



Managerial Auditing Journal

The effects of accounting students' ethical reasoning and personal factors on their ethical sensitivity

Samuel Y.S. Chan Philomena Leung

Article information:

To cite this document:

Samuel Y.S. Chan Philomena Leung, (2006), "The effects of accounting students' ethical reasoning and personal factors on their ethical sensitivity", *Managerial Auditing Journal*, Vol. 21 Iss 4 pp. 436 - 457

Permanent link to this document:

<http://dx.doi.org/10.1108/02686900610661432>

Downloaded on: 18 January 2017, At: 13:00 (PT)

References: this document contains references to 83 other documents.

To copy this document: permissions@emeraldinsight.com

The fulltext of this document has been downloaded 6607 times since 2006*

Users who downloaded this article also downloaded:

(2007), "Professional accounting bodies' perceptions of ethical issues, causes of ethical failure and ethics education", *Managerial Auditing Journal*, Vol. 22 Iss 9 pp. 928-944 <http://dx.doi.org/10.1108/02686900710829426>

(2009), "The audit crunch: reforming auditing", *Managerial Auditing Journal*, Vol. 24 Iss 2 pp. 135-155 <http://dx.doi.org/10.1108/02686900910924554>



Access to this document was granted through an Emerald subscription provided by emerald-srm:129451 []

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

*Related content and download information correct at time of download.



The effects of accounting students' ethical reasoning and personal factors on their ethical sensitivity

Samuel Y.S. Chan

*School of Accounting and Finance, The Hong Kong Polytechnic University,
Kowloon, Hong Kong, People's Republic of China, and*

Philomena Leung

*School of Accounting, Economics and Finance, Deakin University,
Burwood, Australia*

Abstract

Purpose – Rest posited that to behave morally, an individual must have performed at least four basic psychological processes: moral sensitivity; moral judgment; moral motivation; and moral character. Though much ethics research in accounting has been focused on component two, ethical judgment, less research has been undertaken on the other three components. The purpose of this study is to focus on component one, ethical sensitivity, of Rest's four-component model.

Design/methodology/approach – A sample of 156 accounting undergraduates was employed to investigate the ethical sensitivity of accounting students and the effects of their ethical reasoning and personal factors on their ethical sensitivity.

Findings – Results of this study show that accounting students vary in their ability to detect the presence of ethical issues in a professional scenario. There is no significant relationship between accounting students' ethical sensitivity and their ethical reasoning (*P*-score). Accounting students characterized as "internals" are more likely to show an ability to recognize ethical issues than those characterized as "externals." The results also indicate that an accounting ethics intervention may have positive effect on accounting students' ethical sensitivity development. Hence, an individual who possesses the ability to determine what is ethically right or wrong (high ethical reasoning) may fail to behave ethically due to a deficiency in identifying ethical issues (low ethical sensitivity) in a situation.

Originality/value – Whilst much research has concentrated on ethical reasoning and ethics education to enhance the ethical conduct of accountants, it is important that the profession and researchers also direct their attention and efforts to cultivating the ethical sensitivity of accountants. The findings of this study provide additional evidence to support Rest's theory of a more comprehensive cognitive model of ethical decision-making and suggest a more balanced research effort in evaluating the ethical development of individuals.

Keywords Ethics, Accounting

Paper type Research paper

Introduction

Ethical behavior of professional accountants is vital to the status and credibility of the accountancy profession. In recent years the corporate and accounting scandals such as Enron and WorldCom have raised compelling questions about the role of public accountants. Allegations of accountants' violations of public trust have led to government intervention. A decade ago, Ponemon and Gabhart (1993) argued that the



loss of public trust and increasing government intervention may in turn lead to the demise of the accountancy profession. However, ethical problems are inherent in the working environment of professional accountants (Finn *et al.*, 1988; Ponemon and Gabhart, 1993, 1994; Leung and Cooper, 1995). In carrying out their professional practices, professional accountants have to interact with a wide array of stakeholders including individuals, entities and organizations. Such interactions, in many cases, may result in potential conflicts of interest.

Recent research of ethical issues in accounting focuses on three main areas:

- (1) ethical development;
- (2) ethical judgment[1]; and
- (3) ethics education.

Briefly, ethical development studies attempt to explore the underlying ethical reasoning processes of accountants and auditors in practice (Armstrong, 1984, 1987; Ponemon, 1988, 1990, 1992; Shaub, 1989, 1994; Lampe and Finn, 1992; Ponemon and Gabhart, 1993; Tsui, 1994; Sweeney, 1995; Jeffrey and Weatherholt, 1996; Kite *et al.*, 1996; Cohen *et al.*, 2001; Ellas, 2002; Buchan, 2005). Ethical judgment studies examine the relationship between ethical reasoning and ethical behavior of accountants in the context of accounting and auditing (Ponemon and Gabhart, 1990; Arnold and Ponemon, 1991; Bernardi, 1991; Finn and Lampe, 1992; Ponemon, 1993, 1995; Ponemon and Gabhart, 1993; Windsor and Ashkanasy, 1995; Shaub and Lawrence, 1996; Ryan, 2001; Allen and Ng, 2001; Uddin and Gillett, 2002; Gul *et al.*, 2003; Chiu, 2003). Finally, studies in ethics education investigate the effectiveness of educational interventions in improving the ethical attitudes and ethical reasoning skills of accounting students and practitioners (Armstrong, 1987, 1993; Ponemon and Glazer, 1990; St Pierre *et al.*, 1990; Hildebeitel and Jones, 1991, 1992; Shaub, 1991; Ponemon, 1992; Jeffrey, 1993; Lampe, 1994; Welton *et al.*, 1994; LaGrone *et al.*, 1996; Green and Weber, 1997; Molyneaux, 2005; Mele, 2005).

Despite the differences in scope and research findings, the majority of these accounting studies are grounded on a common foundation – the psychology of moral reasoning. In the psychology literature, Kohlberg's theory of cognitive moral development is widely accepted as the most notable theory in moral reasoning (Rest, 1986, pp. 8, 110; Lovell, 1997, p. 154). Kohlberg (1969) developed a theory of moral reasoning which focuses on the cognitive process used by individuals to guide them in deciding right from wrong. According to Kohlberg, an individual's moral reasoning is developed through a series of cognitive levels as summarized in a six-stage model. Ethical reasoning is often operationalised in terms of the *P*-score (the principled score) of Rest's (1979) defining issues test (DIT), an objective test of ethical development based on the six stages of Kohlberg's (1969) cognitive moral reasoning model. While this ethics research in accounting provides additional understanding of accountants' resolutions of ethical conflicts and guidance to effect propriety in the accounting and auditing professions, the ability of accountants to discern the presence of ethical problems is also worthy of study. Rest (1983) has constructed a comprehensive cognitive model of ethical decision-making (four-component model) to examine the development of individual moral thought processes and behavior. Rest (1983) posited that to behave morally, an individual must have performed at least four basic psychological processes:

- (1) moral sensitivity (MS);
- (2) moral judgment (MJ);
- (3) moral motivation (MM); and
- (4) moral character (MC).

Kohlberg's (1969) stage sequence moral reasoning model that addresses component two, i.e. MJ, is recognized as an integral part of Rest's (1983) four-component model (Rest, 1986; Ponemon and Gabhart, 1994). Though much ethics research in accounting has been focused on professional accountants' ethical reasoning and development, less research has been undertaken on the other three components of Rest's (1983) four-component model. These three components should be studied more in order to understand accountants' ethical behavior within Rest's (1983) ethical decision-making model (Louwers *et al.*, 1997).

