

Ethical Decision Making in the Public Accounting Profession: An Extension of Ajzen's Theory of Planned Behavior

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ABSTRACT. The purpose of this study is to expand our understanding of the factors that influence ethical behavioral intentions of public accountants. Recent scandals have dominated the news and have caused legislators, regulators and the public to question the role of the accounting profession. Legislative changes have brought about major structural changes in the profession and continued scrutiny will surely lead to further changes. Thus, developing an understanding of the personal and contextual factors that influence ethical decisions is critical. An extension of the theory of planned behavior [Ajzen, I.: 1985, *Action Control-From Cognition to Behavior* (Springer, Heidelberg)], the model used in this study examined the influence of personal, social and organizational factors on ethical intentions. Specifically, the individual level model tested direct effects of attitudes, subjective norms, perceived behavioral control, moral sensitivity and ethical climate. Professionals from five accounting firms completed a survey that measured responses to ethical dilemmas related to the public accounting domain. To minimize the potential impact of common method bias, the survey instrument was administered in two phases. Hypotheses were evaluated using a structural modeling technique, partial least squares. Results show strong support for a direct relationship between attitudes and ethical intentions. The proposed direct effect of subjective norms was not supported. However, a significant relationship between subjective norms and attitudes was found. Professionals' attitudes towards ethical issues clearly influence intentions. Moreover, this study illustrates the potential influence of social factors in attitude formation. Future re-

search should explore the factors in the public accounting domain that most strongly influence attitude formation. This study suggests that the theory of reasoned action offers a useful framework for exploring these issues.

KEY WORDS: public accountants' ethics, reasoned action, ethical behavioral intentions, ethical climate, ethical sensitivity, partial least squares, PLS, common methods bias, planned behavior.

Introduction

Louwers et al. (1997), in their extensive review of the literature examining accountants' behavior, suggest that ethics research should continue along two dimensions: "(1) the continued integration of different cognitive models within Rest's (1986) ethical decision-making model and (2) the development of a model specific to the accounting profession" (p. 209). The purpose of this study is to test a model that is easily adapted to the accounting profession. The theory of planned behavior (Ajzen, 1985), an extension of the theory of reasoned action (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975), provides a framework for expanding our understanding of the factors that influence public accountants' ethical behavioral intentions.

Ethics research in accounting is a relatively recent phenomenon. The most widely explored paradigm is based on Kohlberg's (1969) stage theory of moral development. According to the theory, individuals progress sequentially through a three-level hierarchy; each level is divided into two stages. A number of studies have investigated the levels of moral reasoning of both accounting students and practitioners (e.g., Armstrong, 1987; Ponemon, 1990; Ponemon and Glazer, 1990). Generally, the levels of these

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groups are found to be lower than those of other referent groups. Thus, scholars have suggested appropriate intervention to raise levels of moral reasoning. Of course, this implies that professionals reasoning at higher levels act in accordance with more appropriate ethical judgments.

A limited number of accounting studies have investigated the relationship between level of moral reasoning and behavior; however, they are relatively narrow in scope (e.g., Ponemon, 1992; Ponemon and Gabhart, 1990). Others suggest that Kohlberg's theory, as extended and operationalized by Rest and his colleagues (Rest, 1986; Rest et al., 1999), does not provide an adequate explanation of behavior. For example, Trevino (1986) proposed an interactionist model which uses cognitive moral development as its framework, but also incorporates certain personality traits, organization culture and other contextual variables. Empirical testing of this relatively complex model has been limited. Reiter (1998) also raises a number of questions about the current state of the accounting ethics research program and suggests adopting several of the strategies used by those engaged in general business ethics research. She concludes: "accounting researchers must stop demanding a simplicity and stability that does not seem to be there" (p. 27).

The ability to observe behavior in the public accounting domain is limited. The purpose of this study is to offer an alternative approach based on Ajzen's theory of planned behavior that extends the work of Gibson and Frakes (1997) in the public accounting domain. Based on a significant body of research in other domains, behavioral intentions arguably serve as a proxy for behavior. The second section of this paper develops the proposed research model and theoretical justification for the hypotheses tested. The third section outlines the research methods and the fourth section discusses data analysis and results. Conclusions and suggestions for future research are set forth in the final section.

Research model and development of hypotheses

Theory of reasoned action-overview

The theory of reasoned action (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) offers a

relatively parsimonious explanation of behavior. Simply, it is based on one's intention (motivation) to engage in the behavior; the stronger the intention, the greater the likelihood of engaging in the behavior. According to Ajzen and Fishbein (1980): "intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are willing to exert in order to perform the behavior" (p. 181).

The intention to engage in a particular behavior is based on attitudes toward the behavior as well as subjective norms. If a person expects a positive outcome and feels that important others would encourage such behavior, positive intentions are likely to result. Attitude formation is based on Fishbein and Ajzen's (1975) expectancy-value model. Beliefs about a particular behavior contribute to the development of an overall attitude towards the performance of a particular act. Multiple beliefs may be pertinent and each is associated with an expected outcome from engaging in the performance of the behavior. Outcomes can be positive or negative and attitude is the sum of the salient beliefs weighted by expected outcomes.

According to the theory, subjective norms also directly influence intentions. Beliefs about whether important others would support the behavior determines the motivation to act. Important referents could be individuals or groups and undoubtedly vary depending on the context. Such beliefs are referred to as "normative beliefs" and the desire to comply varies for each referent. Thus, the subjective norm is equal to the sum of the strength of each normative belief times the motivation to comply.

