Please read the scenario and the action taken:

Tom Waterman is a young management accountant at a large, diversified company. After some experience in accounting at headquarters, he has been transferred to one of the company's recently acquired divisions run by its previous owner and president, Howard Heller. Howard has been retained as vice-president of this new division, and Tom is his accountant. With a marketing background and a practice of calling his own shots, Howard seems to play by a different set of rules than those to which Tom is accustomed. So far it is working, as earnings are up and sales projections are high. The main area of concern to Tom is Howard's expense reports. Howard's boss, the division president, approves the expense reports without review, and expects Tom to check the details and work out any discrepancies with Howard. After a series of large and questionable expense reports, Tom challenges Howard directly about charges to the company for typing that Howard's wife did at home. Although company policy prohibits such charges, Howard's boss again signed off the expense. Tom feels uncomfortable with this and tells Howard that he is considering taking the matter to the Board Audit Committee for review. Howard reacts sharply, reminding Tom that 'the Board will back me anyway' and that Tom's position in the company would be in jeopardy.

**ACTION:** Tom decides not to report the expense charge to the Audit Committee.

Please evaluate this action of Tom by circling the extent of your agreement with each of the following statements:

### 45. The situation above involves an ethical dilemma

Strongly disagree	Disagree	Slightly disagree	Neither agree/disagree	Slightly agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 46. Tom should not do the proposed Action

Strongly disagree	Disagree	Slightly disagree	Neither agree/disagree	Slightly agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 47. If I were Tom, I would make the same decision

Strongly disagree	Disagree	Slightly disagree	Neither agree/disagree	Slightly agree	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Thank You Page

THANK YOU!!!

Thank you for participating in this survey. Your contributions are greatly appreciated. Should you want a copy of the study when completed, please send an e-mail to [ssikkema@georgefox.edu](mailto:ssikkema@georgefox.edu).

**48. If you would like to add any comments, please do so here.**

**APPENDIX D: COVER LETTER**



**GEORGE FOX  
UNIVERSITY**

Dear Participant,

I am asking you to do me a favor in a research project to study the relationship between various individual characteristics of students and their degree of skepticism. With this letter is a questionnaire that asks a variety of questions about your values and experiences as a student. The link below will take you to the website for the survey. It should take you about 30 minutes to complete.

Through your participation and sharing, you will help us to describe differences in skepticism and personal values among students. The results of the survey will be useful to certain educators and accounting professionals who seek employees with skeptical attitudes. It is further hoped that this research will result in insights useful for training and future accounting practice. These results will be included in my doctoral dissertation and future scholarly publications.

I do not know of any risks to you if you decide to participate in this survey. I guarantee that your responses will not be identified with you personally. I will not have access to any identifying information as the website will not collect any identifying information.

The survey should take you about 30 minutes to complete. Do take the time to complete the questionnaire. Your participation is voluntary and there is no penalty if you do not participate.

If you have any questions or concerns about completing the questionnaire or about being in this study, you may contact me at (503) 538-9456 or [ssikkema@georgefox.edu](mailto:ssikkema@georgefox.edu). This project has been approved by the Human Subjects Committee at Anderson University. Questions about Human Subjects Review approval can be directed to Dr. Doyle Lucas at [dilucas@anderson.edu](mailto:dilucas@anderson.edu) or (765) 641-4367.

Survey link: <http://www.surveymonkey.com/s/YK22N3W>

Sincerely,

Seth E. Sikkema  
Doctoral Candidate

APPENDIX E: HUMAN SUBJECTS APPROVAL





February 24, 2014

Seth Sikkema  
912 Pioneer Lane  
Newberg, OR 97132

Dear Seth,

Regarding your request for approval to conduct research using human subjects: The DBA Human Subjects Committee has reviewed your proposed questionnaire and your method for gathering information for your dissertation entitled,

"Professional Skepticism of Students: A Descriptive Study of Differences in Trait Skepticism and Personal Values"

After discussing your request and reviewing the current version of your survey instrument, the DBA Human Subjects Committee **approves** your request to continue the conducting of your research.

You will need to continue to respond to editing and methodological requirements of your chair as well as other members of your dissertation committee.

Should the need arise for you to significantly modify your data gathering process then you will need to resubmit a request to the DBA Human Subjects Committee.