This study focuses on the component one of Rest's (1983) four-component model. It examines the ethical sensitivity of accounting students and probes the effects of their ethical reasoning (component two) as well as their personal factors, e.g. their ethical orientation, locus of control, gender, age, and academic performance, on ethical sensitivity. Results of this study show that individuals vary in their ability to discern the presence of ethical issues and that there is no significant relationship between their ethical sensitivity and ethical reasoning. "Internal" accounting students who perceive an event being contingent upon one's behavior are more capable of recognizing ethical issues than "external" accounting students who perceive an event as the result of outside forces or from others' behavior. The results also indicate that an accounting ethics intervention may have a positive effect on ethical sensitivity development. These findings provide additional evidence to support Rest's (1983) theory of a more comprehensive cognitive model of ethical decision-making and suggest more research effort be spent on the first component (ethical sensitivity) of his four-component model. It provides additional understanding of accountants' awareness of ethical conflicts within Rest's (1983) ethical decision-making model and offers additional guidance to effect ethical behavior in the accounting profession.

Literature review

The four-component model

Rest (1983) constructed a four-component framework to examine the development of individual moral thought processes and behavior. He posited that to behave morally, an individual must have performed beforehand at least four basic psychological processes:

- (1) *Moral sensitivity*. Interpreting the situation.
- (2) *Moral judgment*. Judging which action is morally right or wrong.
- (3) *Moral motivation*. Prioritizing moral values relative to other values.
- (4) *Moral character*. Having courage, persisting, overcoming distractions, in order to carry out the moral action.

MS refers to the awareness of how one's actions affect others. It involves an awareness of different possible actions and how such actions could affect the parties concerned. It involves imaginatively constructing possible scenarios, knowing cause-consequence

chains of events; empathy and role-taking skills. So, an individual must firstly perceive that the situation has ethical implications. Then he or she identifies the roles of, and effects of the situation on all affected parties. Finally, alternative actions are identified and potential outcomes are evaluated.

MJ concerns judging which lines of action – as identified by component one, i.e. MS – are morally more justifiable (or fair or just or morally good or right).

MM deals with the importance given to moral values versus other values. Deficiencies in this component occur when other values such as self-actualization or protection of one's organization are considered more important than doing what is right. On the other hand, MC refers to those personalities such as ego strength, perseverance, backbone, toughness, strength of conviction, and courage that are necessary to carry out the right action. While MM acknowledges the presence of human desires, which may over-shadow moral convictions, MC relates to personal perseverance, resoluteness and competence to overcome impediments (Rest, 1986).

Rest (1986) posited that moral behavior is the result of a multiple, complex process. All four components (MS, MJ, MM and MC) are determinants of moral action and they interact with each other. An individual who demonstrates adequacy in one component may not necessarily be adequate in another and moral failure can occur when there is a deficiency in any one component. For example, an individual who has good moral reasoning capacity may fail to perceive an ethical problem, omit an impacted party from evaluation, or misinterpret the effects of a behavior choice on an impacted party – a component one failure. An individual who has identified an ethical problem in a situation may have insufficient or incomplete moral reasoning to determine the ideal moral action – a component two failure. An individual who has determined the ideal moral behavior in a situation may decide that other factors are more important than developing ideal moral intentions – a component three failure. Finally, an individual who has developed a moral intention may fail to carry it through to behavior – a component four failure. According to Rest (1986), the four components do not occur in a temporal order; rather they comprise a logical analysis of what it takes to behave morally. Hence, a person's way of defining what is morally right (component two, i.e. MJ) may affect that person's interpretation of the situation (component one, i.e. MS).

Research into moral sensitivity

Individuals vary in their ability to perceive situations as involving ethical issues. They may be less responsive to a situation because of a difficulty to identify their role (Staub, 1978) or they fail to recognize or interpret a situation resulting in a lack of sensitivity to others' needs and welfare (Rest, 1986). Furthermore, some psychological studies have found that a social situation can lead to immediate affective responses – ranging from empathy for a victim to instant dislike of someone's looks – that precede a considered, reflective judgment of the situation (Zajonc, 1980; Hoffman, 1981). Rest (1986) considered these instances of affective arousal as part of what is needed to interpret component one, and thus they do affect other components.

Ethical sensitivity in real life contexts also show that subjects respond differently in hypothetical situations, while others might not be clear about who had a stake in the situation or what the stake was (Bebeau *et al.*, 1981, 1985). However, there was no significant difference found in the MS between the more experienced practitioners and novice (Volker, 1984). Also, ethical sensitivity was found to be influenced by the

nationality and gender of the decision-maker (Simga-Maugan *et al.*, 2005). Rest (1986, p. 25) summarized two findings from research of MS as follows:

- (1) MS correlates only moderately (in the 0.2-0.5 range) with DIT (moral development or principled) scores. This finding supports the view that morality is not a single, unitary process, and that component one (MS) and component two (MJ) processes are separable processes. It is possible for a person to be very morally sensitive but not very sophisticated to arrive at a balanced view of a just solution, and vice versa.
- (2) The MS process seems to be affected by a range of factors. Future research should devise ways of identifying the situational features and personal history factors that affect the component one process.

In the accounting literature, there has been very little study on this component. This is partly due to validated instruments not being available for analyzing ethical sensitivity. Ethical sensitivity cannot be studied in the same way that cognitive developmentalists study ethical judgments – by presenting some moral problems to respondents, then asking them what is right and wrong (Rest, 1986). Rest (1986, p. 9) explained that:

... because the very presentation of the moral dilemmas (as written paragraphs or as short vignettes verbally presented by an interviewer) has already pre-coded and interpreted the situation (already identifying what courses of action are possible, identifying who has a stake in the situation, and suggesting what the consequences are of each course of action). Since, this information is already given in the stimulus material, we cannot then discover how the subject carries out component one (ethical sensitivity) processes.

Shaub (1989) developed an instrument to measure auditors' ethical sensitivity. The measure includes an auditing scenario within which there are several personal or professional issues that might be of concern to an auditor carrying out auditing duties. In addition, three ethical issues are embedded in the scenario in a manner similar to that employed by Bebeau *et al.* (1985). In measuring the ethical sensitivity of a subject, the subject is asked to go through the scenario and to indicate what issues in the scenario he or she considers being important and their relative importance. Recognition of the ethical issues in the scenario, regardless of the importance attached to the issues, serves as the absolute measure of ethical sensitivity.

There have been two studies that used this ethical sensitivity instrument to research auditors' ethical sensitivity (Shaub, 1989; Shaub *et al.*, 1993). Shaub (1989) studied factors that affect auditors' sensitivity to situations having ethical concerns. He reported that the ethical sensitivity measure developed was not simply replicating the concept of Rest's DIT. The results of Shaub's (1989) study did not support the hypothesis that an auditor's ethical orientation affects his ethical sensitivity. There was no statistical correlation between the auditors' ethical sensitivity and their ethical reasoning. However, ethical sensitivity was found positively related to age but not to education. Shaub *et al.* (1993) studied the effects of auditors' ethical orientation on commitment and ethical sensitivity. In their research, auditors' ethical orientations were found to influence not only their ethical sensitivity, but also their organizational and professional commitment. Relativistic auditors were found less likely to recognize ethical issues in an auditing scenario.

Arnold and Ponemon (1991) investigated the relationship between the internal auditor's ethical reasoning and perceptions of whistle-blowing. They asked 106 internal auditors to predict whether or not another person would engage in a whistle-blowing act under two different sets of conditions – one relating to the position of the individual discovering a fraud, the other dealing with the nature of the retaliation posed against the whistle-blower. They reported that internal auditors with relatively higher levels of ethical reasoning are more likely to identify and report an unethical behavior (i.e. whistle-blow). They also found that internal auditors' predictions were influenced by the position of the individual who discovered the fraud.