Intention is the immediate antecedent of behavior, which is assumed to be under volitional control. Ajzen (1985) points out that a number of factors can influence the relationship between intention and behavior. For example, the passage of time can clearly have a profound influence and the salience of beliefs may be altered as new information becomes available. Arguably, the level of commitment, confidence and motivation to perform an act may also mitigate the influence of new information (p. 18).

Theory of planned behavior – an extension of the theory of reasoned action

As mentioned, the theory of reasoned action is restricted to behaviors under volitional control, thereby severely restricting the range of behaviors to which the theory could be applied. Fishbein and Ajzen (1975) considered behaviors that could be performed (or not performed) at will to be completely under volitional control. Ajzen (1985) introduced the theory of planned behavior to address this deficiency noting: “every intended behavior is a goal where attainment is subject to some degree of uncertainty.” (p. 24) Examples identified that may influence the degree of control include: having the necessary skills and ability, requisite information, resources, power of will and strength of character. Ajzen and Madden (1986) point out that even the most mundane activities are subject to some degree of control. Clearly, the theory of reasoned action was developed to deal with those behaviors that were at the lower end of the behavioral continuum. For example, the act of reading a book or taking a diet pill poses few obstacles and would be considered under volitional control for purposes of applying the theory.

Perceived behavioral control was added to the theory to deal with the factors that may serve as obstacles/opportunities to achieving the desired outcome. Ajzen and Madden (1986) consider it as: “the person’s belief as to how easy or difficult performance of the behavior is likely to be” (p. 457) Beliefs about the availability and opportunity to effectively utilize resources determines the level of perceived behavioral control.

Figure 1 is a graphic representation of the theory of planned behavior. The model shows both a direct and indirect effect on behavior. Madden et al. (1992) point out that perceived behavioral control will influence motivation (intentions) to engage in behavior. For example, positive attitudes and social norms may be insufficient to overcome perceptions of complete lack of control over the behavior. The indirect path suggests that people may have positive attitudes towards a behavior, but also believe that they have little control, thereby suggesting lack of motivation to engage in the behavior. The direct path relates to actual behavioral control. The authors suggest that it will be significant when: “the behavior in question is likely to have some aspect not under volitional control and perceptions of control over the behavior are accurate” (p. 4).

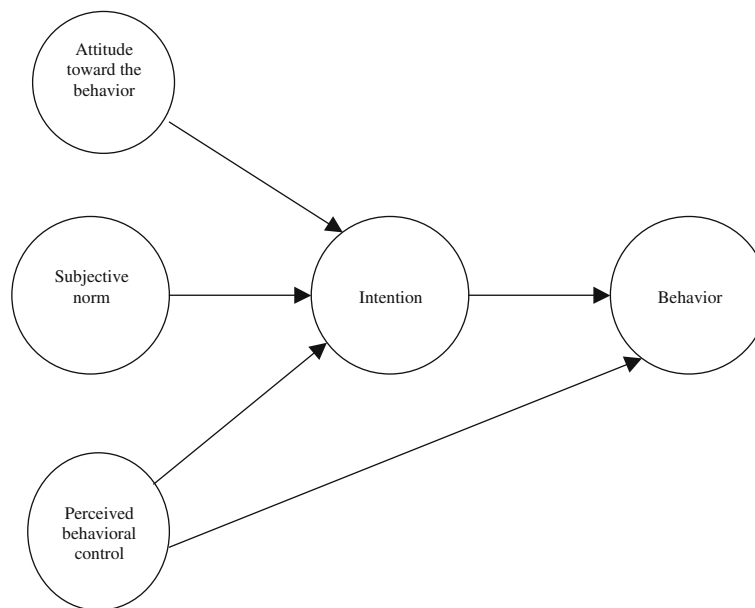


Figure 1. The theory of planned behavior adapted from Ajzen (1991). *Note:* Antecedents to attitudes, subjective norms & behavioral control omitted.

Integration of the theory of planned behavior, moral sensitivity and ethical climate

Theory of planned behavior

Sheppard et al.'s (1988) extensive meta-analysis of the theory of reasoned action provided strong evidence of the relationship between attitude, subjective norms and behavioral intentions for behaviors under volitional control. Results of studies applying the theory of planned behavior generally show support for the addition of the perceived behavioral control construct (see Ajzen's, 1991 summary of 16 studies).

The theory of planned behavior (Ajzen, 1991) offers a framework for expanding our understanding of the factors that influence ethical intentions of public accounting professionals. While the application of the theory to the moral domain is not yet well tested, studies in the general business context (e.g., Chang, 1998; Dubinsky and Loken, 1989; Flannery and May, 2000; Kurland, 1996; Loch and Conger, 1996; Randall and Gibson, 1991) and in an accounting context (e.g., Gibson and Frakes, 1997) provide empirical support and suggest further investigation is appropriate. The proposed model suggests direct effects at the individual level of analysis. Because of the obvious difficulties associated with observing unethical behavior in the workplace, the dependent variable is ethical intentions rather than behavior.

The foregoing leads to the following hypotheses:

- H-1:* Public accountants' attitudes will positively predict ethical intentions
- H-2:* Public accountants' subjective norm will positively predict ethical intentions
- H-3:* Public accountants' perceived behavioral control will positively predict ethical intentions

Integration of moral sensitivity and the theory of planned behavior

There is growing empirical support (e.g., Beck and Ajzen, 1991) for the addition of a moral

norms construct to increase the power of the theory of planned behavior to predict and explain ethical behavior. Fishbein and Ajzen (1975) anticipated the potential contribution of moral norms in developing the theory of reasoned action, but the construct was eliminated in the final version of the model. Recently, several studies have considered whether moral norms operate independently of attitudes, subjective norms and perceived behavioral control or are subsumed therein. Ajzen (1991) argues that moral norms may add explanatory power, and Conner and Armitage (1998) suggest: "moral norms should have an important influence on the performance of those behaviors with a moral or ethical dimension, and work in parallel with attitudes, subjective norms, and perceived behavioral control" (p. 1441). Measurement of the construct varies, but generally is based on responses to one item scales which pose questions such as: "It would be morally wrong for me to_____."