We wish you well as you progress towards the completion of your dissertation and your DBA degree.

Sincerely,

Doyle J. Lucas, Ph. D.  
DBA Program Director

**APPENDIX F: RESPONSE DISTRIBUTIONS ON TRAIT SKEPTICISM AND  
PERSONAL VALUES ITEMS**

**Table 27. Trait Skepticism Items Means and Standard Deviation by Institution**

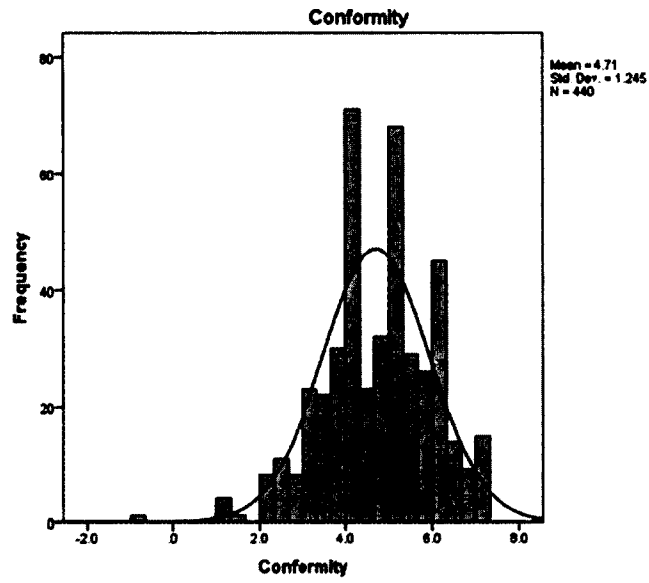
		Report		
		Institution		
		George Fox University	Oregon State University	Total
PS_1	Mean	2.97	2.95	2.96
	Std. Deviation	1.272	1.370	1.326
PS_2	Mean	4.39	4.56	4.49
	Std. Deviation	1.203	1.136	1.169
PS_3	Mean	4.82	4.72	4.76
	Std. Deviation	966	999	994
PS_4	Mean	4.94	4.67	4.79
	Std. Deviation	1.049	1.094	1.061
PS_5	Mean	4.92	4.68	4.79
	Std. Deviation	1.174	1.203	1.195
PS_6	Mean	4.49	4.63	4.57
	Std. Deviation	1.100	1.111	1.107
PS_7	Mean	3.81	3.92	3.87
	Std. Deviation	973	1.214	1.115
PS_8	Mean	4.99	4.97	4.98
	Std. Deviation	913	1.031	980
PS_9	Mean	4.82	4.70	4.76
	Std. Deviation	1.031	1.050	1.042
PS_10	Mean	2.78	2.81	2.80
	Std. Deviation	1.148	1.135	1.139
PS_11	Mean	2.10	2.63	2.40
	Std. Deviation	905	1.226	1.127
PS_12	Mean	4.06	4.19	4.13
	Std. Deviation	1.049	1.107	1.082
PS_13	Mean	3.47	3.62	3.55
	Std. Deviation	1.295	1.279	1.287
PS_14	Mean	4.76	4.55	4.64
	Std. Deviation	1.098	1.167	1.141
PS_15	Mean	4.83	4.69	4.75
	Std. Deviation	1.120	1.088	1.103
PS_16	Mean	3.18	3.50	3.38
	Std. Deviation	1.143	1.213	1.192
PS_17	Mean	2.76	2.61	2.68
	Std. Deviation	1.240	1.244	1.243
PS_18	Mean	4.42	4.26	4.33
	Std. Deviation	1.078	1.131	1.110
PS_19	Mean	3.45	3.57	3.52
	Std. Deviation	1.060	1.053	1.056
PS_20	Mean	4.36	4.13	4.23
	Std. Deviation	1.300	1.314	1.311
PS_21	Mean	4.43	4.59	4.52
	Std. Deviation	1.193	1.179	1.186
PS_22	Mean	4.62	4.56	4.59
	Std. Deviation	983	1.069	1.031
PS_23	Mean	4.61	4.62	4.62
	Std. Deviation	1.055	1.074	1.065
PS_24	Mean	4.20	4.27	4.24
	Std. Deviation	1.078	1.076	1.076
PS_25	Mean	3.19	3.08	3.13
	Std. Deviation	1.070	1.148	1.115
PS_26	Mean	2.44	2.78	2.63
	Std. Deviation	1.207	1.319	1.281
PS_27	Mean	4.62	4.66	4.64
	Std. Deviation	895	1.043	980
PS_28	Mean	4.14	4.36	4.27
	Std. Deviation	1.078	1.099	1.094
PS_29	Mean	4.46	4.30	4.37
	Std. Deviation	1.173	1.141	1.156
PS_30	Mean	4.71	4.49	4.59
	Std. Deviation	1.127	1.147	1.142
Trait Skepticism Score	Mean	131.99	130.22	131.00
	Std. Deviation	15.306	17.060	16.319