Karcher (1996) built on Shaub's research to study auditors' ability to discern the presence of ethical problems. An experimental instrument with ethical problems that are integrated into general accounting situations was employed to discover the sensitivity of accounting professionals to ethical issues and factors that affect their ethical sensitivity and perceptions of the importance of the ethical issues. Karcher (1996) reported that auditors in her study were generally sensitive to ethical issues. Factors such as the nature of the ethical issue, the severity of the ethical issue and the subject's age were found significant in ethical issue identification, whereas the subject's employment position, expertise, prior exposure to a similar ethical issue and education level were not significant. The nature of the ethical issue itself was also found a significant factor in determining the absolute importance given to the ethical issue.

More recently, Patterson (2001) examined the relative importance of industry, organizational and personal constructs on public accountants' ethical sensitivity. In the study, the industry construct includes the perceived effectiveness of enforcement mechanisms in respect of licensing requirements, professional associations and their related codes of conduct and judicial oversight; the organizational construct includes "role-set configuration"[2] and organizational commitment; and personal construct includes Machiavellianism, locus of control and moral reasoning operationized in terms of the *P*-score of the DIT. Patterson (2001) reported that industry, organizational and personal constructs were not found to be significant causal factors on public accountants' ethical sensitivity. However, the results of the study indicated that the industry and organizational constructs were negatively correlated with the personal construct.

In summary, individuals vary in their sensitivity to ethical issues. Prior accounting studies of ethical sensitivity have suggested various personal factors, e.g. ethical reasoning; ethical orientation; locus of control; age; education level; employment position; and expertise that affect or do not affect professional accountants' ethical sensitivity process. Some research findings are equivocal. Research into ethical sensitivity in the accounting profession is still under way and more research should be devised to identify those situational and personal factors that affect the component one process in the context of Rest's (1983) four-component model.

Hypotheses development

This study empirically examines the ethical sensitivity process of accounting students and investigates the effects of their personal factors on their ethical sensitivity. As accounting students are future professional accountants, the study of the ethical development of professional accountants should begin with the study of accounting

students (Jeffrey, 1993). Research into accounting students' ethical sensitivity provides additional understanding of professional accountants' ethical development within Rest's (1983) ethical decision-making framework and offers accounting educators additional guidance to affect ethical propriety of future professional accountants. The results of this study are, therefore, expected to contribute to the growing body of positive accounting ethics literature, and to the limited research in the aspect of professional accountants' ethical sensitivity. Based on the literature, the selected personal factors for the study are ethical reasoning, ethical orientation, locus of control, age, gender and academic performance. Seven hypotheses were developed to study the effects of these selected personal factors on accounting students' ethical sensitivity.

Rest (1986) reported that ethical sensitivity correlates only moderately with ethical reasoning. However, in the accounting literature, the effect of ethical reasoning on ethical sensitivity is not fully established. The findings in respect of the relationship between ethical sensitivity and ethical reasoning provide mixed results (Shaub, 1989; Arnold and Ponemon, 1991; Patterson, 2001). To test the relationship between the ethical sensitivity and ethical reasoning of accounting students in this research, the first null hypothesis is set:

H01. There is no relationship between the ethical sensitivity and ethical reasoning of accounting students.

Prior research has supported the contention that personal ethical systems are different and individual variations must be taken into consideration when examining JMs (Forsyth, 1980; Ellas, 2002). Schlenker and Forsyth (1977) suggested that individual variations in making ethical judgments may be described most parsimoniously by two factors – idealism and relativism. Idealism refers to the extent that an individual believes that desirable consequence can always be obtained without violating moral guidelines. A less idealistic orientated individual admits that by following moral guidelines, undesirable consequences (including harm to others) will often be mixed with desirable ones. Relativism refers to the extent to which an individual rejects universal moral rules to guide behavior. Differences in ethical orientation can result in disagreements about what is ethical *per se*, about the situations to which a person should be sensitive, and about the ethical judgments made. It becomes important, then, to evaluate and consider a person's ethical orientation when examining his ability to recognize ethical issues in a situation concerns ethics.

However, findings in prior accounting research about the effect of ethical orientation on ethical sensitivity are equivocal (Shaub, 1989; Shaub *et al.*, 1993). Since, a more idealistically oriented individual will tend to focus more on ethical rules and guidelines as well as harm to others, he or she is more sensitive to situations that involve harm to others and interpret them as ethical situations. A more relativistic oriented individual, on the other hand, rejects universal moral rules and considers ethical issues can be interpreted from different perspectives; he or she is less sensitive to identify situations that involve ethical issues. Two null hypotheses are set to test the effect of ethical orientation on accounting students' ethical sensitivity in this research:

H02. Level of idealism has no effect on accounting students' ethical sensitivity.

H03. Level of relativism has no effect on accounting students' ethical sensitivity.

Locus of control concerns the forces believed by an individual as being responsible for the rewards and punishments that occur to him/her (Rotter, 1966). A person characterized as "external" believes that he/she is a victim of fate, chance, or powerful others and that he/she has little control over the fortunes that will befall him. On the other hand, an "internal" believes that one's behavior determines what will happen to that person who is the master of one's own destiny. Locus of control has been considered to be one of the more stable personality traits in an individual (Koford and Penno, 1992). A review of the ethics literature reveals that locus of control as a personality trait has effects on ethical decision-making and ethical behavior (Bloomberg and Soneson, 1976; Hegarty and Sims, 1978, 1979; Maqsd, 1980; Lefcourt, 1982; Trevino, 1987; Trevino and Youngblood, 1990; Tsui and Gul, 1996; Chiu, 2003). It is expected that an "internal" who perceives an event is contingent upon one's behavior is more able to recognize ethical issues than an "external" who perceives an event is the result of outside forces or from others' behaviors. This postulate is tested by the fourth null hypothesis in this study:

H04. Locus of control ("internal" vs "external") has no effect on accounting students' ethical sensitivity.

Personal attributes are often posited by ethics theorists as variables which influence the ethics decision-making process (Bommer *et al.*, 1987; Hunt and Vitell, 1992). Their propositions in this aspect are generally supported by research studies which have shown relationships between certain demographic variables and the ethics decision-making process. The demographic variable, age, shows a relationship with the level of ethical judgment (Colby *et al.*, 1983; Thoma, 1984) and with ethical sensitivity (Shaub, 1989; Karcher, 1996). The demographic variables which show a relationship with the level of ethical judgment and ethical sensitivity include:

- academic achievement (Spickelmier, 1983; Shaub, 1994); and
- gender (Thoma, 1984; Shaub, 1994; Thorne, 1999; Simga-Maugan *et al.*, 2005).

Three null hypotheses are set to test the effects of age, academic performance and gender on accounting students' ethical sensitivity in this study:

H05. Age has no effect on accounting students' ethical sensitivity.

H06. Academic performance has no effect on accounting students' ethical sensitivity.

H07. Gender has no effect on accounting students' ethical sensitivity.

Research methodology

Subjects

The subjects of this study were final year undergraduate accounting students of Hong Kong Polytechnic University (PU) and City University of Hong Kong (CU). Both accountancy degrees are similar in terms of admission criteria, programme structure, academic curriculum and teaching modes; both programmes are accredited by the Hong Kong Institute of Certified Practising Accountants. In the accountancy degree programme of PU, there is an ethics course – "Ethics in Accountancy," offered as a core course in the second semester of the third (final) year to its accounting students. However, in the curriculum of CU, there is no core ethics course for its accounting

undergraduates. Instead, CU's accounting students are given a few hours of integrated ethics interventions embedded into some traditional accounting subjects such as auditing, tax and advanced financial accounting.

Instrument

Data for the study was collected by means of a self-contained questionnaire. The questionnaire contains four parts as follows:

- (1) ethical sensitivity;
- (2) ethical reasoning;
- (3) ethical orientation and locus of control; and
- (4) demographics.

Shaub's (1989) ethics sensitivity instrument was adapted[3] to measure the subjects' ethical sensitivity. As explained previously, the instrument includes an auditing scenario embedded with three ethical issues. Subjects are required to write down in their own words what issues in the scenario they consider important and their relative importance. Recognition of the ethical issues in the scenario (recognition of one ethical issue in the scenario scores 1 mark), regardless of the importance attached to each issue, serves as the absolute measure of ethical sensitivity.