The purpose of the theory is to not only to predict, but also to explain and expand the nomological network. Integration of moral sensitivity as operationalized by the Multidimensional Ethics Scale (MES) should serve both objectives (Reidenbach and Robin, 1988, 1990). The MES assumes that individuals faced with ethical decisions reason in a relatively consistent manner. In the business domain, empirical support for this proposition has been mixed. However, recent accounting studies have found support for four dimensions: moral equity, relativism, utilitarianism and contractualism (Cohen et al., 1993, 1995a, 1995b, 1996, 2001; Cruz et al., 2000). Moreover, Cruz et al. concluded that moral equity explained the greatest percentage of variance and tax professionals reasoned in a somewhat consistent manner.

Empirical evidence to date suggests accountants may show relatively consistent patterns of reasoning across situations typically encountered in public practice. Thus, the MES may provide an appropriate measure of moral norms/obligations.

The foregoing leads to the following research hypothesis:

- H-4:* Moral sensitivity will positively predict ethical intentions of public accountants

Integration of ethical climate theory and the theory of planned behavior

Arguing that individual characteristics were insufficient to explain determinants of ethical decisions in an organizational context, Victor and Cullen (1988) developed the concept of ethical work climate. They defined this construct as: "the prevailing perception of typical organization practices and procedures that have ethical content" (p. 101). Theories of moral philosophy and sociology provided the foundation for development of a theoretical typology of ethical work climate.

The ethical criteria dimensions were based on three moral philosophies: egoism, benevolence and deontology which roughly correspond to the levels of cognitive moral development espoused by Lawrence Kohlberg. The authors were careful to point that ethical work climate is a group level phenomenon, whereas Kohlberg's (1969) theory is based on the processes used by individuals to arrive at moral judgments.

The second dimension of climate is based upon the referent group considered when making ethical judgments. Any one of the three ethical dimensions can operate at the individual, company or cosmopolitan (broad social) level (Victor and Cullen, 1987, 1988). The theorized 3×3 matrix suggests nine possible climate types; however, the authors found empirical support for only five dimensions which they labeled as: law and code, caring, instrumental, independence, and rules. They also found significant differences in perception of climate type both across and within firms. The Ethical Climate Questionnaire (ECQ) was the product of this initial study and is: "simply an instrument to tap, through perception of organization participants, the ethical dimensions of organization culture" (p. 103).

Victor and Cullen's (1987, 1988) development of the ECQ stimulated a significant amount of general business ethics research. However, efforts in the accounting area have been extremely limited. One notable exception is Flynn's (2001) study which examined the relationship between ethical work climate and corporate accountants' ethical judgments (using the MES). Flynn's research represents an important contribution for two reasons. First, it is one of the few studies to examine issues

pertinent to accountants in the private domain. Second, it represents an important initiative to move beyond individual cognition and consider contextual factors that undoubtedly influence ethical judgments.

Ethical climate theory as operationalized by Victor and Cullen (1988) offers an opportunity to expand our understanding of the factors that influence ethical intentions and behavior within the framework of the theory of planned behavior. Loch and Conger (1996) used the ECQ as a "substitute" measure for social norms, but the authors provide limited discussion of the theory and empirical support. Moreover, they offered no discussion of how decisions might vary depending on the nature of the ethical work climate.

Flannery and May (2000) considered ethical climate, but dealt only with the potential impact of perceptions of the instrumental dimension of ethical climate. This approach is consistent with Wimbush and Shepard's (1994) suggestion that the other climate types support ethical intentions. Thus, instrumental climates that emphasize individual self-interest and company interests above all others are most likely to foster unethical behavioral intentions. Wimbush et al.'s (1997a) empirical study found some support for this assertion.

Similar to Flannery and May's approach, the proposed model includes instrumental ethical climate as a separate construct that may capture certain information that is distinct from the subjective norms factor. The majority of behaviors studied using the theory of planned behavior did not take place within an organizational context. Thus, addition of this factor to measure accountants' perceptions of instrumental ethical climate is a logical extension of the theory. Other climate types were excluded for two reasons. First, the potential for participant fatigue increases. Second, other climates arguably support ethical behavior. Thus, perceptions of an instrumental climate type are most likely to support unethical behavior.

The foregoing leads to the following hypothesis:

- H-5: Instrumental Ethical Work Climate will negatively predict ethical intentions*

Conceptual model

Figure 2 is a graphic representation of the proposed conceptual model.

Method

Research design

This study has a nonexperimental cross-sectional design using a survey questionnaire. Construct measures have been used in a wide variety of previous research studies and have demonstrated acceptable levels of scale reliability and validity. Human subjects were required and the protocol was approved by the appropriate institutional review board.

Sample and procedure

Five public accounting firms operating primarily in one state and located in the Northeast US agreed to participate in this study. Access to professionals is often restricted and generally requires use of convenience samples. Even though the sample is non-probabilistic, subjects are representative of the domain of interest and the analysis of results considers the boundary conditions and other potential limitations. The extent of participation and the administration of the survey instrument varied among the firms.

Each firm agreed to administer the questionnaire in two phases. As discussed in the following section, this represents one way of mitigating the potential impact of common method bias. The objective was to administer phase II at least 2 weeks after the first administration. Four firms agreed to the required lag. The remaining firm administered phase I in the morning prior to a firm-wide meeting and phase II at the end of the meeting (late afternoon).