**Table 28. Personal Value Set Items Means and Standard Deviation by Institution**

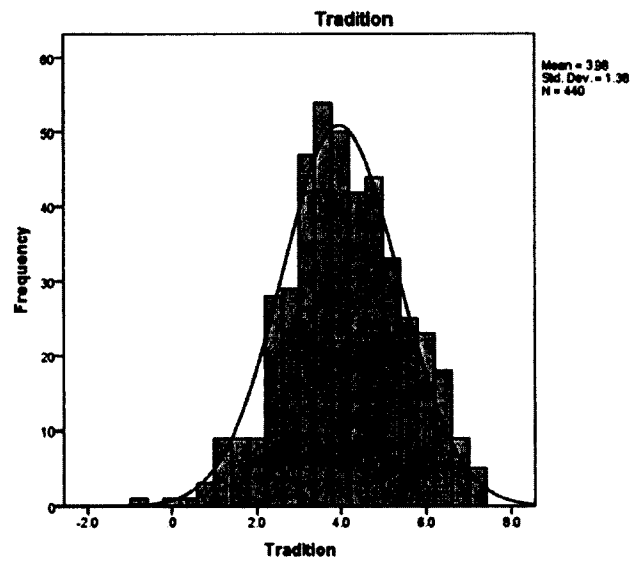
**Report**

	Institution					
	George Fox University		Oregon State University		Total	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Conformity	4.528	1.2669	4.845	1.2114	4.706	1.2446
Tradition	3.901	1.2302	4.040	1.4859	3.979	1.3798
Benevolence	5.440	1.0343	5.278	1.1664	5.349	1.1121
Universalism	4.051	1.1789	4.485	1.2876	4.295	1.2583
Self-Direction	4.634	1.0628	5.121	1.1415	4.907	1.1325
Stimulation	3.637	1.6148	4.415	1.5667	4.074	1.6326
Hedonism	3.542	1.5698	4.864	1.3523	4.284	1.5917
Achievement	4.705	1.1878	5.078	1.2000	4.915	1.2076
Power	2.168	1.4539	3.261	1.6344	2.781	1.6481
Security	3.890	1.1507	4.639	1.1511	4.310	1.2083

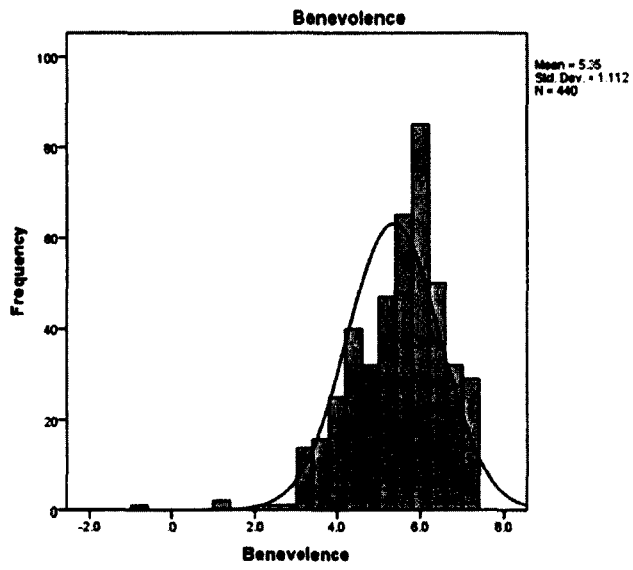
## APPENDIX G: SKEWNESS FOR PERSONAL VALUE SETS