The Welton *et al.* (1994) ethics judgment instrument was adapted to measure the ethical reasoning levels of the subjects. The instrument is patterned on Rest's DIT but with accounting-specific scenarios. The original instrument contains four scenarios in various aspects of the accountants' professional environment[4]. Each scenario is followed by 12 statements that have been worded to present the stage sentiments of Kohlberg's stages two to six. To assess the ethical reasoning level of a subject, the subject is asked to evaluate these statements on a five-point scale, and to identify the four that he or she considers most relevant to the decision. Then, these four chosen statements are ranked from most to least important, with weightings assigned to each. These weightings and stage sentiments are combined to produce stage scores and level scores (Welton *et al.*, 1994, p. 40). A principled score (*P*-score) is calculated based on a formula to denote the subject's ethical reasoning level.

Forsyth's (1980) ethics position questionnaire (EPQ) was adopted to measure the subjects' ethical orientation. The EPQ includes ten questions measuring subjects' idealism and ten measuring their level of relativism. Subjects are asked to indicate their degree of agreement or disagreement with each of these statements. The mean scores of their responses to the idealism items and relativism items are taken to be their EPQ scores.

Rotter's (1966) scale was adopted to classify subjects into "externals" and "internals." The instrument contains 23 paired statements. Each paired statement is characterized by an internal and an external statement. Subjects are required to choose either answer (a) or (b) in each of these statements. One point is awarded for each external statement chosen. The total scores of these 23 paired statements are used to classify subjects into "externals" and "internals." Subjects are required to provide their personal demographics:

- age;
- gender; and
- self-reported grade point average.

Administering the instrument

The accounting students were invited to participate in the study on a voluntary basis. The questionnaires together with covering letters were distributed at the end of the second semester. It was emphasized in the covering letter that the:

- four parts of the questionnaire are to be answered in the sequential order presented; and
- respondent is to complete the questionnaire by himself or herself without discussing it with anyone else.

Students completed the questionnaires at home and a majority of the questionnaires were returned to the researchers within one week.

There were 181 responses from the accounting students which represent a 41 percent response rate. These 181 responses were examined for their completeness as well as tested by means of two internal checks, the *M*-score check[5] and the consistency check[6], which were built in the ethical reasoning instrument to ensure the reliability of the data for the study. There were five incomplete responses, nine responses failing the *M*-score test and 11 responses failing the consistency check. These 25 responses were discarded leaving 156 usable responses for this study.

Data analysis and results

The possibility of a non-response bias in respect of the data was firstly examined. There were 29 respondents (late respondents) who have submitted their completed questionnaires a few days later than the majority who returned their completed questionnaires within one-week time (normal respondents). These late respondents were considered more like non-respondents[7] and were used as a surrogate for non-respondents. Responses of the normal respondents and late respondents (a surrogate for non-respondents) were compared for differences in means of the research variables, namely ethical sensitivity, ethical reasoning, ethical orientation (idealism and relativism), locus of control, age, gender and academic performance. Results of both Aspin-Welch unequal-variance *T*-test and Mann-Whitney *U*-test show that none of the research variables are different in means between the normal respondents and late respondents at a 0.05 level of significance.

As mentioned before, 156 usable responses were used in this study. The sample of subjects comprises 127 PU accounting students and 29 CU accounting students. There are 64 males (41 percent) and 92 females (59 percent). Age ranges from 20.91 (20 years and 11 months) to 28.25 (28 years and 3 months) with a mean of 22.63 (22 years and 7.5 months). The reported average academic performance in year one and year two undergraduate study is 3.71 (between grades C+ and B). The level of idealism of the respondents ranges from 2.6 to 8.3 (a high value reflects a more idealistic orientation) with a mean of 6.36. Their level of relativism ranges from 2.6 to 8.4 (a high value reflects a more relativistic orientation) with a mean of 5.98. The locus of control of the respondents ranges from 1 to 20 with a mean of 11.62 and a medium of 12. The medium of the locus of control score indicates that there are more "externals" (84 externals) than "internals" (72 internals). The average *P*-score of the subjects is 34.49 and the average ethical sensitivity is 1.53 which indicates that on average a subject was able to recognize 1.5 ethical issues in the scenario (out of three).

Since, subjects in this study are accounting students of two universities, a comparison of the mean scores of the research variables between the universities was done. Table I shows the results of the comparison. As the sample size of accounting students of the CU is less than 30, the non-parametric Mann-Whitney *U*-test is used.

The results of Table I indicate that accounting students of PU are significantly ($p = 0.000$) more sensitive to ethical issues than accounting students of CU. Accounting students of the PU also exhibit a moderately ($p = 0.075$) higher ethical reasoning than the CU accounting students. Results of testing the five demographic variables – level of idealism, level of relativism, locus of control, age, and academic performance – by the Mann-Whitney *U*-test do not show that these variables are statistically different between the accounting students of the two universities, at a 0.05 level of significance.

The relationships between the research variables were examined by a correlation matrix. Table II shows the results of testing of significance by both the parametric test (Pearson correlation test) and the non-parametric test (Spearman-rank correlation test).

Both the Pearson and the Spearman-rank correlation tests consistently show that locus of control is significantly associated (at the level of 0.05) with both ethical sensitivity and level of relativism of accounting students. Also, a significant association (at the level of 0.05) between level of idealism and ethical reasoning of accounting students is found by the two tests. However, both the Pearson and the Spearman-rank correlation tests do not show any significant association (at the level of either 0.05 or 0.10) between ethical sensitivity and ethical reasoning (*P*-score) of accounting students. The absolute magnitude of the Pearson correlation coefficient

Variables	Mean score $N = 156$	Comparison of mean scores (PU students:CU students)	Z-value ^a
Ethical sensitivity (0-3)	1.53	1.69:0.83	4.9890**
<i>Ethical reasoning</i> <i>P</i> -scores (0-100 percent)	34.49	35.35:30.69	1.7828
<i>Ethical orientation</i>			
Idealism (0-9)	6.36	6.40:6.17	1.1398
Relativism (0-9)	5.98	5.97:6.05	0.4240
Locus of control (0-23)	11.62	11.51:12.10	0.5622
Age (in year)	22.63	22.68:22.43	1.3040
Academic performance ($A^+ = 7 \dots B = 4 \dots D = 1$)	3.71	3.78:3.38	1.8490
	<i>Number</i>		
<i>Gender</i>			
Male	64		
Female	92		
<i>Universities</i>			
PolyU (PU)	127		
CityU (CU)	29		

Table I.
Demographic information
and comparison of mean
scores between
accounting students of
two universities

Notes: ^aMann-Whitney *U*-test approximation with correction of ties; **significant at 0.01; *significant at 0.05

	Ethical sensitivity	Ethical reasoning	Idealism	Relativism	Locus of control	Age	Gender	Academic performance
Ethical sensitivity	1.00 (1.00)							
Ethical reasoning	0.11 (0.09)	1.00 (1.00)						
Idealism	0.08 (0.07)	0.19* (0.18*)	1.00 (1.00)					
Relativism	-0.03 (-0.02)	0.00 (0.04)	-0.11 (-0.02)	1.00 (1.00)				
Locus of control	-0.19* (-0.18*)	-0.11 (-0.09)	-0.13 (-0.14)	0.20* (0.16*)	1.00 (1.00)			
Age	0.06 (0.11)	-0.07 (0.01)	-0.10 (0.00)	0.08 (0.05)	0.05 (0.01)	1.00 (1.00)		
Gender	-0.11 (-0.10)	0.08 (0.06)	0.06 (0.06)	-0.03 (-0.02)	0.12 (0.15)	-0.07 (-0.14)	1.00 (1.00)	
Academic performance	0.00 (0.01)	0.00 (-0.01)	0.01 (-0.01)	0.04 (0.04)	-0.12 (-0.16*)	-0.14 (-0.18*)	-0.03 (-0.04)	1.00 (1.00)

Note: *Significant at 0.05

Table II.
Correlation matrix
(Pearson correlation
(Spearman-rank
correlation))

between ethical sensitivity and ethical reasoning (P -score) of accounting students is not higher than 0.11.

