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THE IMPACT OF MATERIALITY, PERSONALITY TRAITS, AND ETHICAL POSITION ON WHISTLE-BLOWING INTENTIONS

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Business at Virginia Commonwealth University

by

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ACKNOWLEDGEMENT

The earning of the doctoral degree represents the completion of a personal goal which was born long ago. While this document lists only a sole author, the completion of this work would not have been possible without the contributions of many others. I need to express my gratitude to my dissertation committee for their efforts and guidance throughout this process: Dr. Benson Wier (chair), Dr. Carolyn Norman (co-chair), Dr. Alisa Brink, Dr. Sandy Cereola, and Dr. D'Arcy Mays. These committee members have helped to form a foundation which allowed me to develop the skills and knowledge to create this work and complete the program.

I wish to individually thank Dr. Benson Wier for his continual support through this process. Without his helping to manage the process through many different roles, I would not have been able to complete the process or in truth to even begin the dissertation. Dr. Wier forced me to accept realities that I would not have otherwise been able, and also encouraged me when I was close to admitting defeat. I would not be writing this acknowledgement had he not been the advisor, mentor, and friend which he became through this process.

The support of my wife, Mary and, my son, Samuel was instrumental in providing me the strength, patience, and continued determination to complete this process. Mary provided me the time to work through weekends and long evenings while trying to insulate me from other distractions. I will never fully know the extent of the sacrifices that were made by her to allow me to complete my program. Samuel provided the guidance and encouragement which is only possible through the innocence of a child. His excitement over every completed step of the process was motivation beyond any other source. The goal of completing this program was personal, but the process of completing the degree was done together, as a family.

I would also like to express my gratitude to my colleagues who helped me through this process. Dr. Jack Dorminey, who I am proud to call my friend, has mentored me and served as a sounding board throughout my program and I hope will continue to for many years to come. I also would like to thank Dave Coss and Kim Gower. Dave and Kim have faced similar challenges and obstacles through both the dissertation process and the demands of being a new faculty member. The many nights working together and encouraging each other will always be fond memories. I am further indebted to Dr. Mirta Martin, Dr. Cheryl Mitchem, and Dr. John Moore for their support, encouragement, and guidance while I have been completing this work.

I wish to express my gratitude Teresa Jordan with whom I worked prior to beginning the doctoral program. Teresa encouraged me to take the risk to leave my job and return to school. Without her, I would not have been able to even start to pursue the doctoral degree. Finally, I need to thank Carolyn Rutman, my mother. She has struggled through more versions and drafts of this work than any other person. I cannot imagine having this work completed without her help.

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ABSTRACT

THE IMPACT OF MATERIALITY, PERSONALITY TRAITS, AND ETHICAL POSITION ON WHISTLE-BLOWING INTENTIONS

By Karl Bryan Menk

A dissertation submitted in partial fulfillment of the requirements for the degree of
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Virginia Commonwealth University, 2011

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Throughout the previous decade, numerous scandals have been reported through employees engaging in whistle-blowing activities. The importance of whistle-blowing in a corporate environment is encouraged through the protections provided to employees engaging in whistle-blowing activities and has been identified as a significant factor in fraud prevention. Despite the importance of the role of whistle-blowing, employees are often hesitant to report a problem due to potential repercussions and retaliations. This study was motivated by the importance of whistle-blowing actions on businesses and the environment in which businesses operate as well as a desire to better understand the underlying causes of an individual's decision to engage in whistle-blowing practices.

This study examines the impact of personality traits, ethical position, and the materiality of a problem on an individual's decision to engage in whistle-blowing activities. Participants were asked to evaluate a scenario involving the improper recording of revenues. In the high

materiality scenario, the inappropriate revenues represented 10 percent of the annual revenues of the firm. Only 1 percent of the annual revenues were incorrectly reported in the low materiality scenario. The study tested multiple hypotheses using survey data collected from upper level accounting students attending a 4 year university.

The results of this study indicate that the ethical position of an individual is the most strongly related to an individual's intention to engage in whistle-blowing activities. The presence of more pro-social personality traits in the decision maker is also positively related to the decision to whistle-blow but not as significantly as ethical position.

Chapter I

Introduction

Throughout the previous decade, numerous scandals have been reported through employees engaging in whistle-blowing activities. The unacceptable or improper situations which created these scandals included improper treatment of financial items (Enron, MCI-WorldCom). These scandals were significant enough to change the manner in which companies and the industries in which they do business operate. Without the presence of an employee who was willing to report the inappropriate activities, these problems may not have been discovered.

The importance of whistle-blowers in a corporate environment has been recognized as a significant factor in fraud prevention, and whistle-blowing has been encouraged through the protections provided to the employees engaging in whistle-blowing activities (Hooks, Kaplan, Schultz, and Ponemon 1994; PricewaterhouseCoopers 2008). As a result of the financial scandals in the past decade, the Sarbanes-Oxley Act of 2002 (SOX) was enacted to improve the quality of the financial reports of public companies. In the whistle-blowing context, SOX Section 301(4) requires that the audit committee define procedures for establishing confidential and anonymous reporting methods for complaints related to accounting, audit concerns, and internal controls. This requirement for additional safeguards and protections for reporting a problem in a corporate setting emphasizes the importance of this type of behavior. In 2010, another set of protections for the whistle-blower was enacted through the Frank Dodd Act of 2010. This law may change the reporting intentions of many individuals due to the inclusion of a potential financial reward to the reporting person. In this law, the SEC is authorized to provide payments to whistleblowers that expose corruption in public companies. The law requires that

the information is voluntarily provided (by the informant), the informant is the first person to report the problem, and the information leads to monetary sanctions exceeding \$1,000,000 (H.R. 4173–111th Congress: Dodd-Frank Wall Street Reform and Consumer Protection Act. 2009). This law also changes the method of reporting by removing the requirement to initially report the problem to an internal source.

Despite the presence of the protections and the existence of a reportable event, many employees are reluctant to engage in whistle-blowing activities. Despite legal protections, whistle-blowers have historically been at risk for retaliatory treatment from the company and its employees. There are numerous negative consequences for whistle-blowing, including termination of employment, demotion in status and pay, and prevention of advancement (Liyanarachchi and Newdick 2009; Elias 2008; Loeb 1990). Whistle-blowing actions are expected of accounting professionals because accountants are trained to recognize dishonest or illegal activities. In addition, accountants have an ethical obligation to report such activities (McDevitt and Van Hise 2002; Shawver and Clements 2007). Public accountants are now acting as potential whistle-blowers against clients represented in an attest or preparation relationship (Elias 2008), but due to the potential negative responses to engaging in whistle-blowing activities, there must be compelling reasons for an individual to report any improper or inappropriate situations. If the reportable problem does not substantially impact the business, then the individual would not be able to justify the reporting risk (McDevitt and Van Hise 2002).

Prior research has focused primarily on the whistle-blowers' motivation to engage in the activities, the risks and repercussions that are encountered, the disclosed information, and the increasing roles and responsibilities of the accountant (Elliston 1982; Trevino and Bart 1992; Dozier and Miceli 1985; Near and Miceli 1996; Near and Jensen 1983; Barnett, Bass, and Brown

1996; Moberly 2006; Elias 2008). There are additional topics related to whistle-blowing which may impact the decision making process, including the ethical position and the personality traits of the reporting person. The materiality of the problem may also drive the decision to report the issue. This study extends the whistle-blowing literature by analyzing ethical position, personality traits, and materiality as it relates to an individual's intention to blow the whistle.

Due to the potential risks to persons who engage in whistle-blowing, the materiality of the unacceptable behavior or reportable situation must be of sufficient concern to motivate the individual to consider the results of the problem. The importance of the problem to the individual can be determined by more than just the financial aspects of the problem encountered (Jones 1991). The problem may be interpreted differently by decision makers based upon their ethical position and their personality traits. According to McDevitt and Van Hise (2002), the decision to report the issue will be impacted by the materiality of the problem and the source of the tension. Gleason and Mills (2002) examined the role of materiality on firms' reporting of contingent tax issues. They also found that the size (materiality) of the potential problem encountered by the firm impacted the actions taken. In this study, different materiality levels are manipulated in an experiment to examine the subsequent effects on respondents.

The personality traits of individuals in a corporate setting may also affect the intention to report a potential whistle-blowing scenario. The traits examined in this study are conscientiousness, openness to experience, extroversion, agreeableness, and neuroticism (psychoticism) (Goldberg 1992; Paunonen and Ashton 2001). Individuals have unique personalities formed by these traits. Prior research provides evidence that personality traits may be linked to certain types of behaviors, beliefs, and attitudes (Barrick and Mount 1991; Paunonen and Ashton 2001; Salgado 2002). For example, higher levels of neuroticism have been shown to

be related to socially negligent attitudes, while higher levels of the other personality traits correspond to higher levels of social responsibility and concern for others (MacCann, Duckworth, and Roberts 2009; Brown, Sautter, Littvay, Sautter, and Bearnese 2010).

The traits examined in this paper were based on the major indicators of personality as developed by Lewis Goldberg (1992). Goldberg's analysis of basic personality traits is accepted and widely used in personality trait research, but there are other indicators and scales available for use. Other studies using similar definitions of personality provided results that were consistent with those of Goldberg. (Costa and McCrae 1992; McCrae and John 1992; Piedmont, McCrae and Costa 1991). These separate works contribute to the refinement of the methodology used to determine an individual's personality trait levels. As a result of these studies, the Big Five Factors (extroversion, openness to experience, conscientiousness, neuroticism, and agreeableness) are accepted as a standard for the determination of the formation of an individual's personality. As a further method of analysis, Digman (1997) developed a higher order model which reduces the traits to two meta-traits that he labels alpha (α) and beta (β) traits. In this study, the personality traits of the participants were analyzed using Digman's meta-traits to examine whether there is a relation between materiality and whistle-blowing activities.

The actions of a potential whistle-blower may be affected by the ethical attitude or position of that individual. Forsyth (1992) developed a questionnaire measuring the ethical position (EP) of participants. Including the EP in the experiment allows for a test of the efficacy of EP in a materiality – whistle-blowing scenario. That is, if an employee is aware of a dishonest or illegal activity in a firm such as an improper recording of revenue, does ethical position influence the decision to report the situation? Reporting such problems may have a significant

impact on both the firm and the shareholders and investors. According to McDevitt and Van Hise (2002), different sources of influence impact a person's ethical position and by extension their decision making process. These sources of influence include workplace, profession, religion, legal system, community, and family. In this study, the participants evaluated improperly recorded revenue. Analysis tests whether an individual's ethical position impacts and directs their behavior in a questionable situation, such as the scenario the participants examined in this study.

The significance of this study and research question is emphasized by the number of scandals which have been disclosed through the whistle-blowing process in the previous decade. The protections afforded to whistle-blowers and the additional requirements for accountants and employees to report illegal or improper actions are further evidence of the importance of whistle-blowing activities. As prior literature has indicated, there have been negative consequences encountered by individuals who have reported problems (Elias 2008; Moberly 2006; Liyanarachchi and Newdick 2009). This study may provide additional insights into the motivation of individuals who must decide whether to report an improper situation. The analysis of the combination of personality traits and the ethical position of the decision makers may be useful to legislators in the maintenance and creation of protections and incentives for whistle-blowers.

This study is important as it focuses on practical issues and problems found in the business world. According to Birnberg (2009), managerial accounting research has primarily focused on the theoretical improvement of models and "inward-facing" studies. Birnberg advocates expanding research topics to include studies applicable to the practice of managerial

accounting. This paper evaluates the impact of certain determinants on the whistle-blowing intentions of the respondents, which has a clear, practical, real-world application.

In this study, the participants evaluated the materiality of an improperly recorded revenue item. In the two scenarios, the problematic item was valued at either 1 percent of total annual revenues or 10 percent of total annual revenues. After reading the scenario, the participants indicated their intention to engage in whistle-blowing activities, completed a personality trait index, an ethical position questionnaire, and demographic questions.

Study results indicate that an individual's ethical position is the most significant predictor of the whistle-blowing actions. The presence of more pro-social personality traits in the decision maker is also positively related to the decision to whistle-blow but not as significantly as the ethical position. The materiality of the problem impacts the outcome variable through the ethical position and not the personality traits.

The remainder of this study is organized as follows. The next chapter reviews the relevant literature on whistle-blowing, ethical position, and the Big Five personality traits. Chapter 3 develops a theoretical basis and motivation for the hypotheses. Chapter 4 describes the research methodology, the data sources, and the proposed analysis method. Chapter 5 provides the results of the analysis and the implications of the results. Chapter 6 summarizes the study and identifies the limitations of the study as well as potential areas for future research.

Chapter II

Literature Review

Whistle-blowing

Due to the increased attention on whistle-blowing activities resulting from recent financial scandals, whistle-blowing has been the focus of numerous academic studies. Whistle-blowing activities have been used by employees to express discontent or anger in an effort to change a situation they found unacceptable (Near and Jensen 1983; Near and Miceli 1985; Graham 1986). This expression of discontent may be reported to external or internal authorities. Near and Miceli (1985) discussed whistle-blowing as a means for individuals to report actions of concern to the appropriate internal or external authority. In contrast, Graham (1986) did not consider an internal reporting option as engaging in whistle-blowing activities and limited the discussion to those actions only reported to an external party. Several of the more significant and well-known scandals (Enron, MCI-WorldCom) were reported to an external party only after the internal reporting options were unsuccessful. Consistent with Near and Miceli (1985), whistle-blowing is defined as the reporting of actions to both internal and external authorities in the present study. The participants in the experimental setting were limited to reporting the presence of a problem to an internal party.

Whistle-Blowing Source

Some studies examine the method of reporting, such as Elliston (1982) who found that anonymous whistle-blowers protect themselves from repercussions, but their actions are less effective due to the anonymity of the source. Elliston, Keenan, Lockhart, and van Schaick

(1985) found that anonymous whistle-blowers actually cause an ethical dilemma for the firm as the accused does not have the opportunity to face the accuser. Hunton and Rose (2011) examined the impact of anonymous reporting on experienced audit committee members. The audit committee members were less likely to be influenced by an anonymous report and reported lower intentions to investigate and allocate resources to the reported issue. Consistent with Elliston (1992), the effectiveness of an anonymous report is found to be limited. Another study examined the impact of having the whistle-blower confront the person accused of an improper action. Kaplan, Pope, and Samuels (2010) examined the impact of an unsuccessful confrontation attempting to resolve an issue prior to engaging in a whistle-blowing action. This study finds that, after an unsuccessful confrontation, an employee is more likely to report the problem to an internal party than to an external party.

Reasons for Whistle-Blowing

Many factors impacting an individual's decision to report a problem through whistle-blowing action have been examined in the prior literature. For example, Trevino and Bart (1992) found that whistle-blowing is a behavior which provides benefit to the company and should be encouraged by management. They focused on common problems found in most businesses, such as theft, which could be minimized through whistle-blowing activities. Dozier and Miceli (1985) investigated the importance or seriousness of the problem being observed as a predictor of the intention to whistle-blow. In their study, the intention to whistle-blow was measured by a number of potential drivers including a purely altruistic intention, a pro-social behavior, and other mitigating factors considered in the decision making process. One of these components was the importance of the wrongdoing. Specifically, the authors phrased the question as: "Does

OM (organization member) consider the wrongdoing deserving of action?” Consistent with prior research indicating that the importance or materiality of the problem impacts the decision making process, the inclusion of materiality as a determinant of behavior is appropriate for the present study.