Phase I

Potential subjects received a letter inviting them to participate in the study. The letter adhered to guidelines established by the human subjects institutional review board, briefly described the study and offered assurance that responses were confidential and anonymity was guaranteed.

The survey included general instructions and also outlined a method for developing a code name that would not only help to guarantee anonymity, but also be used to match survey responses completed at different times. Each survey version was color coded and participants were instructed to complete a phase II survey coded with the same color. (Color coding was used to match different versions of the questionnaire). Participants were requested to return the survey in the stamped, self-addressed envelope provided.

Phase II

Participants received a packet of information that included a letter, general instructions and the survey instrument. The letter thanked subjects for participating in Phase I and encouraged continued participation. Instructions emphasized the importance of including the code name on the completed survey and to ensure that the color coding of the packet matched that of the first phase. Participants were

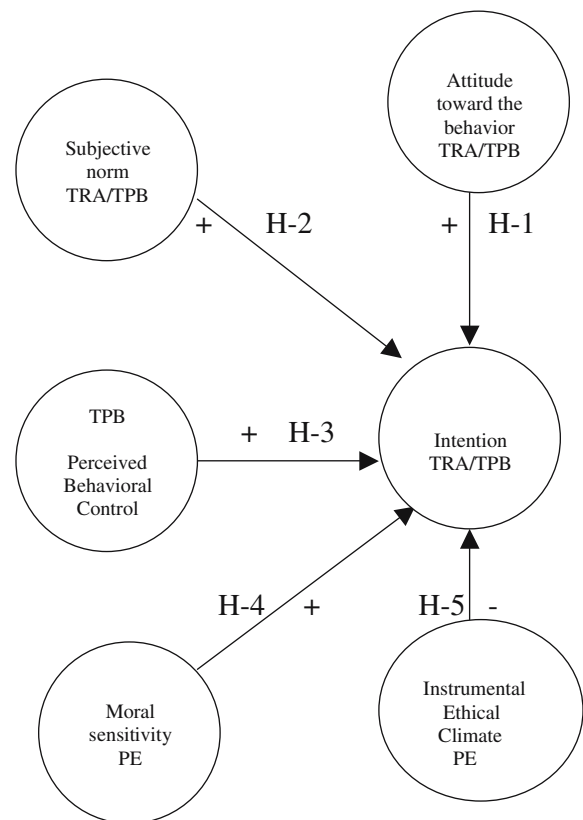


Figure 2. Proposed conceptual model. TRA – theory of reasoned action; TPB – theory of planned behavior; PME – proposed extension.

instructed to return the completed survey in the stamp self-addressed return envelope.

Response rate

Table I summarizes the survey packets distributed and received during each phase of the administration. The overall (matched) response rate was 65.6% resulting in a final sample size of 95 matched responses. Certainly, those willing to participate in phase I demonstrated commitment to the project as 85.5% of those subjects completed phase II. The response rate compares favorably to other ethics related studies (e.g., Kurland, 1996, 59%; Gibson and Frakes, 1997, 26.7%; Randall and Gibson, 1991, 33%; Flynn, 2001, 15.1%). The sample distribution appeared reasonable and representative of local public accounting firms. As a result, tests of nonresponse bias were not considered necessary.

Measures

Use of vignettes

The study of ethical behavior in the public accounting domain presents significant challenges. Gaining access to subjects is often difficult and when opportunities are presented, they are generally under less than ideal conditions. Ability to observe behaviors of interest in a field setting is not feasible. Thus, vignettes are widely used in business ethics research (Cavanagh and Fritzsche 1985). The vignettes selected were used in prior accounting ethics research (e.g., Claypool et al., 1990; Cohen et al., 1995a, 1995b) and the situations described are

dilemmas faced by those engaged in public practice. Different versions of the questionnaire were randomly administered. Each version included two vignettes; one used with the MES to measure moral sensitivity and the other served as a reference for the items used to measure the constructs associated with the theory of planned behavior.

Theory of planned behavior

The approach used to measure the components of the theory of planned behavior follows the framework outlined by Ajzen and Fishbein (1980). The psychometric properties of the scales and the validity of the constructs are well established. Sheppard et al.'s (1988) meta-analysis provides strong empirical support for the theory of reasoned action which has been applied to a wide range of behaviors. The 87 studies included a total sample size of 11,562 and found a correlation of 0.66 for the relationship between attitudes, subjective norm and intentions. Ajzen (1991) examined 16 studies that examined the theory of planned behavior (added perceived behavioral control construct to the theory of reasoned action) and found an average correlation of 0.71.

The items selected to measure the components of the theory of planned behavior are adapted from other studies without modification. The following discusses each of the constructs and highlights reliabilities of measures used in prior research.

Attitude

Attitude was measured directly using four 7-point, fully anchored semantic differential scales. The

TABLE I
Survey response rate

Firm	Distributed phase I	Distributed phase II	Phase I responses	Phase II responses	Phase I and phase II matched
A	13	13	13	13	13
B	12	12	12	12	12
C	40	40	22	19	19
D	55	55	43	36	33
E	40	40	25	18	18
Total	160	160	115	98	95

respondents read the scenario and were asked whether they felt the behavior was: “good-bad”; “ethical-unethical”; “wise-foolish”; “useful-useless”. The use of such scales follows the framework developed by Ajzen and Fishbein (1980) and the specific scales are the same as those used in ethics research by Randall and Gibson (1991) and Gibson and Frakes (1997) who reported reliabilities of $\alpha = 0.78$ and 0.75 , respectively. In this study, a higher score indicates ethical behavioral intention.