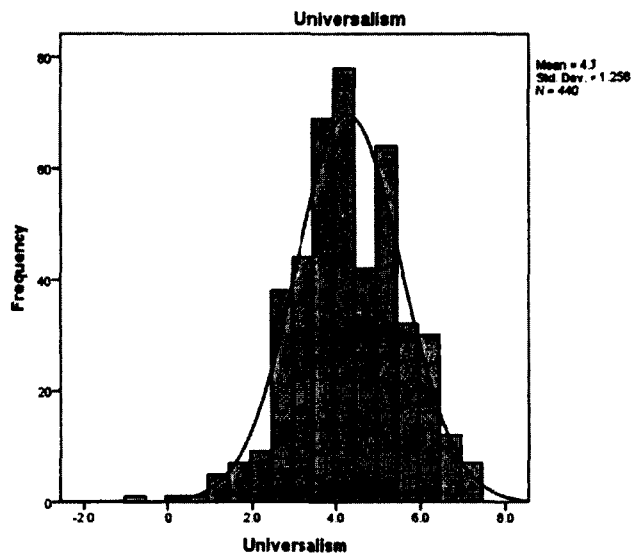
**Figure 2. Skewness for Conformity**



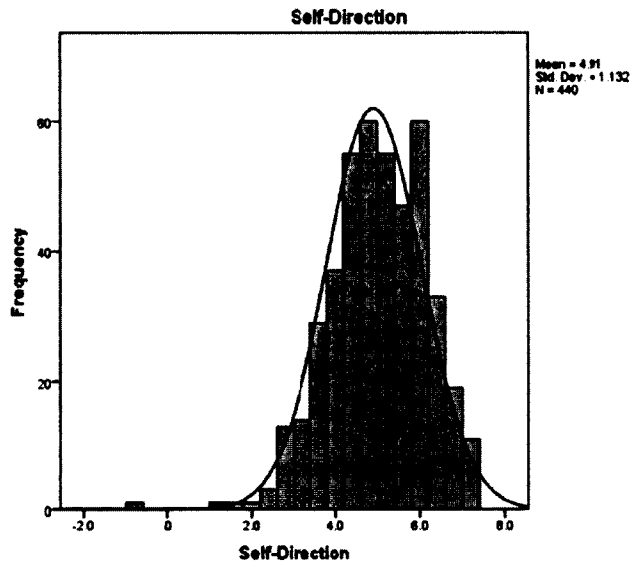
**Figure 3. Skewness for Tradition**



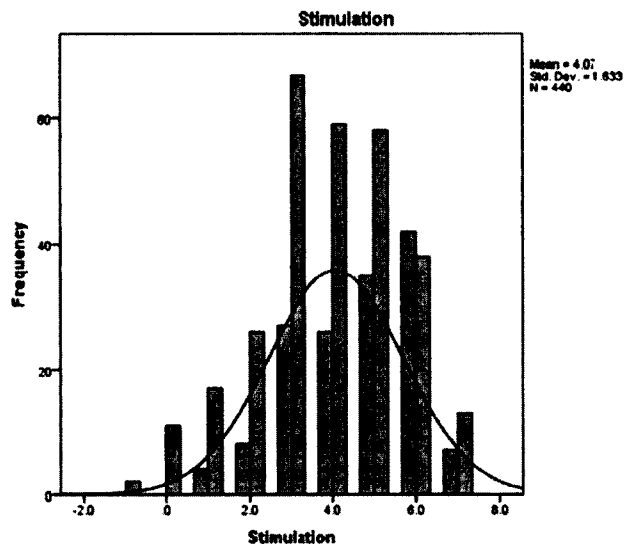
**Figure 4. Skewness for Benevolence**



**Figure 5. Skewness for Universalism**

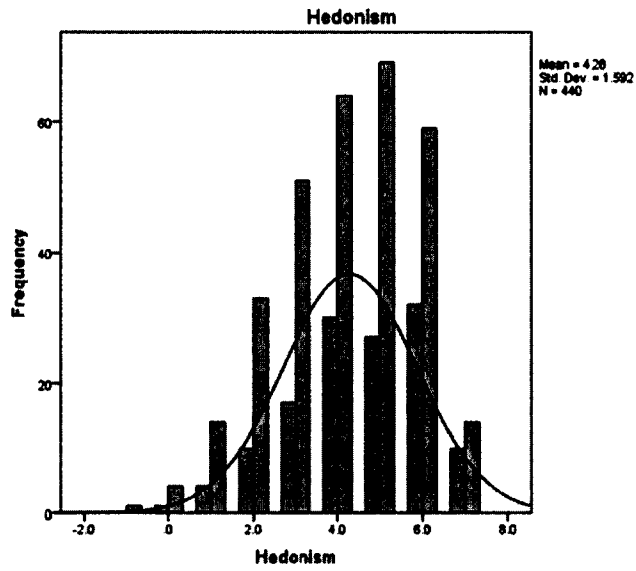


**Figure 6. Skewness for Self-Direction**

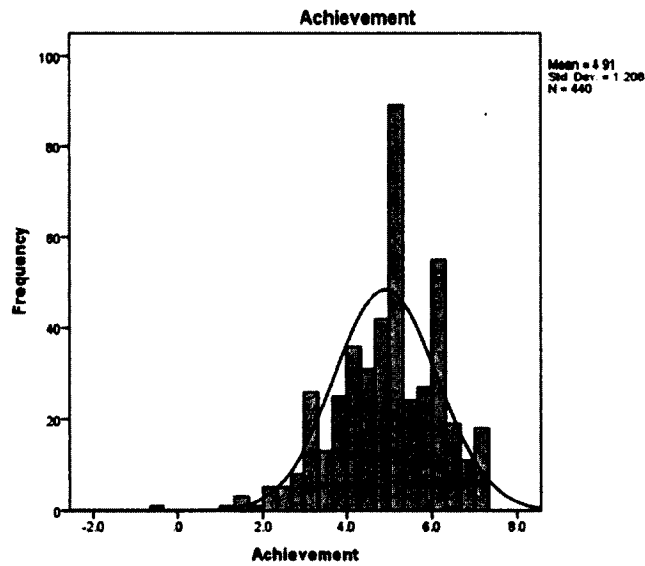


**Figure 7. Skewness for Stimulation**





**Figure 8. Skewness for Hedonism**



**Figure 9. Skewness for Achievement**

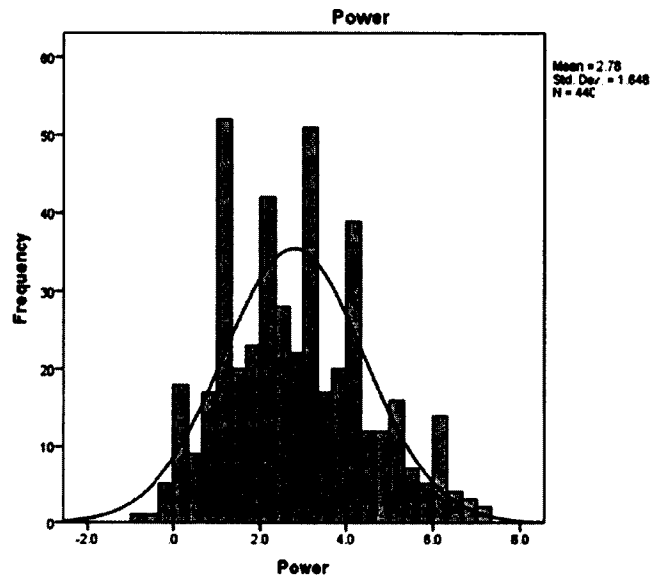


Figure 10. Skewness for Power

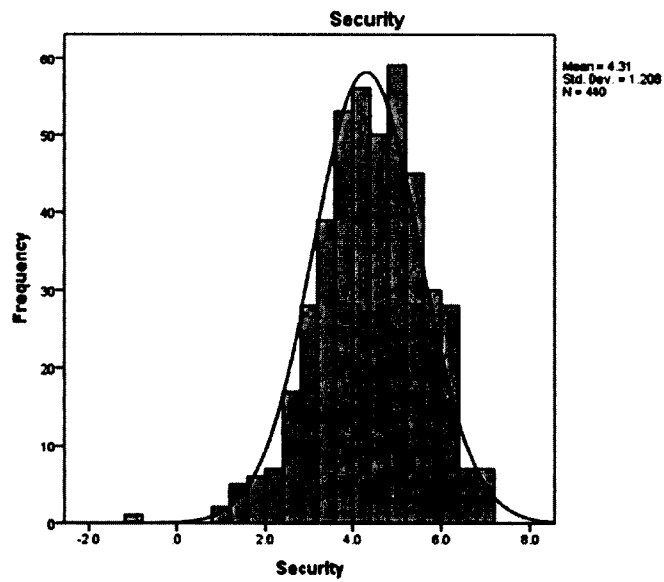


Figure 11. Skewness for Security

## APPENDIX F: VITA

# **Seth E. Sikkema, CPA**

**Curriculum Vita, Last Update August 2014**

## **Work Contact Information:**

Associate Professor of Accounting  
George Fox University  
School of Business  
414 N. Meridian Street #6252  
Newberg, OR 97132  
E-Mail: [ssikkema@georgefox.edu](mailto:ssikkema@georgefox.edu)  
Office: (503) 554-2813

## **Home Contact Information:**

912 Pioneer Lane – Newberg, OR 97132  
(503) 716-2949 (cell)

## **Education:**

D.B.A., *December 2014*, Major: Accounting, **Anderson University**

M.B.A., 2007, **Boise State University**: Magna Cum Laude

B.S., 1999, Major: Accounting, **George Fox University**: Magna Cum Laude

B.A., 1999, Major: Spanish Language, **George Fox University**: Magna Cum Laude