Taylor and Curtis (2010) found that the intensity of the moral dilemma influences the reporting intentions of the individual. Their study found that auditors with a high level of professional commitment would be more likely to report an observed violation. Near, Rehg, Van Scotter, and Miceli (2004) found that the situation or manner of unacceptable behaviors impacts subsequent whistle-blowing. Incidents of sexual harassment, mismanagement, or illegal actions are more likely to be reported than incidents of theft or safety concerns.

Barnett et al. (1996) discussed possible reasons why an individual may be personally driven to report a problem related to a peer. Potential causes for engaging in whistle-blowing activities include the religiosity as well as the ethical ideology of the individual observing an inappropriate action taken by a peer. They determined that religiosity has a positive impact on ethical ideology and that religiosity is positively related to intention to report. Another potential reason for engaging in whistle-blowing activities was discussed by Near and Miceli (1985). They indicated that expectancy theory, in which the reporting of a problem through a whistle-blowing action would cause a desired change, would provide support for a person engaging in whistle-blowing actions. Consistent with this stream of study, EP is an appropriate latent construct that may bear on an individual’s likelihood to engage in whistle-blowing activities.

Characteristics of Whistle-Blowers

Other studies examined the personal characteristics of the individuals who are likely to report an issue. Near and Miceli (1996), Miceli and Near (1988), and Keenan (2000) determined that persons likely to report a problem are more often male, have a longer term of employment with the company, and are in a higher position of authority in the firm. These studies help to create an image of the individual who may report but do not provide any information about the personality traits of these individuals. Other characteristics of a person willing to engage in whistle-blowing activities were examined by Reckers-Sauciuc and Lowe (2010). Reckers-Sauciuc and Lowe tested the influence of disposition on the behaviors of the reporting person. They found that environmental factors heavily influenced the affective states of the participants and their subsequent decisions. They found that an individual's environment will be a strong influence on the decision to engage in whistle-blowing actions.

The traits or characteristics of the individuals who are willing to report a problem were the focus of other studies. Near and Jensen (1983) determined that certain individuals are not driven by any external rewards or incentives. Instead, they are interested in reporting the problem solely because they feel it is the appropriate course of action. The determination to follow a specific course of action is more significant than the threat of retaliation or retribution. One of their limitations include the small sample size and limited number of variables investigated (sample size was 72 and only one type of activity, sexual harassment, was considered). As a result, the study may have simplified the scope of the positive and negative responses to whistle-blowing.

Whistle-Blowing and Legal Protection

A significant result of recent financial scandals was the implementation of the Sarbanes Oxley Act of 2002 (SOX). One of the topics addressed by SOX is the protection of whistle-blowers. SOX has two methods to support individuals who are willing to report problems found in a company. The first method, detailed in Section 301(4), requires the audit committee of public companies to establish a method of gathering information (complaints) related to accounting or accounting topics from employees while preserving anonymity. The second method of supporting the potential whistle-blower is found in Section 806 of the Act which states that the company is prohibited from retaliating against an employee after the disclosure of a problem. Since an employee's fear of retaliation or retribution has been shown to limit the likelihood of reporting a problem (Elias 2008), these two sections of SOX are designed to encourage the employee to expose the presence of a reportable item without that fear. Moberly (2006) discussed the improvements to reporting methods as a result of SOX legislation and expressed an opinion that the reduction of concerns about reporting an issue should increase the effectiveness of whistle-blowing activities.

Additionally, Near, Dworkin, and Miceli (1993) indicated that an expansion in reported whistle-blowing activities due to the increase in both protections to the whistle-blowers and the societal expectations to engage in whistle-blowing activities could be tied to both justice theory and power theory. They stated that based on power theory, the shift of power from the organization to the individual through mandated organizational procedures would result in a greater occurrence of whistle-blowing incidents. Justice theory was used to support the prediction that increased procedural justice for whistle-blowers would encourage more people to be active in this manner. Justice theory indicates that persons will have a strong sense of justice

and an intention to conform to the existing rules of that society (Jecker 2007). If the persons in that society believe that the rules in place are just and fair, then moral persons have the ability to determine what is appropriate and the desire to behave in that manner. Justice theory states that if the structure of society requires that certain actions be taken to ensure societal justice, then persons within that society will behave in that manner (Jecker 2007).

Barriers to Whistle-Blowing

The negative reaction and responses to whistle-blowers, the protections created by legislation, and the codes of ethics followed by accountants have been examined in several studies. Dozier and Miceli (1985) claimed that potential sanctions against whistle-blowers will impact the reporting intentions of participants if those participants understand the results of their actions. This view, which includes the fear of retaliation, has been tested in other studies. Students' fear of retribution or retaliation as a result of the disclosure of an accounting issue was discussed by Elias (2008). Another study found this fear present in accounting practice (Moberly 2006). This presence of fear as a deterrent to reporting a problem is consistent with Morrison and Milliken's (2000) theory of organizational silence which claims that typically negative reactions to bad news in an organization can result in a culture of silence relative to problems.

Elias (2008) used survey methods to examine the professional commitment of auditing students to report inappropriate or illegal activities of clients. Socialization issues anticipated by students as potential whistleblowers were investigated. Elias found that the closer the student was to graduating, the higher the professional commitment and thus the higher the likelihood that the student will engage in whistle-blowing. In addition, students were supportive of disclosing

fraudulent activities but, in general, were hesitant to disclose this information themselves out of fear of retaliation and the potential difficulty of finding future employment. To determine the professional commitment of the respondents, Elias surveyed students using vignettes.

Whistle-Blowing as Pro-Social Behavior

Despite the perceived negative effects from whistle-blowing, the action is discussed in multiple papers as being a pro-social or positive behavior in which the intent of the reporter is to support and benefit both the firm and reporting individual (Dozier and Miceli 1985). Berry (2004) argued that disclosure of internal problems is actually a behavior indicative of citizenship. The Elias and Berry studies support the view that whistle-blowing is a positive and supportive activity. Bowen, Call, and Rajgopal (2010) also support the importance of the whistle-blowing actions. In their study, the results of whistle-blowing at the firm level were examined. They found that there was a negative market response to the public disclosure of a reportable event, and that the firms in which incidents were reported were more likely to engage in corrective behaviors. Subsequent to the disclosure of the reportable item, firms were found to make improvements in corporate governance. Thus, the importance of reporting a problem extends beyond the individual and has significant influence on the firm.

Other research discusses issues that arise from the action of whistle-blowing as well as with the individuals who report the problems. Liyanarachchi and Newdick (2009) experimentally examined the impact of the severity of anticipated retaliation and the importance of moral reasoning on whistle-blowing intentions and activities. Contrary to prior research (i.e., Arnold and Ponemon 1991), a significant relationship was not found to exist between the severity of the anticipated retaliation and the moral reasoning of the respondent. However, the

sample and the scenarios in these two studies were very different, and thus the comparison between the papers may be limited.

In Arnold and Ponemon, internal auditors predicted the behavior of a potential whistle-blower using two manipulated variables, the manner of retaliation and the position of the potential whistle-blower. The position of the person detecting fraud was presented as one of the following: external auditor, internal auditor, or marketing analyst. The type of retaliation was either a direct or indirect penalty to the whistle-blower. A direct penalty would be the termination of the whistle-blower while an indirect penalty would be the closing of a company factory. The auditors determined that an external auditor is most likely to report a problem because of decreased risk of retaliation.

In Liyanarachchi and Newdick (2009), the gender of the student participant was found to be more significant in relation to the moral reasoning and the likelihood of whistle-blowing activities. They also argued that the participants were uncomfortable reporting the problem, fearing that protection would not be afforded them if their actions were made public. The reluctance to report the problematic issue raises fear that reliance on whistle-blowing activities by employees may be misguided. Recognition of the problem and intention to report was found to be present in the participants, but there was limited action on their part. They concluded that increased protection for the whistle-blower against the threat of retaliation would increase the probability of an employee engaging in whistle-blowing activities.

Summary

Since whistle-blowing has become a major focus of research in recent years due to the numerous scandals which have been discovered through the actions of whistle-blowing

individuals, the current study makes use of the prior research to further explore the characteristics of the potential whistle-blowers. Specifically, the current study employs the definition of whistle-blowing as established by Near and Miceli (1985). In the current study, the respondents are asked to indicate their whistle-blowing actions through the reporting of a problematic situation to an internal source. The issues of the anonymity of the individual and retaliation against the whistle-blower are not manipulated in this study.

Personality Traits

Personality traits are the focus of numerous studies across varied academic disciplines. The development of personality trait research originated as an extension of psychological research. The Big Five personality traits (conscientiousness, openness to experience, extroversion, agreeableness, and neuroticism/psychoticism) have been examined and studied consistently since Norman (1963) developed the initial markers of the Big Five traits. Goldberg (1992) refined the model for defining the traits that comprise an individual's personality and modified the markers with descriptive criteria that are widely used in research today. The basic markers of components of personalities are based on conscientiousness, agreeableness, emotional stability (neuroticism), intellect (openness to experience), and surgency (extroversion). The unique combination of higher and lower levels of each trait denotes the individual's personality. The current study uses the Big Five traits as a means of collecting information about the respondents. A 44 question index was employed to gather the relevant information about the personality traits of the participants.

Prior to the work done by Goldberg in 1992, there were numerous studies published using different models of the Big Five. One such study was a meta-analysis which examined the

previously established links between the personality dimensions and job performance (Barrick and Mount 1991). This study combined numerous prior studies which examined five different occupational groups (professionals, police officers, managers, sales persons, skilled / semi-skilled labor) and three different job criteria (job proficiency, training proficiency, and personnel data) to determine whether a consistent relationship was evidenced between these variables and personality traits. Results from the analysis of the combined prior studies indicate that conscientiousness is positively related to all groups across all criteria, while other traits are not universal in their application. The meta-analysis by Barrick and Mount included studies using the traits as predictive indicators of future behavior.

An important contribution of the markers as established by Goldberg is their refinement as a predictive tool for the expected behavior of an individual. Salgado (2002) examined the relation between the Big Five and certain counterproductive or anti-social behaviors, including absenteeism, accidents, deviant behaviors, and employee turnover. Salgado's results indicated conscientiousness is predictive of both deviant behaviors and employee turnover, while extroversion, openness to experience, agreeableness, and neuroticism are predictive of employee turnover. Absenteeism and accidents were not related to any of the traits included in Salgado's study.

A pivotal work helping to establish the link between the Big Five personality traits and their use in the prediction of behaviors of individuals is found in Paunonen and Ashton (2001). This study extended the work done by Goldberg and the Big Five traits were further clarified and unique underlying facets for each trait were developed. Each of the Big Five traits was subdivided into more specific components to further analyze causal relations for individual behaviors. These facets allow researchers to examine each trait in substantially more depth.

These specific components require extensive questionnaires to gather sufficient information to develop a complete analysis of an individual.

Brown et al. (2010) examined the personality traits of empathy and narcissism to determine if these traits impact the ethical decision making process of the individual. They used different business majors including finance, management, marketing, and accounting to test whether a specific major is significantly more or less ethical in the decision making process. The results indicate that empathy and narcissism are significant predictors of ethical behaviors and that finance majors are less empathic and more narcissistic than other business majors.

Conversely, Coleman and Mahaffey (2000) found that business students are no more likely to tolerate cheating than any other major. Because business students are consistent in their ethical behaviors with others in their own cohort group, this study uses only those students enrolled in an upper level accounting course.

Prior studies report inconsistent results regarding the relation between personality traits and social norms. Harland, Staats, and Wilke (2007) found a significant association, while Conner and Abraham (2001) reported an insignificant relationship. Social responsibility is the ability to look beyond the benefit of self and behave in a manner which will benefit others in society. Thus, individuals with higher levels of social responsibility are more likely to report an incident. An individual's sense of social concern or responsibility may be impacted by his personality traits. For example, Miller and Lynam (2003) and Newman, Kosson, and Patterson (1992) found that lower levels of agreeableness combined with a higher level of neuroticism will serve as potential predictors of criminal behavior. Hare, McPherson and Forth (1988) found that lower levels of conscientiousness are indicative of a tendency toward theft and other white collar

crimes as well as a general psychopathic outlook. These traits are not absolute predictors of a specific behavior but indicators of a potential pattern of behavior.

Digman (1997) developed a simplified model, based on the Big Five personality traits, which has reduced the uncertain correlation between the personality traits and the sense of social responsibility. This model reduced the traits to two meta-traits which he labeled alpha (α) and beta (β). The combination of these traits was developed based on the factor correlations from numerous prior studies, and the results were confirmed using factor analysis. These traits are both positively related to the general sense of belonging to the society and are theorized to be positively related to social responsibility. The alpha trait consists of agreeableness, conscientiousness, and emotional stability (neuroticism). As an example, emotional stability has a positive relationship to social responsibility while the lack of emotional stability, also known as neuroticism, has a negative relationship. The alpha trait is found to be related to the socialization of the individual and comprises socially desirable traits. The beta trait consists of extroversion and openness to experience. Beta traits are those indicating self-development and preservation. Because of the inconsistent results when using Goldberg's Big-Five traits, the current study is using the meta-traits as developed by Digman to analyze the personality traits of the individuals. These traits are used to determine the inclinations of the person to behave in a pro-social manner.

Personality traits have been shown through prior research to serve as accurate predictors of behaviors. Principally, Goldberg (1992) refined the basic personality traits found in all individuals and established usable descriptions of each. Digman (1997) further studied these traits and created two meta-traits which are both considered to be pro-social when found at high levels in a person. This study uses the Big-Five traits from Goldberg to collect the information

about the individuals and then uses Digman's meta-traits to measure the pro-social (social responsibility) intentions of the individual.

Ethical Position

Ethics research with respect to accounting has been prolific with papers examining a wide range of topics. It focuses on moral development rather than on virtue which may create an incomplete understanding of the process undertaken in business ethics, according to Armstrong, Ketz, and Owsen (2003). Armstrong et al. (2003) reviewed the prior literature which addressed ethics education in the accounting setting and discussed the need to move towards a virtues-based research focus. The authors used Thorne's Integrated Model of Ethical Decision-Making. Thorne's model was based on the theory of virtue ethics, which emphasizes that each person is in possession of virtues and that repeated exercise of those virtues will tend to increase the ethical decision making process of the individual. The other components of the model remain largely unexplored in the research literature but should receive more attention according to the authors. They suggest that ethical sensitivity of the individual as well as ethical motivation and character should be studied to help identify and understand the ethical dilemma that actors face.