Since, the dependent variable, ethical sensitivity of accounting students, is a polytomous ordinal variable rather than a continuous variable, an ordinal logistic regressive method was employed to test the seven hypotheses $H01-H07$. As mentioned in the previous paragraph, comparison of the mean scores of the research variables indicates that accounting students of the two universities are significantly different in their ethical sensitivity. A dummy variable, campus, is thus added as an independent variable with 1 representing PU and 2 representing CU to capture the institutional difference in accounting students' ethical sensitivity in the regression analysis. The ordinal logistic regression report is shown in Table III.

Results of Table III show that out of the eight independent variables, the two variables, campus and locus of control, show significant relationship with the accounting students' ethical sensitivity ($p = 0.000$ and $p = 0.029$ for campus and locus of control, respectively). Thus, of the seven hypotheses, only $H04$ is rejected. The negative sign of estimated parameter of the variable campus indicates that accounting students of PU are more sensitive to recognize ethical issues than accounting students of CU. Similarly, the negative sign of the regression coefficient of the variable locus of control indicates that accounting students characterized as "internals" are more sensitive in recognizing ethical issues than accounting students characterized as "externals."

Shaub's (1989) ethics sensitivity instrument contains three ethical issues. These three ethical issues are:

- (1) staff failing to charge time required completing the job (eating hours);
- (2) using office time to write a note to a prospective employer (using firm time for personal matter); and
- (3) subordination of an auditor's judgment over an issue involving generally accepted accounting principles (subordination of judgment).

Dependent variable: ethical sensitivity			
<i>Independent variable</i>	<i>Estimated parameter</i>	<i>Standard error</i>	<i>Wald value</i>
Intercept1	- 5.681	3.730	2.320
Intercept2	- 3.609	3.704	0.949
Intercept3	- 0.198	3.706	0.003
Campus	- 2.182	0.442	24.394 **
Ethical reasoning (P -score)	0.006	0.012	0.236
Idealism	0.054	0.164	0.107
Relativism	0.048	0.164	0.084
Locus of control	- 0.093	0.043	4.747 *
Age	0.032	0.133	0.057
Gender	- 0.245	0.329	0.554
Academic performance	- 0.212	0.170	1.561
Final model: $\chi^2 = 35.021$ ($p = 0.000$)			

Notes: **Significant at 0.01; *significant at 0.05

Table III.
Ordinal logistic
regression report

To further investigate the accounting students' ethical sensitivity development, detailed analyses of responses to these ethical issues in respect of the accounting students were done. The results are shown in Table IV.

As seen from Table IV, 72 percent of the accounting students (113 students) correctly recognized the issue of "eating hours" in the scenario. Examining the rating of importance in respect of the ethical issue by these 113 accounting students reveals that 70.8 percent of them (80 students) rated the issue at 5 or above (i.e. high importance) and 29.2 percent of them (33 students) rated the issue below 5 (i.e. low importance). Testing of the difference between the proportion of accounting students rating the ethical issue of high importance with the proportion of accounting students rating the ethical issue of low importance was performed under the Fisher's exact test and the χ^2 -test (with Yates correction for continuity). Both tests indicate that there is a significant difference between the two proportions at a level of 0.01.

For the issue "personal use of firm time" in the scenario, only 14 percent of the accounting students (22 students) correctly recognized it. Both the Fisher's exact test and the χ^2 -test do not indicate that there is a significant difference between the proportion of accounting students rating the ethical issue of high importance and the proportion of accounting students rating the ethical issue of low importance.

Finally, 66 percent of the accounting students (103 students) correctly recognized the issue of "subordination of judgment." Both the Fisher's exact test and the χ^2 -test indicate that there is a significant difference between the proportion of accounting students rating the ethical issue of high importance and the proportion of accounting students rating the ethical issue of low importance at a level of 0.01.

As explained previously, results of the multivariate analysis by an ordinal logistic regressive model indicate that only two independent variables, campus and locus of control, show significant relationship with accounting students' ethical sensitivity. A univariate analysis, the non-parametric Mann-Whitney *U*-test, was then employed to compare the mean scores of ethical sensitivity of the accounting students of the two universities as well as to compare the mean score of ethical sensitivity of the "internal" accounting students with that of the "external" accounting students. Results of the analysis show that there is a significant difference (*Z*-value = 4.989, *p* = 0.000) between the ethical sensitivity of PU's accounting students and that of CU's accounting students. Accounting students of PU are more sensitive to the ethical issues than the

	Mean score	Proportion of rating (high importance:low importance)	Fisher's exact test ($H_0: P_1 - P_2 = 0$)	Yates χ^2 -test
<i>Ethical sensitivity (0-3)</i>				
Eating hours	0.72 (113)	0.708 (80):0.292 (33)	<i>p</i> = 0.000	$\chi^2 = 37.451$ <i>p</i> = 0.000
Personal use of firm time	0.14 (22)	0.545 (12):0.455 (10)	<i>p</i> = 0.763	$\chi^2 = 0.091$ <i>p</i> = 0.763
Subordination of judgment	0.66 (103)	0.883 (91):0.117 (12)	<i>p</i> = 0.000	$\chi^2 = 118.136$ <i>p</i> = 0.000

Note: Figures inside parentheses represent number of students

Table IV. Responses of accounting students to ethical issues

accounting students of CU. Meanwhile, there is a moderate difference (Z -value = 1.752, $p = 0.080$) between the ethical sensitivity of the “internal” accounting students and that of the “external” accounting students. Accounting students characterized as “internals” are more readily able to recognize ethical issues than those characterized as “externals.”

Summary and discussion

By both correlation analysis and ordinal logistic regressive modelling, this study has found that there is no significant association between accounting students’ ethical sensitivity and ethical reasoning (operationized in terms of principled score – P -score). The absolute Pearson correlation coefficient between the accounting students’ ethical sensitivity and ethical reasoning is only 0.11. This finding is consistent with the findings in prior studies (Rest, 1986; Shaub, 1989; Patterson, 2001) and provides additional empirical evidence to support Rest’s theory. Rest’s (1983) theory postulates that morality is not a single, unitary process and that ethical sensitivity and ethical judgment are two of the four separable components. Accounting students in this study were also found to vary in their sensitivity to ethical issues in terms of their ability to identify the three embedded ethical issues in the auditing scenario as well as their perception in relation to the importance of three ethical issues being identified. This finding is also consistent with the ethics literature (Staub, 1978; Rest, 1986; Bebeau *et al.*, 1981, 1985).

Recent accounting research on ethical issues in accounting has focused very much on the ethical reasoning dimension. These studies may presuppose that individuals possess invariable ability to recognize ethical issues in a situation, or they may consider that ethical decision-making is a single cognitive process. Both presumptions are not valid. Findings of ethics research in the context of Rest’s (1983) four-component model, including this study, provide empirical evidence to support the view that morality is a complex multiple-faceted process, with ethical sensitivity and ethical reasoning interacting as separable components in the process. An individual who demonstrates adequacy in ethical reasoning may not necessarily be adequate in ethical sensitivity. Hence, an individual who possesses a good ability to determine what is ethically right or wrong (high ethical reasoning) may fail to behave ethically as a result of his deficiency in identifying ethical issues (low ethical sensitivity) in the situation that he encountered.