## **Dissertation Title:**

*Professional skepticism of students: A descriptive study of differences in trait skepticism and personal values.*

Committee Chairperson: Dr. Kent T. Saunders

## **Certifications, Honors, Awards, and Recognition:**

**2014: Sabbatical** granted by Board of Trustees for the fall 2014 term, George Fox University.

**2013: Best Paper – Pedagogy** for the paper entitled “*Justice for Fraud Victims Project: An Accounting Education Innovation*” received at the Christian Business Faculty Association annual conference, Bourbonnais, Illinois.

**2013: Received the Medal of Achievement Award from the Portland Police Bureau** (for the development and execution of the Justice for Fraud Victims program), Portland, Oregon.

**2010: Nominated for 2010 Faculty Achievement in Teaching Award**, George Fox University.

**2003: Certified Public Accountant**, Earned the Certified Public Accountant (CPA) designation through the California State Board of Accountancy.

**1999: Received the Outstanding Academic Achievement Award Presented by The Wall Street Journal** (voted on by the faculty as the best business student), George Fox University

**1995-1999: Benson Scholar**, George Fox University

#### **Memberships in Academic and Professional Societies:**

Certified Public Accountant, licensed in California

American Accounting Association (current membership)

Association of Certified Fraud Examiners (current membership)

Christian Business Faculty Association (current membership)