Chan and Leung (2006) addressed the lack of literature on the ethical sensitivity of the individual when they examined the four psychological processes shown to impact the individual's overall moral position. Chan and Leung used a model developed by J.R. Rest in the 1980's which postulated that the a moral position is not a single stationary point but rather a combination of four basic processes including moral sensitivity, moral judgment, moral motivation and moral character. In examining this idea , the authors relied on the theory of cognitive moral reasoning and development which states that an individual's moral reasoning is

developed through a progression of increasing levels of moral reasoning, resulting in a higher set of ethical behaviors. The authors contended that most research involving ethics in accounting is focused on the ethical development, ethical judgments and ethical education of the respondents rather than the processes which allow for their development. This study differed from prior literature in that its focus was to examine the ethical sensitivity of the individual respondent rather than the ethical judgments itself. Chan and Leung's results indicated that students, as a result of limitations in ethical sensitivity as well as inability to comprehend the scenario presented, differ in their ability to detect the presence of an ethical issue. If the scenario is not understood, then it would be unlikely that the ethical dilemma would be understood and addressed appropriately. Consequently, even a highly ethical person may not behave ethically if he does not understand the issues being discussed.

Another aspect which may cause a person to behave in a manner which would not normally be considered ethical would be the organizational factors including the group dynamics, authority figures, and socialization processes. Jones (1991) found that in certain circumstances, individuals do not accept responsibility for their actions. Instead, the ethical decisions are based upon the authority structure of the organization. This indicates that the ethical position of the individual within an organization is determined at least in part by the formalized beliefs of the group. In this study, the formal intentions of the organization are not defined and should not impact the individual responses.

Jackling, Cooper, Leung, and Dellaportas (2007) examined the causes of the ethical failures in the accounting profession as perceived by the International Federation of Accountants (IFAC). In evaluating the causes, the authors used the theory of cognitive moral reasoning and development to explain the development of ethics in an individual. This theory examines the

method of making judgments and the reasons why specific judgments are made. The IFAC identified numerous potential causes of conflict between the ethical behaviors of professionals and the actual actions they subsequently undertake. Conflicts of interest, earnings management behaviors, and whistle-blowing activities are among the most common areas of concern for accountants. The IFAC members not only identified a need for increased ethical education in the training of accountants both in school and in the profession but wanted to be involved in the expansion of the ethical training.

Ethics have been examined in the practice of the profession as well as in the educational setting. Coleman and Mahaffery (2000) studied the potential difference in tolerance towards cheating based on the program of study as well as locus of control and personality types. The locus of control refers to the individual's belief that event outcomes are based on the individual's actions (internal control) or just chance and luck (external control). The choice of program of study (business or non-business) was not determined to have a measureable impact on the ethical sensitivity of the individual. However, the personality type, identified as either Type A (ambitious, hostile, impatient, competitive) or Type B (easy-going, tolerant, cooperative), was found to correlate to ethical sensitivity, particularly when viewed in conjunction with the locus of control. It was determined that contrary to expectations, students with Type A Personality are less tolerant of others cheating. This may be correlated to the underlying competitiveness of that personality type. Type B students are much more likely to be tolerant of the unethical behavior of others as they are less likely to challenge the behaviors of others. These findings support the concept that personality traits (types) can impact the ethical decision making process.

Ethical behaviors are impacted by numerous other situations which require situational ethics to be employed more often than a universal ethical code. McDevitt and Van Hise (2002)

examined the subsystems which influence the ethical decision making process of the individual. These subsystems extend beyond the internal personality traits and ethical upbringing to include such external forces as the workplace, family, religion, legal system, community, and profession. The authors argued that, when examining an ethical issue scenario with increasing materiality levels, an individual rates the importance of the subsystems at different levels. Also of note in this study is that the most important subsystems differ across individuals when examining an immaterial versus a material issue. Jones (1991) also found that the vividness of a moral concern or dilemma will increase an individual's ability to recognize a moral (ethical) issue. Thus, the materiality of the ethical dilemma can be seen to impact the ethical decision making process of the individual.

Other studies examine the relationship between ethical position and whistle-blowing actions. Brabeck (1984), using the Defining Issues Test, examined the levels of moral reasoning as a predictor of whistle-blowing behavior. The results indicate that individuals with a higher level of moral reasoning are more likely to report an unacceptable situation. Chiu (2003) studied the relationship between ethical judgment and whistle-blowing intentions as moderated by locus of control in a sample of Chinese nationals. Chiu found that locus of control significantly moderates the relationship between ethical judgment and whistle-blowing behavior.

Shawver and Clements (2007) presented numerous reasons why a person may or may not want to engage in a whistle-blowing activity, including social and workplace repercussions of such actions. Shawver and Clements' study examined the ethical positions of the participants using a Multi-Dimensional Ethics Scale. The study focused more on situational ethics and decisions based upon a variety of whistle-blowing scenarios including concerns about product liability, adjusting bad debt estimates, and unfair loan practices and earnings management

behavior. A limitation of the study is that it only included a sample of 54 accounting students from a single university. Findings support the claim that ethical behavior is a determinant of whistle-blowing behavior.

Forsyth (1992) developed a model of ethical orientation which contended that the behaviors of individuals will vary according to that person's level of idealism or relativism. Individuals with higher levels of idealism will have a defined set of behaviors. Responses to any given situation would be consistent for a purely idealistic person. Alternatively, a purely relativistic person would not have a defined set of responses. That person would analyze every scenario and situation to determine the proper action given the circumstances. However, individuals do not exist at either end of this spectrum. Rather, they are found somewhere between idealistic and relativistic. Forsyth's questionnaire indicates whether an individual is more idealistic or more relativistic. This study uses the 20 question personality index developed by Forsyth to determine the ethical position of the respondents.

Prior research has established that ethical position is a determinant of behavior. However, there are numerous situations which can impact a person's ethical behaviors including the materiality of an issue, the societal norms, and organizational support. This study extends our understanding of the impact of the ethical position of the individual on the intention to engage in whistle-blowing activities.

Materiality

Materiality as it pertains to accounting has been defined by Kohler (1970, p. 279) as, "The characteristic attaching to a statement, fact, or item whereby its disclosure... would be likely to influence the judgment of a reasonable person." Individuals determine the materiality

or importance of a problem based upon their judgment and decision making processes (Ro 1982). Ro further states that the decision making process is also impacted by the position of the individual making the decision. The positions differ from those who produce the information, those who use the information, and those who both produce and use the information. In this study, the position of the individual is defined as an accounting department staff member in a technology business using the information to make a decision or a producer-user as in Ro (1982).

Materiality as a component of the decision making process has been established through numerous studies including those previously discussed. The concept of materiality is not limited to the financial aspects of a problem in a scenario. Certain types of problems will be more material regardless of the dollar figure involved in a given scenario. As Jones (1991) proposed, the significance of the problem creates moral intensity which influences every moral decision. Jones discussed the implications of this theory and how increasing materiality or the tension of the problem will change the moral importance of the decision. Jones also included numerous concerns when examining the intensity or materiality of a problem including: magnitude of the consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effect. Each of these aspects can be used to determine the significance of a problem to an individual and are independent of the type of problem. The materiality of a problem may therefore not be driven solely by the financial aspects of the issue. Jones' paper established the relationship between the materiality of the problem and the ethical or moral understanding of the individual.

McDevitt and Van Hise (2002) examined six subsystems which impact the decision making process. These subsystems include workplace, profession, religion, legal system, community, and family. They found that the increasing materiality of a problem will cause

tension from different aspects of these subsystems. At changing levels of intensity, different subsystem components influence the decision making process differently. The materiality of the problem will not only impact the ability to determine the existence of a problem as Jones (1991) found, but also the sources of tension involved in the decision making process as found by McDevitt and Van Hise (2002).

Gleason and Mills (2002) examined the reporting of contingent tax issues as the materiality of the issue increased. The increase in materiality represented both a larger dollar value at risk and also an increased personal risk to the individual. The risk evaluated by the individual included repercussions against the individual or business entity if the problem were discovered. The materiality of the problem expanded the locus of concern for the decision maker. They found that when the value of the issue increases, the participant's behavior becomes more conservative and less likely to undertake an aggressive position. Thus, the materiality of the situation impacts the decision making process and actions of the respondents.

Near et al. (2004) found that the materiality of the potential reportable item is not just a monetary concern. They determined that the manner or type of situation being examined impacts the decisions of the individual as well. The authors found behaviors such as sexual harassment, mismanagement, or illegal actions are more likely to be reported than incidents of theft or safety concerns. The details of the unacceptable situation will impact the decision making including non-quantitative (non-monetary) measures. While the materiality of the reportable event is manipulated in the current study, the issue being considered is limited to a financial value. The respondents are not asked to evaluate a societal impact as a result of the scenario being considered.

While these studies have indicated that an individual's actions will be driven by the materiality of the problem, they have also indicated that materiality is not solely driven by the financial aspects of the problem encountered. If the problem encountered was determined to be of sufficient concern or material to the respondent, then that problem should impact their behavioral intentions. This study examines through a manipulation of the value of a reportable event the impact of materiality on the intention to engage in whistle-blowing.

Chapter III

Hypothesis Development

The model developed for this study was based on the theory and prior literature discussed in the previous chapter. Discovery of an improper accounting treatment or other potentially reportable event creates a situation in which an employee may choose to engage in whistle-blowing activities or not. However, the discovery of a reportable event is not the sole determinant of the individual's behavior. In this study, the personality traits, the ethical position and the materiality of the problem are also considered as components of the decision making process. The research question addressed in this paper is whether or not the personality traits and ethical position of an individual as well as the materiality of a reportable problem impact the intention to engage in whistle-blowing behavior. The research model presents the intention to report an improper or unacceptable situation as a function of the ethical position, the personality traits, and the materiality of the problem (see Figure 1). Therefore, the primary research question is:

Research Question 1: Are the determinants of the intention to engage in whistle-blowing activities consistent with the research model?

(Insert Figure 1 about here)

Jecker (2007) described justice theory as a predictor of the behavior of an individual in a structured society. She indicated that justice theory would require a moral person to behave in a manner which would comply with the established rules and norms of that society to ensure that

each person would receive fair treatment. Justice theory requires that the society in question have established rules and regulations for the behavior being considered as well as a societal expectation to comply with those rules. Justice theory has also been discussed in connection to whistle-blowing intention by Near et al. (2003). In that paper, justice theory was described as an individual's intention to comply with the established procedure and protections related to whistle-blowing.

Justice theory helps to explain why a person who is more pro-social or socially responsible would also be motivated to report a problem. The procedural requirements and societal expectations to report a problem would encourage a socially responsible person to behave in a manner supportive of those rules and norms (Near et al. 1993; Jecker 2007). In this study, the individual is asked to determine his intentions to engage in whistle-blowing. A more socially responsible person should be one who, according to justice theory, would want to comply with the reporting requirements and ensure that all persons received fair and equitable treatment.

Personality traits have been measured and used as predictors of either pro-social or anti-social behaviors. Pro-social or socially responsible behaviors are those which are beneficial to the society as a whole or which involve self-preservation and development. Prior studies investigated the link between achievement and pro-social behaviors (Laidra et al. 2006; MacCann et al. 2009). Anti-social behaviors are those which are harmful to the society or lack the preservation of the self. Numerous studies have examined the link between the personality traits and criminal and/or anti-social behaviors (Hare et al. 1988; Salgado 2002; Miller and Lynam 2007). While pro-social or socially responsible action is the ability to behave in a manner which will benefit others in a society, the determination of which combination of

personality traits will result in a higher level of social responsibility has been inconsistent in prior research. Studies were unable to determine which combinations of the Big-Five personality traits were truly predictive of high levels of social responsibility (Harland et al. 2007; Conner and Abraham 2001).

Due to the inconsistent relationship between the Big Five main traits and social responsibility, this study uses the meta-traits developed by Digman (1997) to serve as a proxy for the level of social responsibility. These traits are measured as a unit rather than at individual trait level. The combination of the traits reduces the impact of any single trait with either an abnormally high or low level. Digman's meta-traits combine conscientiousness, agreeableness, and neuroticism into a single trait (alpha) which is predictive of more social development. The beta trait is a combination of the openness to experience and extroversion of the person. This trait is indicative of self-preservation and development. High levels of both the alpha and beta traits are considered to be predictive of pro-social or socially responsible behaviors. Individuals with high levels of both the alpha and beta traits will be more concerned about the welfare of others and will have a higher sense of social responsibility.

A person who exhibits a high level of the alpha and/or beta traits would more likely to engage in socially responsible behaviors. The justice theory has established that the socially responsible (moral) individual in a society would be more likely to engage in actions that are compliant with the rules, regulations and societal norms. Therefore, given the legal requirements and societal expectations to report illegal or improper accounting behaviors through whistle-blowing actions, a person with higher levels of the alpha and beta meta-traits should be more likely to engage in whistle-blowing activities. Based upon this, hypothesis 1 is:

Hypothesis 1: Pro-social or socially responsible personality traits are positively related to whistle-blowing intentions.

An individual with a background or education in accounting, whether experienced or not, should have the skills required to determine the existence of a problem. This skill, coupled with an understanding of the expected and required behavior of accounting professionals (i.e., American Institute of Certified Public Accountants (AICPA) code of ethics) should guide an individual to report the problem to the appropriate person. Therefore, by following the accepted rules of the profession, the individual should be more likely to report the problem. The AICPA Code of Ethics requires that certain types of behaviors be followed without regard to the monetary level of the problem. This is consistent with the model of ethical orientation developed by Forsyth (1992) which argues that there are different expected behaviors of individuals with differing levels of idealism and relativism. Forsyth suggested that individuals with higher levels of idealism will have a prescribed rule for behaviors regardless of the situation. Conversely, higher levels of relativism will result in the individual making decisions based upon the situation rather than a predetermined set of standards (Forsyth 1992).

Justice theory provides a theoretical background which would lead to predictions regarding the actions of potential whistle-blowers and the ethical dilemma encountered. Justice theory holds that the societal norm (or ethical behavior) should have certain procedural requirements (Near et al. 1993). Jecker (2007) further indicated that the normal behavior in a structured society would include the desire to comply with the procedural requirements and ensure that individuals receive fair treatment. The AICPA Code of Ethics provides that procedural method to encourage and foster the reporting activities of potential whistle-blowers. Based on justice theory, when the method of reporting the problem has been clearly defined, and

the societal expectations of the individual have also been established, individuals should report the problem to comply with societal norms.

A person who is considering blowing the whistle will be influenced by his ethical position. An individual with a more idealistic ethical position will expect a positive outcome which causes no harm irrespective of the decision and action taken. This type of person does not anticipate his decisions to be a combination of positive and negative results (Forsyth 1980). A more relativistic person is likely to accept certain negative outcomes based on the circumstances. This type of person will likely have no permanently defined standards of behavior; rather, they allow the situation to determine their decision (Forsyth 1980).

Since decisions made by an individual are impacted in part by his ethical position, whistle-blowing behavior will be a function of the individual's ethical position. Engaging in whistle-blowing activities is described as an ethical choice (Near and Jensen 1983; Elliston 1985; Barnett et al. 1996; Elias 2008). In theory, individuals who are more idealistic will report the inappropriate behavior regardless of the situation (Forsyth, 1992), particularly those who are required to do so through the procedural requirements of their profession as described by justice theory. Persons with higher levels of relativism will make their decisions based on the situation as it is presented and not on a set of predefined rules. Using these prior studies as a basis, hypotheses 2a and 2b are:

Hypothesis 2a: There will be a positive relation between the idealistic ethical position and whistle-blowing behavior.

Hypothesis 2b: There will be a negative relation between the relativistic ethical position and whistle-blowing behavior.