To enhance the ethical conduct of professional accountants, it is important that the accountancy profession and researchers should also direct their attention and efforts to the ethical sensitivity of professional accountants. More research efforts should be devoted to studying ethical sensitivity in order to understand how it interacts with other components in Rest’s (1983) four-component model, its relationship with ethical behavior of professional accountants, and to explore the means to strengthen professional accountants’ ethical sensitivity.

The effects of accounting students’ personal factors such as ethical orientation (level of idealism and level of relativism), locus of control, gender, age and academic performance on their ethical sensitivity were evaluated by the six null hypotheses, $H02$ - $H07$, in this study. Only the personality trait, locus of control, was found significantly associated with ethical sensitivity in the multivariate logistic regression model. This finding was further confirmed by the univariate analysis. Accounting

students characterized as "internals" were more consistently able to recognize ethical issues than those characterized as "externals." The finding provides additional understanding of professional accountants' resolutions of ethical dilemmas within Rest's (1983) ethical decision-making model.

In the ethics literature, "internals" are often found to be more ethical than "externals." For example, Hegarty and Sims (1978, 1979) conducted laboratory experiments to examine the effects of locus of control on ethical decision-making and reported that "externals" were less ethical than "internals"; Trevino (1987) tested the relationship between locus of control and ethical behavior in business and reported that "internals" were not only more ethical than "externals," but also more frequent in making ethical decisions; Trevino and Youngblood (1990) reported in their study that "internals" exhibited more ethical behavior than "externals." These findings may be attributable to "internals" being more likely to recognize ethical issue than "externals."

Accounting students' ethical orientation, in terms of their level of idealism and level of relativism, was not shown to be significantly associated with their ability to recognize ethical issues in a professional context. However, idealism was found to have a positive correlation coefficient with ethical sensitivity. A more idealistic oriented accounting student was more sensitive to professional issues such as eating hours, subordination of judgment and using firm time for personal matter for he or she visualized them as causing harm to others. On the other hand, relativism was found to have a negative correlation coefficient with ethical sensitivity. This indicates that a more relativistic oriented accounting student was less likely to detect ethical issues in the professional scenario.

Age was found to have a positive correlation coefficient with ethical sensitivity. This indicates that older accounting students were more likely to detect ethical issues in the professional scenario. Nevertheless, the association of accounting students' ethical sensitivity level with their age was not found to be significant in the multivariate analysis. This finding is inconsistent with that in the prior studies (Shaub, 1989; Karcher, 1996). The mean age of the subjects (auditors) in Shaub's (1989) study was 27 and has argued that it is the general life experiences that make a person sensitive to the ethic content of situations. It may be here that the subjects, who are accounting students with a mean age of 22.63, are relatively green in their general life experience. Thus, age here does not show a significant effect on accounting students' ethical sensitivity.

Results of this study indicate that the ability to recognize ethical issues in a professional scenario does not depend on accounting students' academic achievement. Also, gender was not found to be significantly associated with accounting students' ability to recognize ethical issues in a professional scenario. Female and male accounting students here react similarly to ethically sensitive situations in a professional context. Rest (1986) summarized the results of 500 studies and concluded that moral reasoning differences between the genders are insignificant. The findings of insignificant differences between the genders in ethical sensitivity and ethical reasoning of Rest's (1983) four-component model appear to undermine the argument that female professional accountants are more ethical than their male counterparts leading to a need of more females at the higher rank in the accountancy profession in order to improve its ethical atmosphere.

Although no specific hypothesis is generated to test the differences in accounting students' ethical sensitivity between the two universities, both multivariate and

univariate analyses show that the accounting students of PU have higher ethical sensitivity ability than their counterparts of CU. The two universities differ in offering accounting ethics interventions to their accounting students. CU's accounting students are given a few hours of integrated ethical interventions whereas PU offers a core course of "Ethics in Accountancy" in its accountancy degree curriculum to its accounting students.

The finding that accounting students receiving a specific accounting ethics intervention are more sensitive to ethical issues in a professional scenario suggests the possible impact of accounting ethics education on accounting students' ethical sensitivity development. Accounting ethics education is considered an effective means which the accountancy profession and the academic community use to strengthen professional accountants' ethical conduct. It is well documented in the ethics education literature that specific accounting ethics interventions foster ethical reasoning development of accounting students and practitioners (Rest, 1986; Armstrong, 1993; Welton *et al.*, 1994; LaGrone *et al.*, 1996; Green and Weber, 1997). Concurrent with the research efforts in the effectiveness of accounting ethics interventions on ethical reasoning development, future research should be designed to offer empirical evidence on how ethical sensitivity of accounting students is affected by specific accounting ethics interventions. The empirical evidence of this type of research will provide insight to accounting educators and practitioners in developing curriculum in accounting programmes.

The generalizability of the results of this study to other accounting students in different settings is subject to the potential non-response bias[8], and to the limitations of the cross sectional, single-period nature of this study. The results of this study need to be interpreted in light of the possible weakness of the measures used for the variables. These include the ethical sensitivity being measured by a single scenario[9] and the bias associated with the self-reporting age and academic performance.

Notes

1. In common usage, the word moral is used interchangeably with ethical (Colby and Kohlberg, 1987, p. 23). The word morality is used interchangeably with ethics (Rest and Narvaez, 1994, p. xi). The term MJ, ethical judgment, moral reasoning and ethical reasoning are recognized in the literature to be similar in meaning (Bebeau *et al.*, 1985, p. 226; Tsui, 1994, p. 17). They are, therefore, used interchangeably in this paper.
2. "Role-set configuration" refers to "how an individual evaluates his/her role in relation to superiors and peers" (Patterson, 2001, p. 127).
3. Names of the professional accountants and companies as well as some wording in the scenario were changed to adapt the context of the scenario to the Hong Kong environment so that subjects in this study who are Chinese are more familiar with it.
4. In the questionnaire of this study, only three scenarios of the original instrument were adapted and used. The scenario "The bank audit" has been excluded as it is related to issues of military base, federal funding and congressional delegates. These issues are uncommon for Hong Kong people and, hence, the subjects in this study may not appreciate the case. Names of the parties and companies as well as some wordings in these three scenarios were changed in order to adapt the context of the scenarios to the Hong Kong environment.
5. There are M items on the ethical reasoning questionnaire which are written to sound lofty, pretentious and meaningless. These items do not represent any stage or level of ethical reasoning. These items, if ranked by a subject as important, represent the subject's tendency to endorse pretentious statements rather than meaningful statements. If M items are

- consistently rated and ranked high by a subject, it means that the subject has not completed the questionnaire conscientiously and properly. The questionnaire must then be discarded. According to Rest (1990), for a three-story version questionnaire, if a subject's raw *M*-score is greater than 4, then the subject's questionnaire should be discarded.
6. This check requires comparing the subject's ratings of each of the twelve statements on a five-point scale with his or her choice of the four most important statements among the twelve. The focus of the test is on a subject's first and second choices. Inconsistency appears when a subject chooses one statement as the most important but there is another statement which is being given higher rating on the five-point scale than this top-choice statement. Similarly, inconsistency appears if there are statements which are not chosen as first or second choices, yet they have a higher rating on the five-point scale than the statement chosen as first or second choices. These inconsistencies, as suggested by Rest (1990), may be due to careless responding, random checking, misunderstanding of instructions, changing one's mind about an item, etc. For a three-story version questionnaire, Rest (1990) suggested the following rule of thumb – a questionnaire should be discarded if it is found in the first and second ranks that: there is more than one story with inconsistencies; or any one story has more than eight inconsistencies. Also, a subject may not take the test seriously and show little discrimination in his or her ratings. If this is the case, the questionnaire should be discarded as well. For this research, if it is found in more than one story that more than nine statements are rated the same by the subject, the questionnaire will be discarded.
 7. In the behavioural research literature, it is not uncommon for researchers to use respondents who respond "less readily" as a surrogate for non-respondents to test the possibility of a non-response bias (Shaub, 1989; Ueno and Wu, 1993).
 8. The non-response bias of accounting students was evaluated in this study. The effect of non-response bias is considered minimal in this study though potential existence of it must be recognized.
 9. Ethical sensitivity is better measured using multiple scenarios so that consistency of performance or behaviour across the situations can be checked (Patterson, 2001, p. 130).