#### **Professional Experience:**

**2014 – Present: Associate Professor**, College of Business – George Fox University

**2007 – 2014: Assistant Professor**, College of Business – George Fox University

**2006-2007: Accountant II, Financial Reporting**, Idaho Power

**2003-2006: Accounting Supervisor, Financial Reporting**, Albertsons, Inc.

**2003-2003: Experienced Senior Auditor, Assurance**, KPMG, L.L.P.

**2002-2003: Director of Finance and Human Resources**, The River Church Community

**1999-2002: Senior Auditor, Assurance, Arthur Andersen, L.L.P.**

Summary of professional (non-academic) experience:

Extensive experience in auditing and financial reporting including several technical accounting areas such as: international audit coordination, high technology audits, GAAP compliance, internal controls, revenue recognition, consolidations, SEC quarterly and annual reporting, Board reporting, divestitures, cash flows, stock-based compensation and EPS reporting, and IPO reporting.

## **Research and Scholarship:**

### **Refereed Publications**

Sikkema, S. (2014). *Justice for fraud victims project: An accounting education innovation*. Christian Business Academy Review.

Sikkema, S. (2013). *Justice for fraud victims project: An accounting education innovation*. The Christian Business Faculty Association Annual Conference: Proceedings.

Sauerwein, J., & Sikkema, S. (2013). *Integrating Professionalism into the Accounting Curriculum*. The Christian Business Faculty Association Annual Conference: Proceedings.