The materiality of the problem observed affects the decision making process of the individual (Dozier and Miceli 1985; McDevitt and Van Hise 2002; Gleason and Mills 2002). As discussed by Dozier and Miceli (1985) the importance of a reportable issue to the potential whistle-blower will impact the decision making process. McDevitt and Van Hise (2002) examined the impact of increasing materiality in a decision making process and the subsystems which drive the decisions. Gleason and Mills (2002) found that when the materiality level of a contingent tax reporting issue is increased, the reported behavior of participants becomes more conservative.

Personality traits dictate an individual's level of social responsibility. Because a person with a higher sense of social responsibility will want to act in the best interests of others, a material or significant problem which could potentially impact others would be of greater concern to that person. In addition, increasing the severity of a reportable concern will eventually impact the individual evaluating the issue. This would change the issue from being one concerning only the self to one concerning others as well as society as a whole. In the current study, the increased materiality of the problem described in the scenario should be perceived as a threat to the individual participant's continued employment due to the increased risk to the business. Therefore, even those individuals with lower a sense of social responsibility should have been impacted by the materiality of the issue.

The manner in which an individual interprets the problem would impact the determination of the materiality of the problem and the response to the problem. Azjen (1991) found that the theory of planned behavior indicates that a negatively perceived item (event or behavior) would not be undertaken by that individual. An individual will be unlikely to permit the inappropriate recording of revenue if that action is seen as undesirable. Since a more

material problem would create a greater risk for both the individual and the business, an individual would be less likely to perceive the problem as being desirable. Therefore, the individual would be more likely to perceive the problem as unacceptable and would be inclined to behave in a more pro-social manner.

Based on the theory of planned behavior, an individual who perceives a situation as unacceptable will be less likely to allow that situation to exist. Since the materiality of the problem impacts an individual's interpretation, a larger problem will create a greater risk to the individual and will be seen as an undesirable position. When faced with an unacceptable or undesirable position, an individual will be more likely to engage in actions to prevent or correct the problem. Because the person will be more likely to behave in a pro-social manner, they are also more likely to exhibit more pro-social personality traits. This study proposes that there is a positive relation between the materiality of the problem and the self-reported personality traits. Specifically, the more significant the problem, the more likely the individual is to self-report a pro-social or socially responsible position through higher levels of the meta-traits. Using these studies as a basis, hypothesis 3 states:

Hypothesis 3: There will be a positive relation between the materiality of the problem and the pro-social personality traits.

The ethical issues should be recognized more readily due to the severity of the issue, and the participants should be able to determine the presence of the ethical dilemma (Jones 1991; Coleman and Mahaffey 2000). The materiality of the issue should have not only impacted the ability to recognize an ethical issue but also influenced the individual's perception of the situation. Marshall, Smith, and Armstrong (2006) found that the perception of an ethical dilemma is influenced by both the financial level of the issue (quantitative materiality) and the

type of issue or violation (qualitative materiality). Due to the increased importance of the ethical dilemma with a more material error, an individual with a more idealistic ethical position strives to undertake actions to minimize or eliminate the harm to others (Forsyth 1980). Additionally, the individual's perception of the problem would impact the interpretation of the situation. The theory of planned behavior states that if an item (event or behavior) was negatively evaluated by an individual, then that person is less likely to participate in the action (Ajzen 1991). Therefore, a person who interprets the inappropriate reporting of revenue as a negative action will be less likely to allow it. If the problem is more material, the individual will respond in a more idealistic manner and be more likely to exhibit an idealistic ethical position. Because the manipulation of materiality will impact the decision to engage in whistle-blowing actions through the ethical position of the person, this study proposes that there is a positive relation between the materiality of the problem and the participant's ethical position. Thus, hypothesis 4 is:

Hypothesis 4: There will be a positive relation between materiality and ethical position.

In summary, this section describes the hypotheses developed for this study based on prior research. The hypothesized model appears in see Figure 1. This study extends prior research of personality traits and whistle-blowing by including the elements of both materiality and the meta-traits of personality. This study also extends the work by Forsyth (1980) by including the impact of the individual's ethical position on their intention to blow the whistle.

Chapter IV

Research Methodology

The Task

In this study, the participants were provided with general instructions, case materials, a personality trait questionnaire, an ethical position questionnaire, manipulation check questions, and demographic questions. The participant was asked to assume the role of an entry-level accountant in a technology-based company. The responsibilities of this position included recording revenues earned from sales. The participant was made aware of an improper revenue entry that was made during the first quarter of the year related to a potential contract. At the end of the third quarter, the contract negotiations had failed, but the entry was still present in the financial records of the firm.

The two scenarios containing manipulated levels of materiality were randomly assigned to the participants. The participants were instructed to read one of two case scenarios adapted from Siefert, Sweeney, Joireman, and Thornton (2010). In the first scenario, the revenue improperly recorded was material (10 percent of total annual revenues) to the continued success of the firm (see Appendix 2A). In the second scenario, the revenue improperly recorded was immaterial (1 percent of total annual revenues) to the continued success of the firm (see Appendix 2B). After reading the case information, participants assessed their intentions to engage in whistle-blowing behavior using a five point Likert-type scale where “1” indicated highly unlikely and “5” indicated highly likely. The intention of the individual to engage in whistle-blowing activities was the dependent or outcome variable in this study.

After indicating their intentions related to whistle-blowing, participants completed a 44 question personality trait index (John, Donahue, and Kentle 1991; John, Naumann, and Soto 2008). Next the participants completed a 20 item Ethical Position Questionnaire developed by Forsyth (1980). The participants indicated their agreement with each item using a five point Likert-type scale in which “1” indicated highly disagree and “5” indicated highly agree. Finally, a series of demographic and manipulation check questions were asked to ensure that the participants were able to interpret and understand the scenario being considered in the study.

The statement of informed consent (Appendix 1), the scenario with the reporting issue at a material level (Appendix 2A), the scenario at an immaterial level (Appendix 2B), the personality index questions (Appendix 3), the Ethical Position Questionnaire (Appendix 4), and the demographic and manipulation check questions (Appendix 5) were provided to the participants.

Data Source

The participants in this study were accounting students either enrolled in or having completed an intermediate accounting course at four 4-year universities in the eastern US. The use of students as a proxy for entry-level professionals has been validated through prior studies (Hofstedt 1972; Ashton and Kramer 1980; Bloomfield and Libby 1996; Maines and Hand 1996; Lipe 1998; Maines and McDaniel 2000). Libby, Bloomfield, and Nelson (2002) documented that students are appropriate for studies which focus on general cognitive abilities, responses to economic forces which are learned in the experiment, as well as those requiring a basic knowledge of accounting and investing.

Consistent with the work done by Lipe (1998) and Maines and McDaniel (2000), the accounting students included in this study were considered appropriate proxies as they are expected to possess the requisite knowledge to analyze the task assigned. Basic accounting knowledge of reporting requirements includes an understanding of materiality of a reportable problem as presented in the instrument used here. Participants unable to appreciate the severity of the problem would be unaffected by the manipulation of the variable in the study. In the present study, the materiality of inappropriate recording of revenues is manipulated. The purpose of the manipulation is to determine whether materiality would impact the whistle-blowing intention of the participants.

While the preceding forms the basis for deeming that students are appropriate proxies for entry-level professionals, other studies have examined the ethical development of students (Rokeach 1972; Jeffrey 1993; Brandon, Kerler, Killough, Mueller 2007). Rokeach (1972) determined that an individual's ethical development (defined by a set of personal and professional values) is complete by the end of the educational process. Jeffrey (1993) established that accounting students have a higher level of ethical development than non-accounting business students. Brandon et al. (2007) examined the impact of client attributes on the ethical decision making process of undergraduate auditing students. Students who were evaluating higher risk clients described earnings management behavior as less ethical than those who evaluated the lower risk clients. The study supported the presence of a relationship between the client risk and moral development. Thus student determination of the ethical dilemma can be impacted by the situation in which the problem exists. In the current study, the respondents are asked to evaluate their intentions to report a problem, the size of which is manipulated between scenarios.

The Survey

Previously validated instruments were used to create the instrument for this study and are explained below by each item of interest.

Whistle-Blowing (WB). The scenario was adapted from the basic circumstances developed in Siefert et al. (2010) and was modified to include a manipulation based on the materiality of the reporting problem. Participants were informed of the existence of a problematic journal entry which has overstated the revenues for the firm. The reportable journal entry was the variable in the study which was manipulated. In one scenario, the improper recording of revenue was only 1 percent of total revenues (\$50,000 improper recording of revenue with \$5,000,000 of total revenue). In the other scenario, the improper journal entry was valued at 10 percent of the total revenues (\$500,000 error with \$5,000,000 of total revenue). All other aspects of the scenario were identical.

Personality Trait (PT). The 44 item personality trait index was developed by John et al. (1991) and updated by John et al. (2008). These questions assessed the level of each of the Big Five personality traits using a five point Likert-type scale. This short questionnaire has been shown to provide a reliable measure for each of the main traits included in this study. The Big Five personality traits were used to create the meta-traits as established by Digman. To establish the alpha trait, conscientiousness, agreeableness, and neuroticism (reverse scored) were combined. The beta trait consisted of extroversion and openness.

Ethical Position (EP). The ethical position of the individual was estimated by evaluating the responses to the twenty question survey developed by Forsyth in 1980. This survey presented single sentence statements which the individual evaluated as to the level of agreement

they shared with the statement. Half of the questions were designed to measure idealism while the others were intended to measure relativism.

The survey was administered through two methods. The participants were asked to complete the survey either via a classroom setting or through the internet using a web-based survey. Participants who completed the survey in a classroom setting were provided with a paper copy containing either the material or immaterial reportable item scenario. The surveys were randomly distributed to the participants. The results were collected and manually entered into an electronic spreadsheet for analysis. The participants completing the web-based survey were provided with an e-mail invitation to complete one version of the survey. Half of the students were assigned to each of the scenarios. A link to the survey website of a specific scenario was included in each of the e-mails.

A concern with using an internet based survey is sample bias. The use of the computer and the internet can create this bias since only those persons comfortable with a computer would be willing to participate in the study. Computer literacy combined with a willingness to share personal information through the internet is required for an individual to choose to participate in an internet based study. However, by targeting a single population such as college students in which computer access is extremely high, a sample bias may be reduced (Solomon 2001). The participants in this study were upper-level accounting students required to be skilled in computer and internet use.

The Dependent and Independent Variables

The dependent variable in the model was the participants' self-reported likelihood of their intention to report the error to an internal party. The participants reported their intention to

engage in whistle-blowing activities measured on a 5 point Likert-type scale ranging from Very Unlikely to Report (1) to Very Likely to Report (5).

This study tested whether the primary independent variable, the materiality level of the problem, will impact the reporting decision of the individuals as influenced by participant's ethical position and personality traits. These independent variables were analyzed to determine the relationship between the materiality level of the problem, the personality traits, the ethical position, and the subsequent outcome behavior.

The personality traits of an individual have been shown to be predictive of potential behaviors, both pro-social and anti-social (Hare et al.1988; Miller and Lynam 2003; Newman et al. 1992). These traits were measured through the use of the 44 item questionnaire (see Appendix 3) and indicated the magnitude of each trait in each participant.

The ethical position of the individual was measured using a scale developed by Forsyth (1980). This scale indicates that the position or orientation of an individual will lie between true idealism and true relativism. An individual's decision making process has been shown to be impacted by their ethical position. A more relativistic person is likely to believe that correct ethical behaviors may vary dependent on the scenario (situational ethics). A more idealistic person is likely to have a consistent or universal set of ethics regardless of the situation. Idealistic people are less likely to change their ethical behavior or base their ethical decisions on the situation presented.

Experimental Design

This study used a between-subjects design which tests dual scenarios with each participant analyzing a single scenario (Shadish, Cook and Campbell 2002). This design was

used to evaluate the impact of personality traits and ethical position on the relationship between the materiality of a problem and the intention to engage in whistle-blowing activities.

There are numerous advantages to using a between-subjects design, but there are also limitations that must be considered. Internal validity threats can be limited by the use of this design in a single exposure to the case study and evaluation of a single level of an independent variable (Smith 2003). Since testing occurs as a single event, there is no opportunity for the participant to mature, develop additional cognitive skills, learn from prior reviews or determine which variables were manipulated in the study. The participants in this study had a single exposure to the test materials.

External validity can be enhanced by the use of the between-subjects design. Since the participants were from different backgrounds, nationalities, ages, and genders, the results were more generalizable (Smith 2003). In addition to the independent variables being measured in this study (personality traits and ethical position), demographic information was also collected to determine if a relation could be found with the dependent variable.

Two potential limitations of this experimental design are low experimental power and the lack of control related to the unobserved and unmeasured variables. Randomization of the differences between the scenarios can serve to minimize the impact of the lack of control related to potentially unobserved variables. The low experimental power concerns can be minimized by increasing the sample size allowing the results to be more representative of the general population and by using approximately equal numbers of responses to each manipulation in the study (Smith 2003; Shadish et al. 2002). To address these limitations, the current study accumulates data from a large number of students from multiple universities. The total number of usable responses was 352 of which 152 respondents (43.18 percent of total responses)

analyzed the low level of materiality and 200 (56.82 percent of total responses) analyzed the high level of materiality.

Data Analysis

To analyze the data and answer the research question, this study uses structural equation modeling (SEM) analysis. The hypotheses proposed in this study were tested through path coefficients determined by the SEM model. This method of analysis is common in testing causal models such as that proposed in this study. The variables included in an SEM study can be categorized as either endogenous or exogenous. Sobel (1987) described the endogenous variables as those whose behavior is dictated by the system or model, while the exogenous variables are those determined outside the model. Endogenous variables are those which are modified in the model or when the variance in the variable can be explained by the exogenous and other endogenous variables. The behavior of the endogenous variables is dependent on the operation of the system or model. The variance in the exogenous variables cannot be explained by the factors or relationships in the model (Pearl 2000).

While the variables under consideration in the model may have values set either as a function of the model or independently of the model, the ability to measure the variable is also important to SEM. MacCallum and Austin (2000) described this analytical model as a method of testing patterns of relationships among and between measured and latent variables. The observed variables are those which are measured or controlled in the study while the latent variables are those which are not measureable or controlled. The methods employed in a structural equation model examine those variables which are unable to be measured directly

(Hunton, Wier, and Stone 2000). These latent variables are also known as hypothetical variables or constructs and are typically measured through multiple observable measures (Kline 2011).

Structural equation modeling examines constructs or latent variables which are not observable in themselves (Douglas and Wier 2000; Hunton et al. 2000). This study examined the relationship between the materiality level of a reportable situation and the ethical position of the individual as well as the ethical position to the reporting intentions. These relationships were not measured as stand-alone items, but rather as a function of numerous other measurable and observable variables. Structural equation method of analyses are appropriate for these relationships.

Chapter V

Results and Analysis

The methods of analyses which were performed in this study were described in the prior chapter. This chapter presents the results of the analyses in the following order: demographic data, descriptive statistics, sample size, estimation procedures, fit of the model, tests of hypotheses, and additional analysis.

Demographic Data

The survey respondents consisted entirely of accounting students either enrolled in or having completed an intermediate accounting course at four 4-year universities in the eastern United States. Sample demographics show that the genders of the respondents were nearly equal with 49.2 percent of the respondents being male and 50.8 percent of the respondents, female (see Panel A of Table 1).