References

- Allen, P.W. and Ng, C.K. (2001), "Self interest among CPAs may influence their moral reasoning", *Journal of Business Ethics*, Vol. 33 No. 1, pp. 29-35.
- Armstrong, M. (1984), "Internalization of the professional ethic by certified public accountants: a multidimensional scaling approach", PhD dissertation, University of Southern California, Los Angeles, CA.
- Armstrong, M. (1987), "Moral development and accounting education", *Journal of Accounting Education*, Spring, pp. 27-43.
- Armstrong, M. (1993), "Ethics and professionalism in accounting education: a sample course", *Journal of Accounting Education*, Vol. 11, pp. 77-92.
- Arnold, D. and Ponemon, L. (1991), "Internal auditors' perceptions of whistle-blowing and the influence of moral reasoning: an experiment", *Auditing: A Journal of Practice & Theory*, Fall, pp. 1-15.
- Bebeau, M.J., Reifel, N.M. and Speidel, T.M. (1981), "Measuring the type and frequency of professional dilemmas in dentistry", *Journal of Dental Research*, Vol. 60, Abstract No. 891, March.
- Bebeau, M.J., Rest, J.R. and Yamoore, C.M. (1985), "Measuring dental students' ethical sensitivity", *Journal of Dental Education*, Vol. 49, pp. 225-35.

- Bernardi, R. (1991), "Fraud detection: an experiment testing differences in perceived client integrity and competence, individual auditor cognitive style and experience, and accounting firms", PhD dissertation, Union College, Schenectady, NY.
- Bloomberg, M. and Soneson, S. (1976), "The effects of locus of control and field independence-dependence on moral reasoning", *The Journal of Genetic Psychology*, Vol. 128, pp. 59-66.
- Bommer, M., Gratto, C., Gravander, J. and Tuttle, M. (1987), "A behavioural model of ethical and unethical decision making", *Journal of Business Ethics*, Vol. 6, pp. 265-80.
- Buchan, H.F. (2005), "Ethical decision making in the public accounting profession: an extension of Ajzen's theory of planned behavior", *Journal of Business Ethics*, Vol. 61 No. 2, pp. 165-81.
- Chiu, R.K. (2003), "Ethical judgment and whistle blowing intention: examining the moderating role of locus of control", *Journal of Business Ethics*, Vol. 43 Nos 1/2, pp. 65-74.
- Cohen, J.R., Pant, L.W. and Sharp, D.J. (2001), "An examination of differences in ethical decision-making between Canadian business students and accounting professionals", *Journal of Business Ethics*, Vol. 30 No. 4, pp. 319-36.
- Colby, A. and Kohlberg, L. (1987), *The Measurement of Moral Judgment*, Cambridge University Press, New York, NY.
- Colby, A., Kohlberg, L., Gibbs, J. and Lieberman, M. (1983), "A longitudinal study of moral judgment", *SRCD Monograph*, 48, 1-2, Serial No. 200.
- Ellas, R.Z. (2002), "Determinants of earnings management ethics among accountants", *Journal of Business Ethics*, Vol. 40 No. 1, pp. 33-45.
- Finn, D.W. and Lampe, J. (1992), "A study of whistle-blowing among auditors", *Professional Ethics*, pp. 137-68.
- Finn, D.W., Chonko, L.B. and Hunt, S.D. (1988), "Ethical problems in public accounting: the view from the top", *Journal of Business Ethics*, Vol. 7, pp. 605-15.
- Forsyth, D.R. (1980), "A taxonomy of ethical ideologies", *Journal of Personality and Social Psychology*, Vol. 39, pp. 175-84.
- Green, S. and Weber, J. (1997), "Influencing ethical development: exposing students to the AICPA code of conduct", *Journal of Business Ethics*, Vol. 16, pp. 777-90.
- Gul, F.A., Ng, A.Y. and Tong, M.W. (2003), "Chinese auditors' ethical behavior in an audit conflict situation", *Journal of Business Ethics*, Vol. 42 No. 4, pp. 379-92.
- Hegarty, W.H. and Sims, H.P. Jr (1978), "Some determinants of unethical decision behaviour: an experiment", *Journal of Applied Psychology*, Vol. 63 No. 4, pp. 451-7.
- Hegarty, W.H. and Sims, H.P. Jr (1979), "Organizational philosophy, policies and objectives related to unethical decision behaviour: a laboratory experiment", *Journal of Applied Psychology*, Vol. 64, pp. 331-8.
- Hiltebeitel, K.M. and Jones, S.K. (1991), "Initial evidence on the impact of integrating ethics into accounting education", *Issues in Accounting Education*, Fall, pp. 262-75.
- Hiltebeitel, K.M. and Jones, S.K. (1992), "An assessment of ethics instruction in accounting education", *Journal of Business Ethics*, Vol. 11, pp. 37-46.
- Hoffman, M.L. (1981), "Is altruism part of human nature", *Journal of Personality and Social Psychology*, Vol. 40, pp. 121-37.
- Hunt, S.D. and Vitell, S. (1992), "The general theory of marketing ethics: a retrospective and revision", in Quelch, J. and Smith, C. (Eds), *Ethics in Marketing*, Irwin, Homewood, IL.
- Jeffrey, C. (1993), "Ethical development of accounting students, non-accounting business students, and liberal arts students", *Issues in Accounting Education*, Vol. 8 No. 1, pp. 86-96.

- Jeffrey, C. and Weatherholt, N. (1996), "Ethical development, professional commitment, and rule observance attitudes: a study of CPAs and corporate accountants", *Behavioral Research in Accounting*, Vol. 8, pp. 8-31.
- Karcher, J.N. (1996), "Auditors' ability to discern the presence of ethical problems", *Journal of Business Ethics*, Vol. 15 No. 10, pp. 1033-50.
- Kite, D., Louwers, T. and Radtke, R. (1996), "Ethics and environmental auditing: an investigation of environmental auditors' levels of moral reasoning", *Behavioral Research in Accounting*, Supplement, Vol. 8, pp. 200-14.
- Koford, K. and Penno, M. (1992), "Accounting, principal agent theory, and self-interested behaviour", in Bowie, N.E. and Freeman, R.E. (Eds), *Ethics and Agency Theory an Introduction*, Oxford University Press, New York, NY, p. 128.
- Kohlberg, L. (1969), "Stages and sequences: the cognitive development approach to socialization", in Goslin, D.A. (Ed.), *Handbook of Socialization Theory and Research*, Rand McNally, Chicago, IL, pp. 346-480.
- LaGrone, R.M., Welton, R.E. and Davis, J.R. (1996), "Are the effects of accounting ethics interventions transitory or persistent", *Journal of Accounting Education*, Vol. 14 No. 3, pp. 259-78.
- Lampe, J. (1994), "The impact of ethics education in accounting curricula", *Proceedings of the Ernst & Young Research on Accounting Ethics Symposium*, pp. 220-36.
- Lampe, J.C. and Finn, D.W. (1992), "A model of auditors' ethical decision process", *Auditing: A Journal of Practice & Theory*, Supplement, pp. 1-21.
- Lefcourt, H.M. (1982), *Locus of Control Current Trends in Theory and Research*, 2nd ed., Lawrence Erlbaum Associates, Hillsdale, NJ.
- Leung, P. and Cooper, B.J. (1995), "Ethical dilemmas in accountancy practice", *Australian Accountant*, May, pp. 28-32.
- Louwers, T.J., Ponemon, L.A. and Radtke, R.R. (1997), "Examining accountants' ethical behavior: a review and implications for future research", in Arnold, V. and Sutton, S.G. (Eds), *Behavioral Accounting Research: Foundations and Frontiers*, Chapter 6, American Accounting Association, Sarasota, FL, pp. 188-221.
- Lovell, A. (1997), "Some thoughts on Kohlberg's hierarchy of moral reasoning and its relevance for accounting theories of control", *Accounting Education*, Vol. 6 No. 2, pp. 147-62.
- Maqsd, M. (1980), "Locus of control and stages of moral reasoning", *Psychological Report*, Vol. 46, pp. 1243-8.
- Mele, D. (2005), "Ethical education in accounting: integrating rules, values and virtue", *Journal of Business Ethics*, Vol. 57 No. 1, pp. 97-109.
- Molyneaux, D. (2005), "After Andersen: an experience of integrating ethics into undergraduate accountancy education", *Journal of Business Ethics*, Vol. 54 No. 4, pp. 385-98.
- Patterson, D.M. (2001), "Causal effects of regulatory, organizational and personal factors on ethical sensitivity", *Journal of Business Ethics*, Vol. 30, pp. 123-59.
- Ponemon, L. (1988), "A cognitive developmental approach to the analysis of certified public accountants' ethical judgments", PhD dissertation, Union College, Schenectady, NY.
- Ponemon, L. (1990), "Ethical judgments in accounting: a cognitive-developmental perspective", *Critical Prospective on Accounting*, Vol. 1, pp. 191-215.
- Ponemon, L. (1992), "Ethical reasoning and selection-socialization in accounting", *Accounting, Organizations and Society*, April/May, pp. 239-58.
- Ponemon, L. (1993), "Can ethics be taught in accounting", *Journal of Accounting Education*, Vol. 11, pp. 185-209.