Sikkema, S., Sauerwein, J., Halley, R., Rahschulte, T., & VandenHoek, J. (2013). *A Christian business perspective on the development of student character*. Calvin College Kuyers Institute's "Virtues, Vices, and Teaching" Conference: Proceedings.

Sikkema, S. (2013). "Charles Crocker." In *Encyclopedia of White-Collar and Corporate Crime, Second Edition*, ed. Lawrence M. Salinger and J. Geoffrey Golson.

Sikkema, S. (2013). "Global Crossing." In *Encyclopedia of White-Collar and Corporate Crime, Second Edition*, ed. Lawrence M. Salinger and J. Geoffrey Golson.

Sikkema, S., & Sauerwein, J. (2013). *The intersection of culture and learning in accounting education: Findings and implications*. American Accounting Association Western Region Conference: Proceedings (2013).

Sikkema, S. (2012). *The harmonization of accounting standards*. ACBSP Annual Edition, Vol. 3.

Halley, R., Rahschulte, T., VandenHoek, J., & Sikkema, S. (2012). *Addressing today's talent gap: An inductive investigation into balancing the demand and supply of 21<sup>st</sup> century workforce talent*. Advances in Business Research.

Halley, R., Rahschulte, T., Sikkema, S., & VandenHoek, J. (2012). *A prized product: Pushing business education closer to the world's need*. The Christian Business Faculty Association Annual Conference: Proceedings.

Sauerwein, J. & Sikkema, S. (2011). *Given an illiquid, yet transparent market, is it ethical for management of banks to use Level 3 inputs to increase the fair value of mortgage-backed securities, when Level 2 valuations are available?* One Voice International Collection of Scholarly Works, Vol. 1.

### **Conference / Professional / Invited Presentations**

**2014:** Attended The Christian Business Faculty Association Annual Conference. Nashville, Tennessee. October 2014.

**2014:** Invited participant in George Fox University Leadership Development Initiative for 2014-2015 academic year.

**2013:** Invited participant in the Free Market Forum hosted by Hillsdale College, a seminar that brings scholars together for dynamic exchanges of ideas on topics related to free market economics. San Diego, California. November 2013.

**2013:** Presented at The Christian Business Faculty Association Annual Conference. Bourbonnais, Illinois. October 2013. "*Justice for fraud victims project: An accounting education innovation.*"

**2013:** Presented at The Christian Business Faculty Association Annual Conference. Bourbonnais, Illinois. October 2013. "*Integrating Professionalism into the Accounting Curriculum.*"

**2013:** Presented at Calvin College Kuyers Institute's "Virtues, Vices, and Teaching" Conference. Grand Rapids, Michigan. October 2013. "*A Christian business perspective on the development of student character.*"

**2013:** Presented at American Accounting Association Western Region Conference. San Francisco, CA. April 2013. "*The intersection of culture and learning in accounting education: Findings and implications.*"

**2012:** \*Presented at The Christian Business Faculty Association Annual Conference. Langley, British Columbia, Canada. June 2012. "*A prized experience: Pushing business education closer to the world's need.*"

**2012:** Co-developed a presentation "*International Business Transactions*" (with Shawn Newhouse, Cornerstone University) that was shared with Dr. Sam Dunn for use in his Global Business courses at Northwest Nazarene University.

**2011:** Presented at One Voice International Conference for Educators. Boston, MA. October 2011. "*How ethical are Level 3 fair value measures?*"

**2011:** Attended American Accounting Association ABO Research Conference, Kansas City, KS. *2011 Mid-year meeting.*

**2009:** Attended Oregon Chapter of the Association of Certified Fraud Examiners.

Portland, OR. March 2009. *“The Good, The Bad, and The Ugly of Civil Law Enforcement.”*

**2008:** Attended Association of Certified Fraud Examiners Conference, Austin, TX. *“Principles of Fraud Examination.”*

\*Paper presented by co-author.