The demographic data for the participants reveal that the average respondent age was 26.1 years. The array of the age of the respondents stretched from 19 years at the youngest and 57 years at the oldest. Despite the range of the ages of the respondents, the majority of the participants (72.1 percent) were 26 years of age or younger. Since only 7.7 percent of the respondents were 40 years old or older, the majority of the respondents were of the same age range as typical staff accountants (see Panel B of Table 1).

The majority of the student participants in this study self-reported being undergraduate students (76.4 percent). Another 17.3 percent of the respondents reported that they were either in

a graduate program or in an accounting certificate program. The remainder of the respondents (6.3 percent) did not indicate their class standing (see Panel C of Table 1).

(Insert Table 1 about here)

Students indicated their approximate grade point average by selecting an appropriate range. The majority of the students had a grade point average between 2.0 and 3.0 (63.36 percent). The students with a grade point average greater than 3.0 were 15.05 percent. There were 15.91 percent of the students who had a grade point average of less than 2.0 while the remaining 5.68% did not indicate a grade point average. The mean grade point average for the respondents was between 2.50 and 2.74 (see Panel A of Table 2).

The majority of the respondents (91.19 percent) in this study were accounting majors (either only accounting or as a double major including accounting). Other business majors were also included in the study with 2.84 percent of the respondents not majoring in accounting. Only a small percentage (5.97 percent) of the respondents did not indicate a major field of study (see Panel B of Table 2). The respondents who did not indicate a major course of study were still appropriate to be included in this study since all respondents were currently enrolled in an upper level accounting course. Thus, each respondent should have the appropriate background knowledge to understand the scenario presented in the survey.

(Insert Table 2 about here)

Descriptive Statistics

Each of the Big Five personality traits was measured in the study using multiple questions to create the latent variable used in the analysis. These measures were used to create another set of latent variables, the alpha and beta meta-traits. In addition, the ethical position of each respondent was created as a latent variable based on the responses to the ethical position questionnaire. The individual responses to the survey questions were combined to create a latent measure of each of the five personality traits and the two ethical positions examined in this study.

A correlation matrix for each of the latent variables, including both the Pearson and Spearman coefficients of correlation, is included in Table 3. The matrix shows a significant positive relation among each of the five personality traits except for the relation between openness and neuroticism. This relation between openness and neuroticism was positive but not significant at conventional levels. A positive relation between all of the variables is expected, since each measure represents either a pro-social or pro-individual trait. The alpha meta-trait is comprised of conscientiousness, agreeableness, and neuroticism. The beta meta-trait consists of extroversion and openness to experience. As was cited previously in this study, both of these meta-traits are positively related to the general sense of belonging to the society and are theorized to be positively related to social responsibility.

The ethical position measure, based on Idealism and Relativism scores, are not significantly related to each other. Idealism is positively related to conscientiousness, openness, and agreeableness ($p < 0.01$; 2-tailed). Relativism is negatively related to conscientiousness ($p < 0.01$; 2-tailed). Openness and agreeableness are positively related to Relativism ($p < 0.01$; 2-tailed) (see Table 3).

(Insert Table 3 about here)

A typical manner of assessing the internal consistency and reliability of a model is the Cronbach's alpha which provides an index of the variation in the model accounted for by the score of the construct (Cronbach 1951). Large values of Cronbach's alpha indicate that the observed variables are an appropriate measure of the latent (construct) variables. In this study, there are numerous latent variables employed. The measure of the underlying personality traits are considered latent variables as they were calculated based upon numerous questions. By extension, the alpha and beta traits are also latent variables created by the measurement of each of the underlying personality traits. Additionally, the ethical position of each respondent was created as a latent variable through the use of the ethical position questionnaire. The Cronbach's alpha for the each construct is included in Table 6 with all constructs ranging from a low of 0.759 (openness) to a high of 0.852 (extroversion). Prior research has established that a Cronbach's alpha reliability level of 0.70 is acceptable (Nunnally 1978). Therefore, Cronbach's alpha supports the use of each of the constructs in the model.

(Insert Table 6 about here)

Sample Size

Using SEM to perform the analysis of the data correctly requires a sample of sufficient size. Prior research has established that a minimum of a 5:1 ratio of observations to variables is required for normal and elliptical distributions and a 10:1 ratio for other distributions (Bentler

and Chou 1987). Further, Kline (2011) indicated that a sample size should be considered large if the number of responses (observations) is greater than 200. In the current study, there are 352 usable responses with only 9 indicator variables (materiality, extroversion, conscientiousness, openness, agreeableness, neuroticism, idealism, relativism, and whistle-blowing intentions). The sample (352 respondents) for this study is considered large (Kline 2011) and the ratio of observations to variables (39.11 observations per variable) is sufficiently large to satisfy the requirements of Bentler and Chou (1987).

Estimation Procedures

The use of SEM analysis as a tool for this study is appropriate because the model being tested includes several items which are not directly measurable. Unobservable or latent constructs can be examined using structural equation modeling (Hunton, Wier, and Stone 2000; Kline 2011). The latent constructs included in this study are the five personality traits (extroversion, conscientiousness, openness, agreeableness, neuroticism) and the two measures of ethical orientation (idealism, relativism). It was not possible to measure these unobservable variables. Rather, they were calculated as a function of other measurable and observable variables. With the presence of these latent variables, SEM is an appropriate method of analysis to be used in the current study.

SEM allows for the inclusion of the latent variables in the model, and it enables the analysis of patterns of relations between and among the latent and observable variables. SEM analysis tests a proposed model using a set of equations similar to regression analysis. Using this procedure, a dependent variable used in a regression analysis can also be used as a predictor in another analysis in the model. The Maximum Likelihood (ML) Solution is the most commonly

applied solution when employing SEM. Pedhazur and Schmelkin (1991) described the ML Solution as a representation of the most probable parameter estimates to have caused the observed variables. SEM also tests simultaneously confirmatory factor and path analyses. The method of analysis employed in this study uses the maximum likelihood estimators of the population parameters.

SEM allows a researcher to examine and test the direction of the paths hypothesized in the model as well as the path strength in order to investigate causation. These relations are established based on prior research and theory. Numerous studies have determined that causation is very difficult to establish and is also one of the more controversial topics in statistical research (Kemphorne 1978; Davis 1985). While the assumption of causation is common in normal thought, it is extremely difficult to provide evidence to support such relations in research. When using SEM analysis, the causation between the independent and dependent variables can be investigated (Pedhazur and Schmelkin 1991). Causation may be tested in a more robust manner through the use of a manipulation of the variables (Holland 1986).

Research Question and Model Fit

The research question asked in this model was: Are the determinants of the intention to engage in whistle-blowing activities consistent with the research model? As a means of evaluating the model and the results of the study, numerous indices were employed to determine the goodness-of-fit. There is no single index which is commonly accepted as an accurate determinant of the appropriateness of a given model. The tests used to evaluate the overall fit of the measurement model include the Mardia's coefficient, the chi-square test statistic, Comparative Fit Index (CFI), Bentler – Bonett Normed Fit Index (NFI), Bentler – Bonett Non-

Normed Fit Index (NNFI), Goodness-of-Fit (GFI), Bollen Incremental Fit Index (IFI), Adjusted Goodness-of-Fit Index (AGFI), Root Mean Square Error of Approximation (RMSEA), Average Absolute Standardized Residuals (AASR), and the Standardized Root Mean Square Residual (SRMR). The result of each of these tests is included in Table 4.

(Insert Table 4 about here)

The statistical package EQS Version 6.1 (Bentler 2006) was used to test the relations proposed by the research model. This software performs confirmatory factor analysis on specified predetermined models. Confirmatory factor analysis is required under SEM as the model being examined was developed through the application of previous works and relevant theory. EQS tests the relations in the proposed model to determine if the model is supported by the data (Kline 2011).

Prior to modeling, we tested the assumption of multivariate normality in the data. A Mardia's (1970) coefficient of 7.89 indicates multivariate non-normality. A coefficient measure between 0 and approximately 2 would indicate multivariate normality. As a result, we used an elliptical estimation method that is robust to the observed non-normality. Elliptical estimation models are effective in analyzing data which may not be normally distributed (Satorra et al. 1994).

EQS uses a structural equation modeling technique to provide estimated measurements for the model. The chi-square test statistic for the model evaluated in this study was 74.138 based on 19 degrees of freedom. The resulting chi-square ratio is 3.902. This result is lower

than the highest estimate for a moderate fitting model (chi-square ratio = 5.0) (Joreskog and Sorborm 1989) indicating a moderate fitting model.

The Comparative Fit Index (CFI) is less sensitive to sample size and sampling error limitations. This index includes a comparison between the actual model being tested against a model in which latent variables are not correlated. Based on the work done by Hu and Bentler (1999), an acceptable or moderately fitting model should have a CFI of at least 0.80 while a good fitting model should have a CFI of at least 0.90. The current model has a CFI of 0.841, indicating only a marginal fit.

The Bentler – Bonett Normed Fit Index (NFI) and Bentler – Bonett Non-Normed Fit Index (NNFI) require a score of 0.80 for a moderate fit and a score of at least 0.90 for a good fitting model. These tests are known to be sensitive to sampling errors that may occur during the design of the model and the data collection. The scores for these indices in the current model are 0.842 (NFI) and 0.585 (NNFI). These scores indicate that the model has only a moderate fit when using the NFI and does not have a good fit when using the NNFI as evaluation criteria.

The Root Mean Square Error of Approximation (RMSEA), Average Absolute Standardized Residuals (AASR), and Standardized Root Mean Square Residual (SRMR) should be evaluated with each other to more fully understand the results of each of these indices. The RMSEA is sensitive to any misspecified factor correlations. This measure calculates confidence intervals and uses the degrees of freedom in the denominator to account for model complexity and size. The acceptable threshold for a good fit model is either 0.06 (Hu and Bentler 1999) or 0.08 (Williams, Ford and Nguyen 2002). The RMSEA for the current model is 0.058. This indicates a moderate fitting model.

AASR calculates the total amount of the unexplained variances in the model (Bentler 1990). With this index, there should be a lower score to indicate that the unexplained portion of the variance in the model is a minimal amount. If the score is more than the acceptable threshold, it would indicate that too much variance in the model cannot be explained, and this model is not appropriate. The AASR score should be less than 0.05 to indicate a good fit of the model. The AASR score for the current model is 0.064 which specifies that this index does not support that the model has a good fit.

SRMR is more sensitive to unidentified factor correlations than the RMSEA and is more useful when combined with other tests including the RMSEA and the CFI (Hu and Bentler 1999). The current model provides a score of 0.0455. For the model to have a good fit there should be a score of less than 0.05, thus this result indicates a moderate fitting model. When this analysis is combined with the results from the RMSEA and CFI, it is apparent that the model has a moderate fit.

Other common tests were evaluated including Goodness-of-Fit (GFI), Bollen Incremental Fit Index (IFI), Adjusted Goodness-of-Fit Index (AGFI). These tests require scores of at least 0.80 for a moderate fit and 0.90 for a good fit model (Hu and Bentler 1999). The current model results for these indices are $GFI = 0.951$; $IFI = 0.795$; $AGFI = 0.885$. The results for the GFI support the goodness of fit for the model, while the IFI and AGFI support a moderate fit for the model.

The fit of the model being tested in this study cannot be evaluated by the use of a single index or measure. The results of each of these tests have indicated that the model is not supported by the data. The sole exception and indicator that this model has a good fit is the

Goodness of Fit Index. None of the fit indices with the sole exception of the GFI satisfied the threshold for asserting that the model would represent an acceptable fit.

Tests of Hypotheses

While the data does not support the theoretical model, each of the hypothesized paths was tested based on the structural equation modeling results. The significance of each coefficient path provides insight into the impact an individual determinant may have had on the decision making process. Hypotheses 1, 2a, 2b, 3, and 4 were evaluated by using each of the coefficient path values in the study model as shown in Figure 2. The expected and observed coefficient signs, the specific coefficient path values, and p-values are presented in Table 5.

(Insert Figure 2 about here)

(Insert Table 5 about here)

Hypothesis 1 predicts a positive relation between the higher levels of personality traits, as evidenced by the alpha and beta meta-traits of the respondent and that person's intention to engage in whistle-blowing activities. The alpha and beta meta-traits are both indicative of behaviors which are more concerned about the welfare of others and social responsibility. People with these traits are more likely to engage in whistle-blowing activities. The significant path coefficient (0.21) supports Hypothesis 1 (p-value = 0.047). This result supports the prediction that an individual exhibiting a higher level of the alpha and beta meta-traits will exhibit more socially responsible actions such as engaging in whistle-blowing activities.

Hypothesis 2A predicts a positive relation between the respondent's whistle-blowing intentions and a higher idealistic ethical orientation. Persons with a higher idealistic orientation are less likely to engage in unethical behaviors such as creating budgetary slack or earnings management (Douglas and Wier 2000; Greenfield, Norman, and Wier 2007). The path coefficient (0.10) is marginally significant supporting Hypothesis 2A (p -value = 0.042). Thus, the results of this study provide some evidence of a positive relation between an idealistic ethical position and ethically responsible behaviors such as whistle-blowing activities.

Hypothesis 2B predicts a negative relation between the respondent's whistle-blowing intentions and a higher relativistic ethical orientation. The path coefficient (-0.18) is significant and supports Hypothesis 2B (p -value = 0.033). Greenfield, Norman, and Wier (2007) and Douglas and Wier (2000) found similar results that supported the conclusion that individual's with a more relativistic ethical position were more likely to engage in questionable business practices such as earnings management and the creation of budgetary slack. The current study provides additional evidence that a negative relation exists between a higher relativistic orientation and an ethical behavior. These two concepts are complementary in that the higher relativistic orientation would have a positive relation to unethical behaviors and negative relation to ethical behaviors.

Hypothesis 3 predicts a positive relation between the materiality of the problem presented to the respondent and higher levels of personality traits, as evidenced in the alpha and beta meta-traits of the respondent. The significant path coefficient (0.11) supports Hypothesis 3 (p -value = 0.030). This suggests that the significance of the problem may be positively related to the presence of higher levels of the alpha and beta meta-traits.

Hypothesis 4 also predicts a positive relation between the materiality of the problem presented to the respondent and the ethical orientation as indicated by a higher idealistic orientation of the individual. The significant path coefficient (0.09) supports Hypothesis 4 (p-value 0.06). This suggests that the significance of the problem may be related to the presence of higher levels of an idealistic ethical position. Consistent with the impact of the materiality of the problem on the presence of the alpha and beta meta-traits, there is support for the relation between the materiality and ethical orientation of the individual. As with the results and implication of Hypothesis 3, this could be due to the impact of the significance of the problem on the respondent or the individual's self-perception and expressed ethical position may have been impacted by the magnitude of the problem encountered. Future research may allow for the ordering of the survey to be modified testing for the impact of the arrangement of the questions for both Hypotheses 3 and 4.