Subjective norms

A global measure was used to measure the subjective norms construct. This alternative approach to the belief-based measure has been widely used and recent studies provide empirical support for this method (e.g., Dubinsky and Loken, 1989; Gibson and Frakes, 1997; Kurland, 1996; Madden et al., 1992). Three items used in prior studies to measure this construct have been combined. Respondents were asked the following: “Most people who are important to me think I (should-should not) perform the behavior described in the vignette”; “Most people who are important to me will look down on me if I perform the behavior described in the vignette (likely-unlikely)”; “No one who is important to me thinks it is OK to perform the behavior described in the vignette (agree-disagree)”. All scales were 7-point, fully anchored.

Perceived behavioral control

Perceived behavioral control was measured using four items adapted from Madden et al. (1992). The scale they used was developed from a series of studies completed by Ajzen and colleagues (Ajzen and Madden, 1986; Ajzen et al., 1982; Schifter and Ajzen, 1985). Madden et al. (1992) report reliabilities for 10 behaviors ranging from $\alpha = 0.76$ to 0.88 . Randall and Gibson’s (1991) study of ethical behavior used three of the four scale items and reported coefficient $\alpha = 0.64$. The scale items are as follows: “For me to perform the behavior described in the vignette is (easy-difficult)”; “If I wanted to, I could easily perform the behavior described in the vignette (agree-disagree)”; “How much control do you have over the behavior described in the vignette (complete control-absolutely no control)”; “The number of events outside my control which could prevent me from performing the behavior described in the vignette are

(numerous-very few)”. All four measures were 7-point, fully-anchored.

Moral sensitivity

Moral sensitivity was measured using the MES originally developed and extended by Reidenbach and Robin (1988, 1990) and further tested in an accounting context by Cohen et al. (1993, 1995a, 1995b, 1996, 2001), Flory et al. (1992) and Cruz et al. (2000). Based on the results of the series of studies in the accounting domain, a 10 item version of the MES was used. Studies in the accounting domain suggest the MES items represent valid and reliable measures (e.g., Cohen et al., 1993- $\alpha = 0.83$ - 0.96 ; Cohen et al., 1998- $\alpha = 0.63$ - 0.8 ; Flory et al., 1992- $\alpha = 0.75$ - 0.94 ; Cruz et al., 2000- $\alpha = 0.73$ - 0.94).

Subjects read the background information describing the ethical dilemma and then responded to each of the 10 items measured on a seven-point scale. The nature of the ethical dilemma was similar (accounting context) to that used in measuring the components of the theory of planned behavior.

Instrumental ethical climate

The seven questionnaire items developed by Victor and Cullen (1988) were used to measure instrumental climate. Reliability of the scale, measured by coefficient alpha was 0.71 . Subsequent studies provide support for this dimension and report acceptable levels of reliability (e.g., Flannery and May, 2000- $\alpha = 0.81$; Kelley and Dorsch, 1991- $\alpha = 0.73$ and Wimbush et al. (1997b) - $\alpha > 0.72$).

Intention (dependent variable)

Respondents were asked to respond to three statements which are adapted from Beck and Ajzen’s (1991) investigation of unethical behavior using the theory of planned behavior. The authors report acceptable levels of reliability, with coefficient alpha ranging from 0.85 to 0.90 for three different unethical behaviors. The following 7-point scales, fully-anchored, were used to obtain a measure of behavioral intentions: “If I had the opportunity, I would perform the behavior described in the vignette (likely-unlikely)”; “I would never perform the behavior described in the vignette (true-false)”; “I may perform the behavior described in the vignette in the future. (true-false)”. In this study, a higher score indicates ethical behavioral intentions.

Methods variance

The study used a cross-sectional design whereby data were collected from subjects using a survey instrument. Thus, caution must be exercised regarding the interpretation of results as in certain cases the relationship between the constructs may relate to the method used or to some other systematic bias rather than the underlying phenomenon of interest. (Avolio et al., 1991; Howard, 1994; Podsakoff and Organ, 1986; Schmitt, 1994; Spector, 1994).

Common method variance

Common method variance is the artifactual covariance caused by the use of self-report measures of two or more variables. Avolio et al. (1991) discussed problems associated with the collection of data from a single source (a special case of common method variance), but proposed that the results are not necessarily artifactual. For example, the method of data collection for each construct can influence the covariance between the constructs. Method of data collection includes the type of scale and format of the instrument. Other suggested strategies include collection of data at different points in time and use of different scaling formats.

Common method variance is a potential alternative explanation. However, the use of self-reports is most appropriate given the nature of the proposed research question and design. Moreover, format of the measurement instruments does vary. Certainly, use of a time delay in administering the instruments may have reduced potential bias. Thus, the survey instruments were administered in two phases. Subjective norms, attitudes and perceived behavior control measures were administered in one phase and ethical intentions in the other.

Social desirability bias

Beck and Ajzen (1991) illustrated the difficulties encountered in ethics research and acknowledged the criticisms surrounding self-report data, but suggested "there are few, if any, practical alternatives that could provide equally interesting and detailed information about an individual. The practice of relying on self-reports is thus likely to continue, even though it is well recognized that such reports may be biased by tendencies to furnish socially desirable responses and to deny holding socially

undesirable attitude or performing socially undesirable behavior." (p. 291). The authors also refer to evidence that self-reports can be accurate (Himmelfarb and Lickteig, 1982). Moreover, Beck and Ajzen (1991) found a high frequency of admission of unethical behavior (cheating, shoplifting and lying) suggesting a willingness to accurately report such behaviors.

The Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960) has been widely used in personality research to test for the presence of this type of response bias. A shorter version of the standard 33-item scale developed by Strahan and Gerbasi (1972) was used in this study as a test for response bias. Reliability of the scale was evaluated by computing Cronbach's alpha. The degree of correlation with other scales was used to assess potential bias.

Data analysis*Sample characteristics*

Table II presents the distribution of staffing levels of the participants in the five firms. Overall, participation of the owners of the firms certainly illustrates strong support for the project. Partners/principals represent 30% of the subjects and employees 70%.

Females represent 45% of the total respondents, which reflects the trend in public accounting. The average number of years of experience for females is considerably less than that of males. However, this does not seem unusual given current trends.

TABLE II
Position in the firm

Position	Number	Percent
Staff	32	34
Senior	14	15
Manager/supervisor	15	16
Senior manager	5	5
Partner/principal	29	30
Total	95	100

Data analysis method

The model(s) were tested using partial least squares (PLS), which is a structural modeling technique (SEM) developed by Wold (1985). A relatively new approach, it provides an alternative to its more widely used counterpart, LISREL (Joreskog and Sorbom, 1984, 1993). Like LISREL, PLS offers the ability to test the measurement and structural components within the context of one structural equation model. However, the two methods differ in significant ways and the researcher should carefully evaluate their relative merits. For example, the distributional assumptions of LISREL (based on maximum likelihood estimation) are much more rigid, requiring multivariate normality and independence of observations. PLS, on the other hand, does not rely on these assumptions (Chin and Newsted, 1999) and combines regression (ordinary least squares), path analysis and principal components factor analysis. Further, PLS avoids the problems of factor indeterminacy and inadmissible solutions (Fornell and Bookstein, 1982).

Sample size requirements also differ under the two alternatives. LISREL generally requires a minimum sample size of 150–800 (Chin and Newsted, 1999; Gerbing and Anderson, 1988), whereas PLS requires 30–100 cases (Chin and Newsted, 1999). One heuristic used to specify minimum sample size requirements is 10 times the number of exogenous factors influencing the endogenous latent variable with the largest number of paths (Chin and Newsted, 1999). In this study, ethical intentions is the only endogenous construct and five paths are proposed. Thus, the minimum sample size is 50.

Based on the foregoing, PLS was selected for the following reasons. First, it is well suited for the small sample size. Based on the heuristic discussed above, the minimum sample size requirement is satisfied. Second, the data do not have to satisfy the strict distributional requirements of covariance-based SEM techniques such as LISREL. PLS-Graph (Version 3.0), a Graphical User Interface software program developed by Chin and Frye, was used to implement the PLS technique.

A two-step approach similar to that outlined by Gerbing and Anderson (1988) was used. The following is a brief summary of the approach adapted from Gerbing and Anderson (1988). Step one tests the reliability and validity of the measurement model

and step two evaluates the structure of the specified nested models.

Step one—the measurement model

Tests of reliability

Table III presents the constructs, items (indicators), factor loadings and the composite scale reliability for each block of indicators. Reliability was assessed by first examining the magnitude of the factor loadings. Fornell and Larcker (1981) recommend 0.7; however, this is somewhat more conservative than the 0.5 often used in factor analysis. With the exception of three items measuring perceived behavioral control, all factor loadings exceeded the 0.5 level and most exceeded 0.7. Another measure of reliability is the construct's composite scale reliability which is a measure of internal reliability similar to Cronbach's alpha. All scales exceed the cut-off of 0.5 recommended by Fornell and Larcker (1981).

Tests of validity

Table IV presents the average variance extracted (AVE) for each of the model constructs. In a PLS context, Fornell and Larcker (1981) suggest using AVE to help assess convergent validity. The AVE is the average variance shared between a construct and its measures. The square root of the AVE is the correlation of the construct with its measure. AVE ranges between 0.505 and 0.710 which exceeds the minimum of 0.5 suggested by Fornell and Larcker (1981).

To further assess discriminant validity, Table V presents the correlations of the latent variables. The amounts shown in the off-diagonals should be less than the diagonals which represent the correlation of the construct with its measure. With the exception of perceived behavioral control, the table illustrates strong evidence of discriminant validity.

Step two—assessing the structural model

Following Gerbing and Anderson (1988) this study tests a series of nested structural models. The three models tested include the substantive (proposed) model of interest (Model 1 – Figure 2); the theory of reasoned action (Model 2); and Model 3 is a sub-model of the theory of reasoned action and estimates a path between subjective norm and attitudes.

TABLE III
Measures of internal consistency

Construct and items	Factor loading	Composite scale reliability
<i>Attitude</i>		
A1	0.8815	0.875
A2	0.8169	
A3	0.8857	
A4	0.5852	
<i>Subjective norm</i>		
S1	0.9081	0.835
S2	0.9281	
S3	0.5014	
<i>Perceived behavioral control</i>		
P1	0.9563	0.546
P2	0.4627	
P3	-0.2880	
P4	-0.0526	
<i>Instrumental climate</i>		
E1	0.8283	0.874
E2	0.7622	
E3	0.4284	
E4	0.7776	
E5	0.7813	
E6	0.7040	
E7	0.6132	
<i>Moral sensitivity</i>		
M1	0.8490	0.918
M2	0.8562	
M3	0.8427	
M4	0.5024	
R1	0.6481	
R2	0.6602	
U1	0.7206	
U2	0.7038	
C1	0.7608	
C2	0.6791	
<i>Intention</i>		
I1	0.8631	0.880
I2	0.8739	
I3	0.8163	

Overall evaluation of the nested models

The objective in PLS is to maximize the explained variance (minimize error) in the endogenous constructs. As a result, use of goodness-of-fit indices in a PLS context is not appropriate (Chin and Newsted, 1999; Hulland, 1999). Nonparametric measures that

TABLE IV
Average variance extracted

Constructs	AVE
Attitude	0.643
Subjective norm	0.643
Perceived behavioral control	0.31
Moral sensitivity	0.533
Instrumental climate	0.505
Ethical intentions	0.71

are prediction oriented are recommended. Fornell and Larcker (1981) suggest the use of R^2 to evaluate the model. Chin (1998) also suggests that standardized paths meet a minimum threshold of 0.2. In sum, the structural model is evaluated based on the significance of the paths and the explained variance of the endogenous variables.