### **Manuscripts Under Review**

### **Working Research Papers**

Sikkema, S. *The loss of relevance in auditing.*

Sikkema, S. *A brief history of managerial cost and control measures.*

Sikkema, S. & Sauerwein, J. *Accounting choice: an ethical analysis of the 2001 Cisco Systems, Inc. inventory write-down.*

### **Service and Community Outreach:**

**2014:** Team leader for Serve Day.

**2014:** Co-led Juniors Abroad to East Africa (Uganda; Tanzania) with Dr. Paul Chamberlain.

**2014:** Appointed to serve on Finance subcommittee at Grace Baptist Church.

**2013:** Team leader for Serve Day.

**2013-2014:** Provided pro-bono forensic accounting assistance as a part of the Justice for Fraud Victims project launch.

**2012 – 2013:** Appointed to serve on the Senior Pastor Search Committee at Grace Baptist Church.

**2011 – 2013:** Elected to serve as an elder on the Elder Board at Grace Baptist Church.

**2010:** Provided a presentation on the topic of ethics within the field of accounting for a group of George Fox University undergraduate students.

**2009:** Co-led Juniors Abroad to Ghana, West Africa and London, UK with Dr. John Golorwulu.



**2008-2010:** Provided pro-bono tax assistance to individuals in the greater Newberg, OR community.

**2002-2003:** Served as Board Director for AHEAD Ministries, Inc.

**2002:** Led a 10-week biblical financial study at The River Church Community.

**2001-2003:** Provided pro-bono financial counseling for couples and individuals in San Jose, CA community.

**2001-2002:** Provided team training and led short-term missions teams to Honduras and Ghana, West Africa for members of The River Church Community.

### **Teaching Experience:**

Associate Professor – George Fox University (August 2007 – Present)

Undergraduate courses taught include:

- ACCT 271 – Principles of Financial Accounting
- ACCT 272 – Principles of Managerial Accounting
- ACCT 350 – Personal Taxation
- ACCT 370 – Accounting Information Systems
- ACCT 371 – Financial Accounting and Reporting I
- ACCT 405 – Volunteer Income Tax Assistance
- ACCT 471 – Advanced Accounting
- ACCT 472 – Auditing
- ACCT 481 – Cost Management
- ACCT 485 – Fraud Examination
- GEED 365 – Juniors Abroad: Ghana, West Africa
- GEED 365 – Juniors Abroad: East Africa
- GEED 365 – Juniors Abroad: South Africa

Graduate courses taught include:

- BUSG 503 – Accounting & Financial Reporting (Full-time MBA)

### **Curriculum Writing:**

**2013:** Developed a collaborative forensic accounting program (Justice for Fraud Victims) in conjunction with the Portland Police Bureau, Oregon Chapter of Associated Certified Fraud Examiners, Oregon Department of Justice, and Portland State University. A pilot course launched successfully in the spring 2013 term for selected students providing “hands-on” experience with actual fraud cases.

**2009:** Developed and defended a revision to the accounting major that resulted in an expansion of the curriculum by three courses.

### **Committee Service:**

**2013-2014:** Appointed by the Provost as a member of the Dean of the School of Business search committee.

**2013:** Appointed to serve as a member of the Third-year Peer Review committee for Dr. Nate Peach.

**2011:** Invited by the Undergraduate Business Chair to serve on the Accounting faculty position search committee.

**2011:** Appointed to serve as chair of the Third-year Peer Review committee for Dr. Ryan Halley.

**2010 – 2012:** Appointed by the Dean of the School of Business to serve as an Outcomes Assessment committee member for the ACBSP accreditation process. Primarily responsible for documenting the undergraduate outcomes assessment process, accomplishments, and future changes.

**2010:** Appointed by the Provost as a member of the Dean of the School of Business search committee.

**2010:** Appointed by the Dean of the School of Business to chair the Accounting faculty position search committee.

**2009:** Appointed by the Provost as a member of the Dean of the Instruction search committee.

**2009:** Invited by Career Services Director to serve on Assistant Career Services Director search committee.

**2009 - Present:** Appointed to serve as faculty representative on the George Fox University Technology Advisory Team.

### **References**

Ryan Halley, Associate Professor of Finance, Chair of Undergraduate Business & Economics, George Fox University.

Joshua Sauerwein, Assistant Professor of Accounting, George Fox University.

Debra Drecnik Worden, Professor of Business and Economics, George Fox University.

Dirk Barram, Professor of Management, George Fox University.

Chris Meade, Dean of the College of Business, George Fox University.

Contact information for references available upon request.