Chapter VI

Summary and Conclusions

Summary

Numerous scandals have been important enough that normal business operations have been modified to encourage whistle-blowing behaviors. Whistle-blowing activities have been recognized as a significant deterrent to fraud (Hooks et al. 1994; PricewaterhouseCoopers 2008). These activities are considered so important that Congress has enacted legislation to protect whistle-blowing employees. Despite these new protections, many employees are hesitant to engage in whistle-blowing activities due to possible retaliatory treatments. This paper is motivated by the need to better understand an individual's reasoning for being involved in whistle-blowing activities as well as the impact of the materiality on the decision making process. A purpose of this study is to develop a predictive model which could identify the type of person more likely to blow the whistle on improper actions.

Another purpose of this study is to investigate the potential determinants of an individual's whistle-blowing intentions. The study examines the impact of an individual's ethical position on that person's whistle-blowing intentions as well as the relation between the respondent's personality traits and whistle-blowing intentions. In addition, this study tests whether materiality affects behavior through the individual's ethical position and personality.

The study used survey methods to collect information from the participants. The scenario which each respondent was asked to evaluate manipulated the materiality of an accounting treatment. The survey included a 44 item personality index measuring the Big-Five personality

traits and a 20 item questionnaire measuring the ethical position of the individual. The respondents were then asked to indicate their intentions to engage in whistle-blowing behaviors.

The results of the study support the hypothesis that there is a positive relation between the presence of higher levels of the alpha and beta meta-traits and whistle-blowing behaviors. An individual possessing higher social concerns, as evidenced by the reported personality traits, is more likely to report a problem than individuals who are less socially responsible. The results also support the second hypothesis that predicts a positive relation between the idealistic ethical position and the whistle-blowing intentions of the individual.

The third and fourth hypotheses predict a positive relation between the materiality of the problem and the ethical position as well as the personality traits of the individual. The results of this study indicate that the third hypothesis was supported in the model. Evidence supports the positive relation between the materiality of the problem and the individual's personality traits. The fourth hypothesis was supported in the model as significant evidence supported a positive relation between the materiality of the problem and the individual's ethical position.

This study extends the extant literature by including the three independent variables incorporated in the model: ethical position, materiality, and personality traits. The combination of the personality traits and ethical orientation position of an individual along with the materiality of a reportable problem has not been studied in prior literature. This study also provides additional support for the relation between the ethical position (idealistic or relativistic) of an individual and the likelihood to engage in ethical behaviors as described in the previous work done by Douglas and Wier (2000) and Greenfield, Norman, and Wier (2007).

Contributions

Many studies have been conducted on the methods of reporting, reasons for engaging in whistle-blowing actions, as well as the results, including retaliation against the person who reports a problem (Near and Jensen 1983; Near and Miceli 1985; Elliston 1982; Elliston et al. 1985; Kaplan et al. 2010; Barnett et al. 1996; Elias 2008; Liyanarachchi and Newdick 2009). This study extends that research to include the combination of personality traits, ethical position, and materiality as components of the decision making process of the individual.

Specifically, this study examines the impact of the ethical position on the intention to engage in whistle-blowing activities. The personality traits of the individual participants are also measured as latent variables and are analyzed to determine if they will influence the intentions to engage in whistle-blowing activities. Finally, this work examines whether, in the presence of a material / immaterial reporting problem, the personality traits and the ethical position affect the participant's intention to engage in whistle-blowing actions.

Study results indicating a relation between personality traits and reporting intentions is also a significant contribution. Personality traits impact the decision-making process of the individual, but that impact is limited by the impact of their ethical position. There has been significant research into an individual's personality traits serving as an indicator of future behaviors or as a reason for prior actions. This study indicates, at least in the context of whistle-blowing actions, that ethical position is significantly more important than the personality traits of the individual.

The study also provides evidence that the materiality of the problem consistently creates a significant difference in the intentions of the person reporting the problem. Materiality related significantly to the ethical position of the individual. This study finds that in the context of the

present study, the materiality of a problem is significantly and positively related to individual personality traits.

As suggested by Birnberg (2009), the focus of research studies should include practical applications and expand beyond the extension of purely theoretical models. This study extends the extant knowledge and should be of interest to numerous parties in the business world. Principally, a greater understanding of the reasons why people may be more likely to report a problem to the proper authorities would be useful to policy makers. Better understanding of the individual could assist in helping to create a more supportive environment for potential whistleblowers. Corporations, boards of directors, managers, and hiring personnel could also consider ethical position as more important than personality traits for predicting behaviors. Finally, businesses may wish to emphasize ethics more in their internal training as well as review the current policies related to ethics, codes of conduct, expected behaviors in the firm.

Limitations of the Study

The current study has limitations. First, the participants in this study are accounting students attending classes at four Mid-Atlantic universities. While prior research has indicated that students are an acceptable proxy for entry-level accountants, the students are making decisions and judgments without facing the consequences which would be encountered if the students were actually employed. Thus, the decisions may be perceived as less realistic than they would have been if the scenario were real.

Second, it is possible omitted variables would impact the results of the study. However, the omission of a variable which significantly impacts the model biases against finding significant results in the tested model. Since the absence of an important variable would reduce

the probability of finding significance in the model, the existence of significant path results observed suggest that variables studied are appropriate. Despite this, there should always be some concern about the presence of a significant variable impacting the result which has not been considered by the researcher.

Third, the scenario presented here was adapted from a prior study (Siefert, Sweeney, Joireman, and Thornton, 2010). The adaptations included the amounts or materiality of the problem as well as the employee's time of service and other details related to the type of company for which the participant worked. The scenario employed was a fictional case in which the students assume the role and responsibilities of an employee who records the receipt of revenues for the firm. Due to the fictional nature of and the adaptations to the scenario, the scenario may not accurately test or measure the participants' responses as intended.

Finally, the study was administered through both an on-line method as well as a classroom distribution. The use of different methods may cause the results obtained to be dissimilar as a result of the method of data compilation. An ANOVA was conducted to test for significant differences in the mean responses of the intention to engage in whistle-blowing activities between the two testing methods. The ANOVA results indicate that there is no significant difference between the methods of data collection based upon the intention to engage in whistle-blowing activities ($F\text{-statistic} = 1.773$; $p\text{-value} = 0.152$). Also, because the survey was accessible for an undefined time, there is a possibility that discussions may have taken place between the students. This could have allowed for certain students to have gained information related to the survey prior to actually completing the work. Thus, while unlikely, certain students may have learned from the other students, thus affecting their responses.

Future Research

Another method of testing the respondents' perception of the importance of the problem would be to use accountants who are actively employed and in practice rather than using students as a proxies. Since staff accountants are more accustomed to working with large dollar figures, the use of actual employees could reduce the potential for the dollar amount of the problem to cause an overestimation of the importance of the problem.

Generalization of the results are limited but could be increased by using participants from other geographical regions in the United States and from international settings. While the inclusion of the ethical position and personality traits are assumed to account for the differences in societies, the comparison between the groups of respondents would be more likely to indicate if a true societal difference exists.

The scenario could be modified to change the materiality of the problem from being measured through a dollar amount or percentage of income to the manner of problem encountered (e.g., racism, sexism, or theft). The legality of the situations being examined may also be significant to the whistle-blowing intentions of the individuals. This would allow for the researcher to examine both whether the participants were able to recognize the difference between an illegal and a non-GAAP compliant scenario. There are numerous actions which, while not illegal, are definitely not in compliance with GAAP. The desire to comply with GAAP may be significantly different than the desire to comply with legal regulations.

Finally, since the evidence supports the assertion that the ethical position of the individual will drive the decision-making process, an additional study which examines other factors influencing a person's ethical position would be appropriate. This study would examine more of the individual differences between the participants related to religion, region of birth, or

family status. This study would provide evidence to create a more complete understanding of the type of person who is more or less likely to engage in whistle-blowing activities.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Armstrong, M., Ketz, J. E., and Owsen, D. (2003). Ethics education in accounting: Moving toward ethical motivation and ethical behavior. *Journal of Accounting Education*, 21(1), 1-16.
- Arnold, D. F., and Ponemon, L. A. (1991). Internal auditors' perceptions of whistle-blowing and the influence of moral reasoning: an experiment. *Auditing*, 10(2), 1-15.
- Ashton, R. H. and Kramer, S. (1980). Students as surrogates in behavioral accounting research: Some evidence. *Journal of Accounting Research*, 18(1), 1-15.
- Barnett, T., Bass, K., and Brown, G. (1996). Religiosity, ethical ideology, and intentions to report a peer's wrongdoing. *Journal of Business Ethics*, 15(11), 1161-1174.
- Barrick, M. R., and Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44(1), 1-26.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Bentler, P. M. (2006). EQS 6 Structural Equations Program Manual. Encino, CA: Multivariate Software, Inc.
- Bentler, P. and Chou, C. (1987). Practical issues in structural modeling, *Sociological Methods and Research*, 16, 78-117.
- Berry, B. (2004). Organizational culture: A framework and strategies for facilitating employee whistleblowing. *Employee Responsibilities and Rights Journal*, 16(1), 1-11.
- Birnberg, J. G. (2009). The case for post-modern management accounting: Thinking outside the box. *Journal of Management Accounting Research*, 21(1), 3-18.
- Bloomfield, R. and Libby, R. (1996). Market reactions to differentially available information in the laboratory. *Journal of Accounting Research*, 34(2), 183 – 207.
- Bowen, R.M., Call, A.C., and Rajgopal, S. Whistle-blowing: Target firm characteristics and economic consequences. *The Accounting Review*, 85(4), 1239 – 1271.
- Brabeck, M. (1984). Ethical characteristics of whistle blowers. *Journal of Research in Personality*, 18(1), 41-53.

- Brandon, D. M., Kerler, W.A., Killough, L. N., and Mueller, J. M. (2007). The joint influence of client attributes and cognitive moral development on student's ethical judgments. *Journal of Accounting Education*, 25(1, 2), 59-73.
- Brown, T., Sautter, J., Littvay, L., Sautter, A., and Bearnes, B. (2010). Ethics and personality: empathy and narcissism as moderators of ethical decision making in business students. *Journal of Education for Business*, 85(4), 203-208.
- Chamorro-Premuzic, T., and Furnham, A. (2008). Personality, intelligence and approaches to learning as predictors of academic performance. *Personality and Individual Differences*, 44(7), 1596-1603.
- Chan, S.Y.S. and Leung, P. (2006). The effects of accounting students' ethical reasoning and personal factors on their ethical sensitivity. *Managerial Auditing Journal*, 21(4), 436-457.
- Chiu, R. K. (2003). Ethical judgment and whistleblowing intention: Examining the moderating role of locus of control. *Journal of Business Ethics*, 43 (1, 2), 65-74.
- Coleman, N. and Mahaffey, T. (2000). Business student ethics: Selected predictors of attributes toward cheating. *Teaching Business Ethics*, 4(2), 121-136.
- Conner, M. and Abraham, C. (2001). Conscientiousness and the theory of planned behavior: Toward a more complete model of the antecedents of intention and behavior. *Personality and Social Psychology Bulletin*, 27(11), 1547-1561.
- Costa, P. T. and McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO personality inventory. *Psychological Assessment*, 4(1), 5-13.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- Davis, J. A. (1985). *The logic of causal order*. Newbury Park, CA: Sage.
- Digman, J. M. (1997). Higher-order factors of the big five. *Journal of Personality and Social Psychology*, 73(6), 1246-1256.
- Douglas, P.C. and Wier, B. (2000). Integrating ethical dimensions into a model of budgetary slack creation. *Journal of Business Ethics*, 28(3), 267 - 277.
- Dozier, J. B. and Miceli, M. P. (1985). Potential predictors of whistle-blowing: A prosocial behavior perspective. *Academy of Management. The Academy of Management Review*, 10(4), 823-835.
- Elias, R. (2008). Auditing students' professional commitment and anticipatory socialization and their relationship to whistleblowing. *Managerial Auditing Journal*, 23(3), 283-294.

- Elliston, F.A. (1982). Anonymity and whistleblowing. *Journal of Business Ethics*, 1, 167-177.
- Elliston, F.A., Keenan, J. P., Lockhart, P., and van Schaick, J. (1985). *Whistleblowing research: Methodological and moral issues*. New York: Praeger Publishers.
- Forsyth, D. R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39(1), 175-184.
- Forsyth, D. R. (1992). Judging the morality of business practices: The influence of personal moral philosophies. *Journal of Business Ethics*, 11(5, 6), 461-470.
- Gleason, C.A. and Mills, L.F. (2002). Materiality and contingent tax liability reporting. *The Accounting Review*, 77(2), 317 – 342.
- Goldberg, L. (1992). The development of markers for the big-five factor structure. *Psychological Assessment*, 4(1), 26-42.
- Graham, J.W. (1986). Principled organizational dissent: A theoretical essay. *Research in Organizational Behavior*, 8, 1-52.
- Greenfield, A.C., Norman, C.S., and Wier, B. (2007). The effect of ethical orientation and professional commitment on earnings management behavior. *Journal of Business Ethics*, 83(3), 419-434.
- Hare, R. D., McPherson, L. M., and Forth, A. E. (1988). Male psychopaths and their criminal careers. *Journal of Consulting and Clinical Psychology*, 56(5), 710-714.
- Harland, P., Staats, H., and Wilke, H. A. M. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: Questions derived from norm-activation theory. *Basic and Applied Social Psychology* 29(4), 323-334.
- Hofstede, T. R. (1972). Some behavioral parameters of financial analysis. *The Accounting Review*, 47(4), 679-692.
- Holland, P. W. (1986). Statistics and causal inference. *Journal of the American Statistical Association*, 81, 945-960.
- Hooks, K.L., Kaplan, S.E., Schultz, J.J., and Ponemon, L.A. (1994). Enhancing communication to assist in fraud prevention and detection: Comment: Whistle-blowing as an internal control mechanism: Individual and organizational considerations. *Auditing*, 13(2): 86-131.
- H.R. 4173–111th Congress: Dodd-Frank Wall Street Reform and Consumer Protection Act. (2009). In *GovTrack.us (database of federal legislation)*. Retrieved March 25, 2011, from <http://www.govtrack.us/congress/bill.xpd?bill=h111-4173>

- Hu, L. and Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, *Structural Equation Modeling*, 6(1), 1-55.
- Hunton, J.E. and Rose, J.M. (2011). Effects of anonymous whistle-blowing and perceived reputation threats on investigations of whistle-blowing allegations by audit committee members. *Journal of Management Studies*, 48(1), 75 – 98.
- Hunton, J.E., Wier, B., and Stone, D.N. (2000). Succeeding in managerial accounting. Part 2: A structural equations analysis. *Accounting, Organizations and Society*, 25(8), 751-762.
- Jackling, B., Cooper, B. J., Leung, P., and Dellaportas, S. (2007). Professional accounting bodies' perceptions of ethical issues, causes of ethical failure and ethics education. *Managerial Auditing Journal*, 22(9), 928-944.
- Jecker, N. S. (2007). The role of standpoint in justice theory. *The Journal of Value Inquiry*, 41, 165 – 182.
- Jeffrey, C. (1993) Ethical development of accounting students, non-accounting business students, and liberal arts students. *Issues in Accounting Education*, 8(1), 86 – 96.
- John, O. P., Donahue, E. M., and Kentle, R. L. (1991). The big five inventory—versions 4a and 54. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- John, O. P., Naumann, L. P. , and. Soto, J. (2008) Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, and L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). New York, NY: Guilford Press.
- Jones, T.M. (1991). Ethical decision making by individuals in organizations: An issue-contingent model. *Academy of Management Review*, 16(2), 366 – 395.
- Joreskog, K. and Sorbom, D. (2005). *LISREL 8.72: User's reference guide*. Chicago, IL: Scientific Software International, Inc.
- Kaplan, S.E., Pope, K.R., and Samuels, J.A. (2010). The effect of social confrontation on individuals' intentions to internally report fraud. *Behavioral Research in Accounting*, 22(2), 51-67.
- Keenan, J. P. (2000). Blowing the whistle on less serious forms of fraud: A study of executives and managers. *Employee Responsibilities and Rights Journal*, 12(4), 199-217.
- Kempthorne, O. (1978). Logical, epistemological and statistical aspects of nature-nurture data interpretation. *Biometrics*, 34, 1-23.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