The PLS parameter estimates for the suggested nested models are presented in Table VI. Support was found for hypothesis 1, which postulated that attitudes would positively influence ethical intentions (path = 0.518; $p < 0.005$ for Model 1; path = 0.556; $p < 0.005$ for Model 2 and path = 0.541; $p < 0.005$ for Model 3). Hypothesis 2 which expected a positive relationship between subjective norm and attitude was not supported. However, Model 3 further examined the relationship between subjective norm and attitude. The path is 0.578 with $p < 0.005$. This finding is consistent with the significant correlation noted between the two latent variables. Hypothesis 3, which expected a positive relationship between perceived behavioral control and intentions was not supported. However, the measure of this particular construct did not achieve an adequate level of reliability. No support was found for the relationship between moral sensitivity and ethical intentions (hypothesis 4). Instrumental climate was hypothesized to have a negative influence on ethical intentions. While the sign was as expected, the path was not significant.

Social desirability response bias

Table VII shows the correlations of the short-version of the Marlowe–Crowne scale with the other

TABLE V
Correlations of latent variables

		1	2	3	4	5	6
1	Attitude	0.802					
2	Subjective norm	0.562	0.801				
3	Perceived behavioral control	0.214	-0.009	0.557			
4	Moral sensitivity	0.171	0.159	0.215	0.730		
5	Instrumental climate	-0.086	-0.072	0.008	-0.211	0.711	
6	Ethical intentions	0.632	0.447	0.194	0.185	-0.199	0.843

Note: The diagonals are the correlations of the construct with its measure (square root of the AVE).

TABLE VI
Tests of hypotheses: alternative models

Hypothesis and path	R^2	Predicted path coefficient	Standardized path coefficient
Model 1 (proposed model):	0.44		
H1: Attitude-intention		+	0.518*
H2: Subjective norm-intention		+	0.142
H3: Perceived behavioral control-intention		+	0.079
H4: Moral sensitivity-intention		+	0.027
H5: Instrumental climate-intention		-	-0.139
Model 2 (theory of reasoned action)	0.41		
H1: Attitude-intention		+	0.556*
H2: Subjective norm-intention		+	0.135
Model 3	0.39		
H1: Attitude-intention		+	0.541*
H2: Subjective norm-attitude	0.33		0.578*
H3: Subjective norm-intention		+	0.133

* $p < 0.005$, one-tailed test.

scales used in measuring the constructs of interest. None of the correlations are significant.

Discussion

The results of this study support the applicability of the theory of reasoned action (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) in predicting ethical intentions of public accounting professionals. Specifically, attitudes had strong explanatory power. However, subjective norms did not have a significant direct effect on ethical intentions. This finding

is consistent with a limited number of ethics studies in the general business domain (e.g., Chang, 1998; Kurland, 1996). In contrast, Randall and Gibson's (1991) study suggests moderate support and Flannery and May (2000) found strong support for the relationship between subjective norms and intentions. An important finding of this study is the significant relationship between subjective norms and attitudes, which results in a strong indirect relationship between subjective norms and ethical intentions. Chang's (1998) investigation of software piracy produced similar results. Certainly, the nature of the relationship between attitudes and subjective norms

TABLE VII
Scale correlations

	Attitude	Subjective norm	Perceived behavioral control	Instrumental climate	Moral sensitivity	Ethical intentions
Marlowe–Crowne	0.080	0.131	0.019	-0.114	0.131	0.151

Note: Cronbach's alpha=0.68 which approximates Nunnally's (1978) suggested benchmark of 0.7.

in an organizational setting should be further explored. Survey questions dealt with the expected reactions of "important others" to certain types of behaviors. Perhaps investigating antecedent beliefs, or developing questions dealing specifically with organizational members would help provide clarity.

Perceived behavioral control was added to deal with factors that may limit the ability to achieve a desired behavioral outcome. In this study, an acceptable level of reliability of the measurement scale was not achieved. As a result, the relationship to ethical intentions could not be evaluated. Failure to achieve item reliability and internal consistency may relate to confusion caused by the wording of the questions.

Another objective of this study was to explore the contribution of instrumental climate and moral sensitivity. The path linking instrumental climate and ethical intentions was not significant, but the direction was as anticipated. Moreover, the reliability and discriminant validity of the measures was supported. Findings are somewhat consistent with ethics research in the business domain, even though consideration of the impact of ethical climate has been limited. For example, Flannery and May (2000) found a marginal effect of instrumental climate. However, they treated this construct as a component of perceived behavioral control, whereas this study considers climate separately.

Perhaps the lack of support is partially explained by the nature of the sample which included only firms licensed to practice public accounting. Generally, firm members are professionals bound by strict professional standards, are subject to close monitoring by outside organizations (e.g., boards of accountancy, American Institute of Public Accountants, peer firms) and would not be expected to perceive instrumental climates. The mean scores for the seven items included in the ethical

climate scale ranged from 0.88 to 2.2 (higher scores indicate instrumental climate) which illustrates that participants did not perceive an instrumental climate.