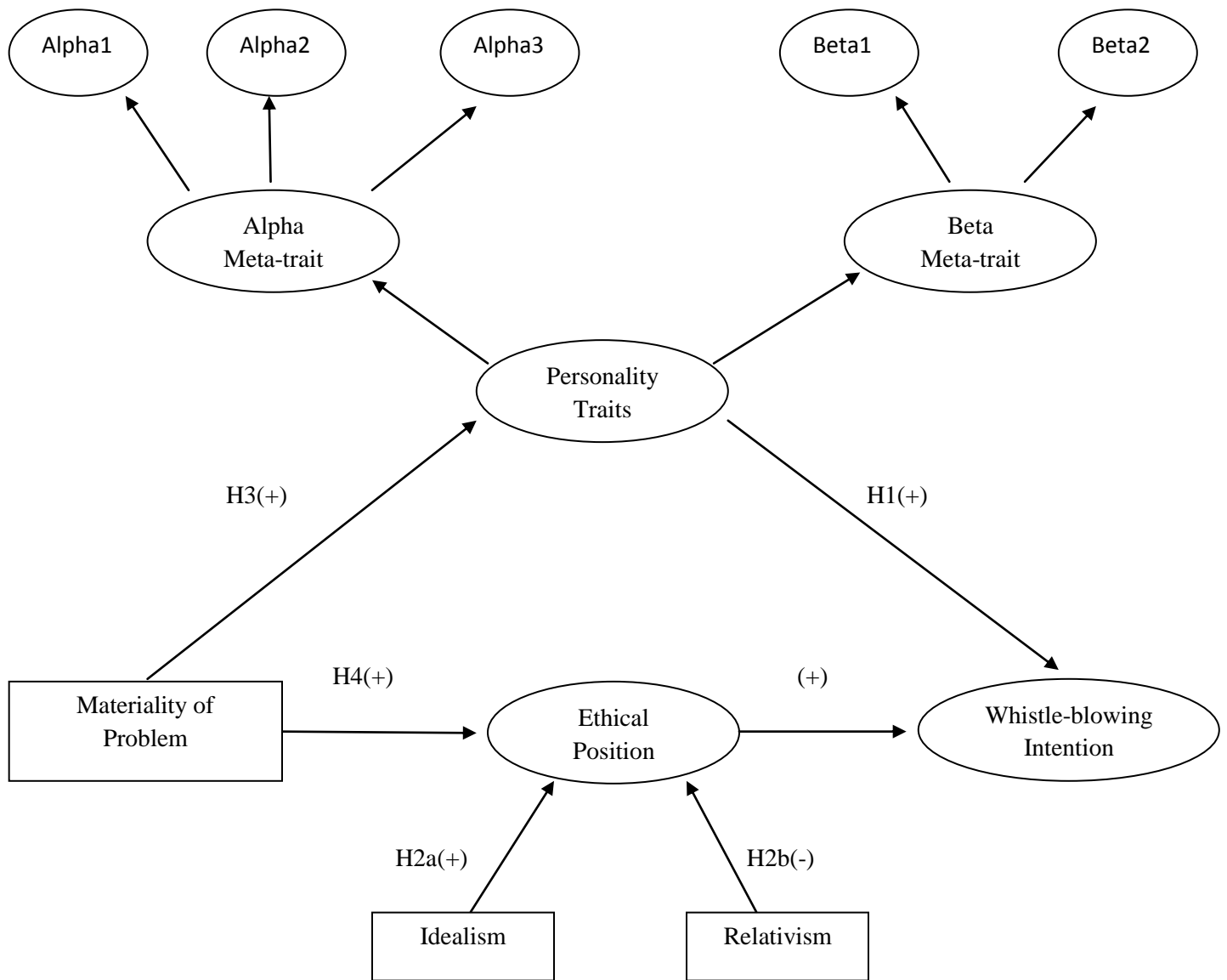
- Kohler, E. L. (1970). *A Dictionary for Accountants*. Englewood Cliffs: Prentice-Hall.
- Laidra, K., Pullmann, H., and Allik, J. (2006). Personality and intelligence as predictors of academic achievement. *Personality and Individual Differences*, 42(3), 441 – 451.
- Libby, R., Bloomfield, R., and Nelson M.W. (2002). Experimental research in financial accounting. *Accounting, Organizations and Society*. 27(8), 775-810.
- Lipe, M.G. (1998). Individual investors' risk judgments and investment decisions: The impact of accounting and market data. *Accounting, Organizations and Society*, 23(7), 625-640.
- Liyanarachchi, G., and Newdick, C. (2009). The impact of moral reasoning and retaliation on whistle-blowing: New Zealand evidence. *Journal of Business Ethics*, 89(1), 37-57.
- Loeb, Stephen E. (1990). Whistleblowing and accounting education. *Issues in Accounting Education*, 5, p. 281-294.
- MacCallum, R.C. and Austin, J.T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, 51, 201-226.
- MacCann, C., Duckworth, A. L., and Roberts, R. D. (2009). Empirical identification of the major facets of conscientiousness. *Learning and Individual Differences*, doi:10.1016/j.lindif.2009.03.007
- Maines, L.A. and Hand, J.R.M. (1996). Individuals' perceptions and misperceptions of time series properties of quarterly earnings. *The Accounting Review*, 71(3), 317-336.
- Maines, L.A. and McDaniel, L.S. (2000). Effects of comprehensive-income characteristics on nonprofessional investors' judgments: The role of financial-statement presentation format. *The Accounting Review*, 75(2), 179-207.
- Mardia, K. V. 1970. Measures of Multivariate Skewness and Kurtosis with Applications. *Biometrika*, 57 (3), 519 – 530.
- Marshall, R., Smith, M., and Armstrong, R. (2006). The impact of audit risk, materiality, and severity on ethical decision making: An analysis of the perceptions of tax agents in Australia. *Managerial Auditing Journal*, 21(5), 497 – 519.
- McDevitt, R. and Van Hise, J. (2002). Influences in ethical dilemmas of increasing intensity. *Journal of Business Ethics*, 40(3), 261-274.
- McRae, R. R. and John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality and Social Psychology*, 60(2), 175-215.

- Miceli, M. P., and Near, J. P. (1988). Individual and situational correlates of whistle-blowing. *Personnel Psychology*, 41(2), 267-281.
- Miller, J. D., and Lynam, D.R. (2003). Psychopathy and the five-factor model of personality: A replication and extension. *Journal of Personality Assessment* 81(2), 168-178.
- Moberly, R. E. (2006). Sarbanes-Oxley's structural model to encourage corporate whistleblowers. *Brigham Young University Law Review*, 2006(5), 1107-1180.
- Morris, E.W. and Milliken, F.J. (2000). Organizational Silence: A barrier to change and development in a pluralistic world. *The Academy of Management Review*, 4, 706-725.
- Near, J.P., Dworkin, T.M., and Miceli, M.P. (1993). Explaining the whistle-blowing process: Suggestions from power theory and justice theory. *Organization Science*, 4(3), 393-411.
- Near, J. P., and Jensen, T. C. (1983). The whistleblowing process: retaliation and perceived effectiveness. *Work and Occupations*, 10(1), 3-28.
- Near, J. P., and Miceli, M. P. (1985). Organizational dissidence: The case of whistle-blowing. *Journal of Business Ethics*, 4(1), 1-16.
- . (1996). Whistle-blowing: Myth and reality. *Journal of Management*, 22(3), 507-526.
- Near, J. P., Rehg, M. T., Van Scotter, J. R., and Miceli, M.P. (2004). Does type of wrongdoing affect the whistle-blowing process? *Business Ethics Quarterly*, 14(2), 219-242.
- Newman, J. P., Kosson, D. S., and Patterson, C.M. (1992). Delay of gratification in psychopathic and nonpsychopathic offenders. *Journal of Abnormal Psychology*, 101(4), 630-636.
- Norman, W.T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal Social Psychology*, 66(1), 574-583.
- Nunnally, J. (1978). *Psychometric Theory*. New York, McGraw Hill.
- Paunonen, S. V., and Ashton, M. C. (2001). Big five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology*, 81(3), 524-539.
- Pedhazur, E.J. and L. P. Schmelkin. (1991). *Measurement design and analysis: An integrated approach*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Pearl, J. (2000) *Causality: Models, reasoning, and inference*. New York: Cambridge University Press.
- Piedmont, R. L., McCrae, R. R., and Costa, P. T. (1991). Adjective check list scales and the five-factor model. *Journal of Personality and Social Psychology*, 60(4), 630-637.

- PricewaterhouseCoopers. 2008. *Economic crime: People, culture and controls: The 4th biennial global economic crime survey 2007*. [cited September 24, 2011]. Available from pwc.com/crimesurvey.
- Reckers-Saucius, A.K. and Lowe, D. J. (2010). The influence of dispositional affect on whistleblowing. *Advances in Accounting, incorporating Advances in International Accounting*, 26(2), 259 – 269.
- Ro, B. T. (1982). An analytical approach to accounting materiality. *Journal of Business Finance and Accounting*, 9(3), 397-412.
- Rokeach, M. (1972). *Beliefs, attitudes, and values: A theory of organization and change*. San Francisco: Jossey-Bass.
- Salgado, J. F. (2002). The big five personality dimensions and counterproductive behaviors. *International Journal of Selection and Assessment*, 10(1), 117-125.
- Satorra, A., Bentler, P.M., von Eye, A., and Clogg, C.C. (1994). *Corrections to Test Statistics and Standard Errors in Covariance Structure Analysis. In Latent Variables Analysis: Applications for Developmental Research*. Thousand Oaks, CA US: Sage Publications, Inc, 399-419.
- Shadish, W.R., Cook, T.D., and Campbell, D.T. (2002) *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin Company.
- Shawver, T. J. and Clements, L. H. (2007). The intention of accounting students to whistle-blow in situations of questionable ethical dilemmas. *Research on Professional Responsibility and Ethics in Accounting*, 11, 177-191.
- Siefert, D. L., Sweeney, J. T., Joireman, J., and Thornton, J. M. (2010). The influence of organizational justice on accountant whistleblowing. *Accounting, Organizations and Society* 35(7), 707-717.
- Smith, M. (2003). *Research methods in accounting*. London: Sage Publications.
- Sobel, M. E. (1987). Direct and indirect effects in linear structural equation models. *Sociological Methods and Research*, 16(1), 155-176.
- Solomon, D. (2001). Conducting web-based surveys. *Practical Assessment, Research & Evaluation*, 7(19). Retrieved on January 23, 2011 from <http://PAREonline.net/getvn.asp?v=7&n=19>.
- Taylor, E.Z. and Curtis, M.B. (2010). An examination of the layers of workplace influences in ethical judgments: Whistleblowing likelihood and perseverance in public accounting. *Journal of Business Ethics*, 93(1), 21 – 37

- Trevino, L.K. and Bart, V. (1992). Peer reporting of unethical behavior: A social context perspective. *Academy of Management Journal*, 35(1), 38-55.
- Williams, L., Ford, L., and Nguyen, N. (2002). Basic and advanced measurement models for confirmatory factor analysis. In S. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology*, 366-389. Malden, MA, Blackwell.

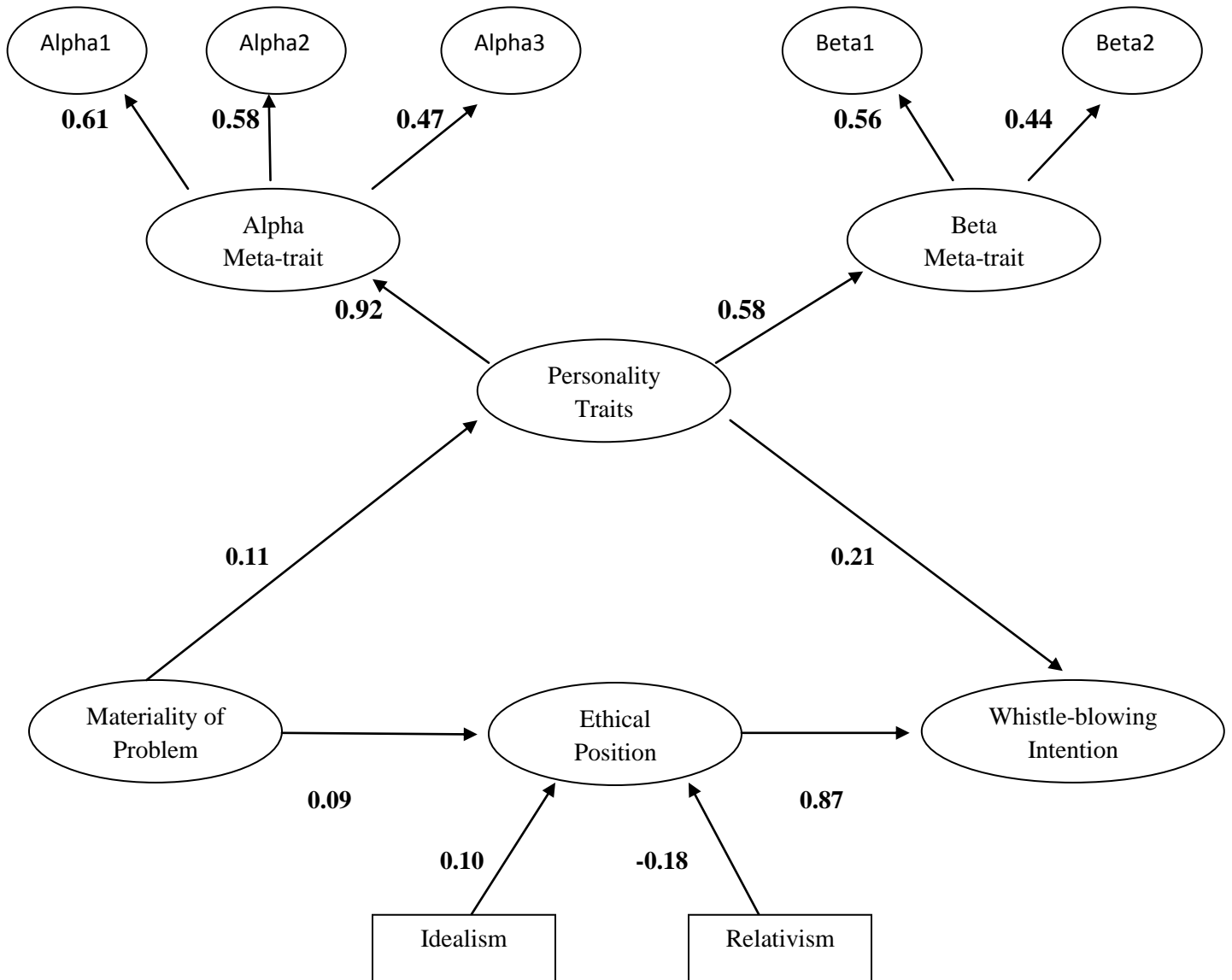
Figure 1
Theoretical Model



Alpha1 = Conscientiousness
Alpha2 = Agreeableness
Alpha3 = Neuroticism

Beta1 = Extroversion
Beta2 = Openness

Figure 2
Structural Equation Model Results



Alpha1 = Conscientiousness
Alpha2 = Agreeableness
Alpha3 = Neuroticism

Beta1 = Extroversion
Beta2 = Openness

Table 1
Panel A - Participant Gender

Male Participants	49.2%
Female Participants	50.8%

Panel B - Participant Age

Mean Participant Age	26.11 Years
Low Participant Age	19 Years
High Participant Age	57 Years

Panel C - Participant Class Standing

Sophomore	2.6%
Junior	37.2%
Senior	36.6%
Graduate Student	17.3%
No Response	6.3%
Total	100.0%

Table 2
Panel A - Participant Grade Point Average

3.75 – 4.00 GPA	0.28%
3.50 – 3.74 GPA	2.27%
3.25 – 3.49 GPA	4.83%
3.00 – 3.24 GPA	7.67%
2.75 – 2.99 GPA	13.92%
2.50 – 2.74 GPA	17.05%
2.25 – 2.49 GPA	15.63%
2.00 – 2.24 GPA	16.76%
Under 2.0 GPA	15.91%
No Response	5.68%
Total	100.00%

Panel B – Participant Major Course of Study

Graduate Accounting	1.70%
Undergraduate / Certificate Accounting	84.38%
Undergraduate Accounting and Another Subject	5.11%
Other Business Major	2.84%
Non-Business Major	0.00%
No Response	5.97%
Total	100.00%

Table 3
Reliability and Correlations Matrix
(2-tailed Significance is in parentheses)

	Extroversion Beta	Conscientiousness Alpha	Neuroticism Alpha	Openness Beta	Agreeableness Alpha	Idealism	Relativism
Extroversion Beta	0.852	0.234** (0.000)	0.310** (0.000)	0.297** (0.000)	0.162** (0.002)	0.078 (0.145)	-0.080 (0.135)
Conscientiousness Alpha	0.237** (0.000)	0.815	0.290** (0.000)	0.282** (0.000)	0.378** (0.000)	0.253** (0.000)	-0.147** (0.006)
Neuroticism Alpha	0.315** (0.000)	0.321** (0.000)	0.821	0.120* (0.024)	0.189** (0.000)	0.086 (0.105)	-0.087 (0.102)
Openness Beta	0.252** (0.000)	0.357** (0.000)	0.080 (0.133)	0.759	0.364** (0.000)	0.229** (0.000)	0.069 (0.198)
Agreeableness Alpha	0.124* (0.020)	0.424** (0.000)	0.143** (0.007)	0.563** (0.000)	0.772	0.433** (0.000)	0.074 (0.168)
Idealism	0.092 (0.084)	0.257** (0.000)	0.044 (0.416)	0.239** (0.000)	0.358** (0.000)	0.845	0.058 (0.279)
Relativism	-0.059 (0.270)	-0.147** (0.006)	-0.071 (0.186)	0.123* (0.021)	0.170** (0.001)	0.037 (0.486)	.790

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

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

Note: Amounts on the diagonal represent Cronbach's alpha reliability coefficients (in **bold**). Amounts on the upper side of the diagonal represent Spearman coefficients; amounts on the lower side represent Pearson coefficients.

Table 4
Model Fit Indices

	Acceptable Fit Standard	Measurement Model
Statistical Test		
Chi-Square		74.138
Df		19.00
Chi-Square / df	<2.0	3.902
Fit Indices		
Comparative Fit Index (CFI)	>0.90	0.841
Bentler-Bonett Normed Fit Index (NFI)	>0.90	0.842
Bentler-Bonett Non-Normed Fit Index (NNFI)	>0.90	0.585
Goodness of Fit Index (GFI)	>0.90	0.951
Bollen's Incremental Fit Index (IFI)	>0.90	0.795
Adjusted Goodness of Fit Index (AGFI)	>0.90	0.885
Root Mean Square Error of Approximation (RMSEA)	<0.08	0.058
Average Absolute Standardized Residuals (AASR)	<0.05	0.064
Standardized Root Mean Square Residuals (SRMR)	<0.05	0.0455

Table 5
Test Results of Model Paths

Hypothesized Model Paths	Expected Relation Sign	Observed Relation Sign	Path Coefficients	p-values
PT→ WB	+	+	0.21	0.047
ID→ EP	+	+	0.10	0.042
REL→ EP	—	—	-0.18	0.033
EP→ WB	+	+	0.87	0.076
MAT→ PT	+	+	0.11	0.030
MAT→ EP	+	+	0.09	0.060

PT = Personality Traits

WB = Whistle-Blowing Intentions

ID = Idealism

EP = Ethical Position

REL = Relativism

MAT =Materiality of the Problem

APPENDIX 1

The Impact of Personality Traits and Ethical Position on Whistle-Blowing

With researchers Dr. Ben Wier and Bryan Menk

The purpose of this study is to examine the impact of an individual's personality traits and ethical position on the likelihood to engage in whistle-blowing activities. We wish to determine if these factors are important in determining the intentions and actions of an individual making an accounting decision.

You will be asked to read a scenario and determine your individual course of action. You will also be asked to complete a personality traits and ethical position survey. This survey should take approximately 20 minutes to complete. All information will be completely anonymous, so please answer each question truthfully. You are free to withdraw from this study at any time, without penalty.

This study is not intended to reward or provide benefit to any individual, but your participation may be of value to expanding accounting knowledge.

Your anonymity will be maintained during the data collection, analysis, and any publications or presentations of the results. No individual information will be collected or maintained which could serve to identify the individuals who participated in this study.

The Virginia Commonwealth University Institutional Review Board has approved the survey instrument and the procedures of this study.

If you have any questions about this study, you should feel free to ask them now or anytime throughout the study by contacting either Bryan Menk (menkbb@vcu.edu or (804) 516 9485) or Dr. Ben Wier (bwier@vcu.edu or (804) 828 7162).

APPENDIX 2A

PART I: Please read the following information and then answer the related questions. There is no right or wrong answers; we are interested in your decision as well as your opinions.

You are employed by Star Corporation a staff accountant. The company generates revenue by selling computer technology and advertising. The industry is growing and the company is doing well financially with annual revenues of approximately **\$5,000,000 (Five Million Dollars)**. You report to the Accounting Senior, who reports to the Accounting Manager and the Accounting Manager reports to the CFO.

Your job responsibilities include recording revenues earned from sales. In March, you discovered an entry in the general ledger for **\$500,000 (Five Hundred Thousand Dollars)** of sales revenue that you did not record and were not aware of the transaction. You investigated the entry and found that it was input by the Accounting Manager. When you asked about the entry, the Accounting Manager responded that he recorded it for a contract with Apple Computers that was in negotiation, and that the revenue was necessary to meet the expected income for the quarter. The Accounting Manager also told you that the contract would be completed and the cash collected soon.

It is now September and you have still not received the contract. You recently asked the Accounting Manager about the situation and were told that the contract negotiation had failed. The contract and the revenue were cancelled. The Accounting Manager said that he will reverse the entry in the fourth quarter, when sales are estimated to be at their highest. You are considering whether to report the actions of the Accounting Manager to the CFO.

Please indicate the likelihood that you will report the actions of the Accounting Manager to the CFO.

Please circle the number below that matches your intentions.

**Highly
Unlikely
1**

**Unlikely
2**

**Neither Likely
nor Unlikely
3**

**Likely
4**

**Highly
Likely
5**

APPENDIX 2B

PART I: Please read the following information and then answer the related questions. There is no right or wrong answers; we are interested in your decision as well as your opinions.

You are employed by Star Corporation a staff accountant. The company generates revenue by selling computer technology and advertising. The industry is growing and the company is doing well financially with annual revenues of approximately **\$5,000,000 (Five Million Dollars)**. You report to the Accounting Senior, who reports to the Accounting Manager and the Accounting Manager reports to the CFO.

Your job responsibilities include recording revenues earned from sales. In March, you discovered an entry in the general ledger for **\$50,000 (Fifty Thousand Dollars)** of sales revenue that you did not record and were not aware of the transaction. You investigated the entry and found that it was input by the Accounting Manager. When you asked about the entry, the Accounting Manager responded that he recorded it for a contract with Apple Computers that was in negotiation, and that the revenue was necessary to meet the expected income for the quarter. The Accounting Manager also told you that the contract would be completed and the cash collected soon.

It is now September and you have still not received the contract. You recently asked the Accounting Manager about the situation and were told that the contract negotiation had failed. The contract and the revenue were cancelled. The Accounting Manager said that he will reverse the entry in the fourth quarter, when sales are estimated to be at their highest. You are considering whether to report the actions of the Accounting Manager to the CFO.

Please indicate the likelihood that you will report the actions of the Accounting Manager to the CFO.

Please circle the number below that matches your intentions.

**Highly
Unlikely
1**

**Unlikely
2**

**Neither Likely
nor Unlikely
3**

**Likely
4**

**Highly
Likely
5**

APPENDIX 3

PART II: Here are a number of descriptions of characteristics that may or may not apply to you. Please indicate the extent to which you agree or disagree with that description.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I am someone who is talkative.	1	2	3	4	5
2. I am someone who tends to find fault with others.	1	2	3	4	5
3. I am someone who does a thorough job.	1	2	3	4	5
4. I am someone who is depressed, blue.	1	2	3	4	5
5. I am someone who is original, comes up with new ideas.	1	2	3	4	5
6. I am someone who is reserved.	1	2	3	4	5
7. I am someone who is helpful and unselfish with others.	1	2	3	4	5
8. I am someone who can be somewhat careless.	1	2	3	4	5
9. I am someone who is relaxed, handles stress well.	1	2	3	4	5
10. I am someone who is curious about many different things.	1	2	3	4	5
11. I am someone who is full of energy.	1	2	3	4	5
12. I am someone who starts quarrels with others.	1	2	3	4	5
13. I am someone who is a reliable worker.	1	2	3	4	5
14. I am someone who can be tense.	1	2	3	4	5
15. I am someone who is ingenious, a deep thinker.	1	2	3	4	5
16. I am someone who generates a lot of enthusiasm.	1	2	3	4	5

17. I am someone who has a forgiving nature.	1	2	3	4	5
18. I am someone who tends to be disorganized.	1	2	3	4	5
19. I am someone who worries a lot.	1	2	3	4	5
20. I am someone who has an active imagination.	1	2	3	4	5
21. I am someone who tends to be quiet.	1	2	3	4	5
22. I am someone who is generally trusting.	1	2	3	4	5
23. I am someone who tends to be lazy.	1	2	3	4	5
24. I am someone who is emotionally stable, not easily upset.	1	2	3	4	5
25. I am someone who is inventive.	1	2	3	4	5
26. I am someone who has an assertive personality.	1	2	3	4	5
27. I am someone who can be cold and aloof.	1	2	3	4	5
28. I am someone who perseveres until the task is finished.	1	2	3	4	5
29. I am someone who can be moody.	1	2	3	4	5
30. I am someone who values artistic, aesthetic experiences.	1	2	3	4	5
31. I am someone who is sometimes shy, inhibited.	1	2	3	4	5
32. I am someone who is considerate and kind to almost everyone.	1	2	3	4	5
33. I am someone who does things efficiently.	1	2	3	4	5
34. I am someone who remains calm in tense situations.	1	2	3	4	5

35. I am someone who prefers that work is routine.	1	2	3	4	5
36. I am someone who is outgoing, sociable.	1	2	3	4	5
37. I am someone who is sometimes rude to others.	1	2	3	4	5
38. I am someone who makes plans and follows through with them.	1	2	3	4	5
39. I am someone who gets nervous.	1	2	3	4	5
40. I am someone who likes to reflect, play with ideas.	1	2	3	4	5
41. I am someone who has few artistic interests.	1	2	3	4	5
42. I am someone who likes to cooperate with others.	1	2	3	4	5
43. I am someone who is easily distracted.	1	2	3	4	5
44. I am someone who is sophisticated in art, music, or literature.	1	2	3	4	5

APPENDIX 4

PART III: Please indicate if you agree or disagree with the following items. Each represents a commonly held opinion and there is no right or wrong answers. Please rate your reaction to each statement by circling the number that best represents your opinion of each statement.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. People should make certain that their actions never intentionally harm another even to a small degree.	1	2	3	4	5
2. Risks to another should be never be tolerated, irrespective of how small the risks might be.	1	2	3	4	5
3. The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.	1	2	3	4	5
4. One should never psychologically or physically harm another person.	1	2	3	4	5
5. One should not perform an action which might in any way threaten the dignity and welfare of another individual.	1	2	3	4	5
6. If an action could harm an innocent other, then it should not be done.	1	2	3	4	5
7. Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences is immoral.	1	2	3	4	5
8. The dignity and welfare of the people should be the most important concern in any society.	1	2	3	4	5
9. It is never necessary to sacrifice the welfare of others.	1	2	3	4	5

10. Moral behaviors are actions that closely match ideals of the most “perfect” action.	1	2	3	4	5
11. There are no ethical principles that are so important that they should be a part of any code of ethics.	1	2	3	4	5
12. What is ethical varies from one situation and society to another.	1	2	3	4	5
13. Moral standards should be seen as individualistic; what one person considers to be moral may be judged to be immoral by another person.	1	2	3	4	5
14. Different types of morality cannot be compared as to “rightness”.	1	2	3	4	5
15. Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.	1	2	3	4	5
16. Moral standards are simply personal rules that indicate how a person should behave, and are not to be applied in making judgments of others.	1	2	3	4	5
17. Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.	1	2	3	4	5
18. Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustments.	1	2	3	4	5
19. No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends on the situation.	1	2	3	4	5

20. Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.	1	2	3	4	5
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APPENDIX 5

PART IV: Demographics

1. In which year were you born? _____
2. In the scenario you just read, was the contract with Apple Computers important to the success of Star Corporation? Important / Not Important
3. Please circle your gender: Male / Female
4. In the scenario you just read, was the contract with Apple Computers to be completed? Yes / No
5. Please circle the closest estimate of your cumulative GPA:
 - i. 3.75 – 4.00
 - ii. 3.50 – 3.74
 - iii. 3.25 – 3.49
 - iv. 3.00 – 3.24
 - v. 2.75 – 2.99
 - vi. 2.50 – 2.74
 - vii. 2.25 – 2.49
 - viii. 2.00 – 2.24
 - ix. Under 2.00
6. What is your major? _____
7. In the scenario you just read, to whom did you report? Accounting Manager, CFO, Accounting Senior
8. Please circle your class standing? Freshman / Sophomore / Junior / Senior / Certificate