Moral sensitivity was added as a measure of moral norms. Ajzen (1991) proposed that moral norms may add explanatory power and Conner and Armitage (1998) suggested its importance when dealing with ethical behavior. This study found no support for the relationship between moral sensitivity and ethical intentions. Exploration of a measure of moral norms in a business context has been limited. Flannery and May (2000) found no relationship between "personal moral obligation" and ethical intentions. However, their measure differed from that used in this study. The questions posed by Flannery and May related directly to the scenario used as a reference for all components of the suggested extended theory of planned behavior. However, in this study the scenario serving as a reference for the measure of moral sensitivity differed from that used to measure other constructs (e.g., attitudes, subjective norms and perceived behavioral control) that relate to the theory of planned behavior. The research objective was to determine whether an individual's sensitivity to an ethical dilemma would help to explain intentions in a similar type of dilemma. Findings suggest that the MES responses tend to be situation specific.

Limitations

Certain potential limitations of this study are noteworthy. First, the sample was nonrandom and representative of firms operating primarily within one state. On the one hand, this restricts the ability to generalize the results. On the other hand, restricting

the sample to a small group of local firms controls for other (unspecified) variables that may influence the relationship between the variables of interest. For example, other dimensions of ethical climate and organizational factors not captured by the components of the theory of planned behavior may influence the responses to the dilemmas. Arguably, such factors can vary within a small sample of similarly situated firms, but this design helps to limit overall variability due to error.

The ability to directly observe the behavior(s) of interest is beyond our reach. Thus, the array of research designs and methodologies available is limited. Questionnaires are widely used in ethics research for obvious reasons. However, this also represents a significant limitation. Use of an instrument such as the MES and administering the survey in phases helped to limit common methods effects. Moreover, an attempt was made to control for social desirability bias, yet it (and other response type biases) remains an issue that temper overall conclusions.

Conclusion and suggestions for future research

The purpose of this study was to respond to Louwer et al.'s (1997) call to develop and test a model of ethical decision-making specific to the accounting profession. A proposed extension of the theory of planned behavior provided the framework to accomplish those goals. The theory has been used to explain a wide range of behaviors. Arguably, extending the framework to the moral domain is testing the boundary limits of the theory; however, recent research efforts have demonstrated promise in this area.

Ajzen's (1991) comments regarding the utility of the theory of planned behavior are particularly noteworthy:

“intentions, perceptions of behavioral control, attitudes towards the behavior, and subjective norms each reveals a different aspect of the behavior, and each can serve as a point of attack in attempts to change it. The underlying foundation of beliefs provides the detailed description needed to gain substantial information about behavioral determinants. It is at the level of beliefs that we can learn about the unique factors that induce one person to engage in

the behavior of interest and to prompt another to follow a different course of action” (p. 206).

This study offered an opportunity to gain a better understanding of the factors that directly influence accountants' ethical intentions and move beyond the research tradition that emphasizes cognitive moral development.

In sum, this paper contributes to the accounting ethics research literature in several important ways. First, it extends the work of Gibson and Frakes (1997) who were among the first to test the theory of reasoned action in the accounting domain. Findings suggest that the theory of reasoned action provides a useful framework for exploring factors that influence public accountants' ethical intentions. Second, findings support a direct relationship between subjective norms and attitudes. This is consistent with Chang's (1998) study and offers an opportunity for future research. Third, the use of PLS provides an alternative to covariance-based structural modeling techniques. PLS is well suited to behavioral accounting research which often relies on small samples. General business ethics research has made limited use of LISREL which is a covariance based SEM technique, but few if any accounting ethics studies have utilized these multivariate techniques.

Appendix 1 vignettes

Vignette 1: confidentiality

CPA Z serves as the auditor of Widget & Co., a privately held firm. Widget's market share has declined drastically, and Z knows that Widget will soon be bankrupt. Another of Z's audit clients is Solid Company. While auditing Solid's accounts receivable, Z finds that Widget & Company owes Solid \$200,000. This represents 10% of Solid's receivables.

Action: CPA warns the client, Solid Company, about Widget's impending bankruptcy.

(Adapted from Claypool et al. (1990) who in turn adapted from Armstrong (1985) and Loeb (1971). Also used by Cohen et al. (1995a, 1995b)).

Vignette 2: underperforming the audit

A public accounting firm has recently acquired a new client with a very low bid. The partner suggests the audit hour budget for inventory-related items will be 100 hours. The senior's experience with similar clients suggests that in order to have reasonable assurances of no material errors or regularities, the audit will take a minimum of 150 hours. Performance evaluation is based in part on efficiency.

Action: The senior accepts the budget as is. Subsequently, in cases where judgment is required to determine the number of audit procedures, the senior performs fewer procedures.

(Adapted from Cohen et al. (1995a, 1995b)).

Vignette 3: lowballing (used with MES)

A partner is developing a bid for a new client. The partner deliberately sets the bid significantly below cost. The partner knows that the audit will lose money in the first few years. However, the expectation is that the firm will be able to raise the audit fee a few years down the road to generate a profit.

Action: In response to a question from the prospective client, the partner indicates that fees should not be expected to rise significantly in the foreseeable future.

(Adapted from Cohen et al. (1995a, 1995b)).

Vignette 4: charging personal expenses to the firm (used with MES)

A supervisor, the mother of two small children, has been promoted and assigned to an engagement which requires travel away from home for the firm on a regular basis. Because these trips are frequent and inconvenience her family life, she is contemplating charging some small personal expenses while traveling for the firm. She has heard that this is common practice in the firm.

Action: The supervisor charges the firm \$50 for family gifts.

(Adapted from Cohen et al. (1996, 1998); Flynn (2001)).

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