- Ponemon, L. (1995), "The objectivity of accountants' litigation support judgments", *The Accounting Review*, July, pp. 467-88.
- Ponemon, L.A. and Gabhart, D.R.L. (1990), "Auditor independence judgments: a cognitive development model and experimental evidence", *Contemporary Accounting Research*, Vol. 7 No. 1, pp. 227-51.
- Ponemon, L.A. and Gabhart, D.R.L. (1993), "Ethical reasoning in accounting and auditing", Research Monograph Number 21, CGA-Canada Research Foundation.
- Ponemon, L.A. and Gabhart, D.R.L. (1994), "Ethical reasoning research in the accounting and auditing professions", in Rest, J.R. and Narvaez, D. (Eds), *Moral Development in the Professions Psychology and Applied Ethics*, Chapter 6, Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 101-19.
- Ponemon, L. and Glazer, A. (1990), "Accounting education and ethical development: the influence of liberal learning on students and alumni in accounting practice", *Issues in Accounting Education*, Vol. 6 No. 2, pp. 195-208.
- Rest, J.R. (1979), *Development in Judging Moral Issue*, University of Minnesota Press, Minneapolis, MN.
- Rest, J.R. (1983), "Morality", in Flavell, J. and Markman, E. (Eds), *Handbook of Child Psychology*, 4th ed., Vol. III, Wiley, New York, NY, Cognitive Development, Mussen, P. (ed.).
- Rest, J.R. (1986), *Moral Development – Advances in Research and Theory*, Praeger, New York, NY.
- Rest, J.R. (1990), *DIT Manual*, 3rd ed., Centre for the study of Ethical Development, University of Minnesota, Minneapolis, MN.
- Rest, J.R. and Narvaez, D. (1994), *Moral Development in the Professions: Psychology and Applied Ethics*, Lawrence Erlbaum Associates, Hillsdale, NJ.
- Rotter, J.B. (1966), "Generalized expectancies for internal versus external control of reinforcement", *Psychological Monograph, General and Applied*, Vol. 80 No. 1, (Whole No. 609).
- Ryan, J.J. (2001), "Moral reasoning as a determinant of organizational citizenship behaviors: a study in the public accounting profession", *Journal of Business Ethics*, Vol. 33 No. 3, pp. 233-44.
- Schlenker, B.R. and Forsyth, D.R. (1977), "On the ethics of psychological research", *Journal of Experimental Social Psychology*, Vol. 13, pp. 369-96.
- Shaub, M. (1989), "An empirical examination of the determinants of auditors' ethical sensitivity", PhD dissertation, Texas Tech University, Lubbock, TX.
- Shaub, M. (1991), "An analysis of factors affecting the cognitive moral development of auditors and auditing students", working paper, University of Nebraska.
- Shaub, M. (1994), "An analysis of the association of traditional demographic variables with the moral reasoning of auditing students and auditors", *Journal of Accounting Education*, Vol. 12 No. 1, pp. 1-26.
- Shaub, M. and Lawrence, J. (1996), "Ethics, experience, and professional skepticism: a situational analysis", *Behavioural Research in Accounting*, Supplement, Vol. 8, pp. 124-57.
- Shaub, M., Finn, D.W. and Munter, P. (1993), "The effects of auditors' ethical orientation on commitment and ethical sensitivity", *Behavioural Research in Accounting*, Vol. 5, pp. 145-69.
- Simga-Maugan, C.D., Bonita, A., Onkal, D. and Kavut, L. (2005), "The influence of nationality and gender on ethical sensitivity: an application of the issue-contingent model", *Journal of Business Ethics*, Vol. 57 No. 2, pp. 139-59.
- Spickelmier, J.L. (1983), "College experience and moral judgment development", unpublished doctoral dissertation, University of Minnesota, Minneapolis, MN.

-
- Staub, E. (1978), *Positive Social Behaviour and Morality: Volume 1, Social and Personal Influences*, Academic Press, New York, NY.
- St Pierre, K., Nelson, E. and Gabbin, A. (1990), "A study of the ethical development of accounting majors in relation to other business and non-business disciplines", *The Accounting Educators' Journal*, pp. 23-35, Summer.
- Sweeney, J. (1995), "The moral expertise of auditors: an exploratory analysis", *Research on Accounting Ethics*, Vol. 1, pp. 213-34.
- Thoma, S.J. (1984), "Estimating gender differences in the comprehension and preference of moral issues", University of Minnesota, Minneapolis, MN, unpublished manuscript.
- Thorne, L. (1999), "An analysis of the association of demographic variables with the cognitive moral development of Canadian accounting students: an examination of the applicability of American-based findings to the Canadian context", *Journal of Accounting Education*, Vol. 17, pp. 157-74.
- Trevino, L.K. (1987), "The influences of vicarious learning and individual differences on ethical decision making in the organization: an experiment", unpublished dissertation.
- Trevino, L.K. and Youngblood, S.A. (1990), "Bad apples in bad barrels: a causal analysis of ethical decision-making behavior", *Journal of Applied Psychology*, Vol. 75 No. 4, pp. 378-85.
- Tsui, J. (1994), "Auditors' ethical behaviour; a study of the determinants of auditors' decision making in an audit conflict situation", unpublished doctoral dissertation, The Chinese University of Hong Kong, Hong Kong.
- Tsui, J. and Gul, F. (1996), "Auditors' behaviour in an audit conflict situation: a research note on the role of locus of control and ethical reasoning", *Accounting, Organizations and Society*, Vol. 21 No. 1, pp. 41-51.
- Uddin, N. and Gillett, P.R. (2002), "The effects of moral reasoning and self-monitoring on CFO intentions to report fraudulently on financial statements", *Journal of Business Ethics*, Vol. 40 No. 1, pp. 15-32.
- Ueno, S. and Wu, F.H. (1993), "The comparative influence of culture on budget control practices in the United States and Japan", *The International Journal of Accounting*, Vol. 28, pp. 17-39.
- Volker, J.M. (1984), "Counseling experience, moral judgment, awareness of consequences, and moral sensitivity in counseling practice", unpublished doctoral dissertation, University of Minnesota Press, Minneapolis, MN.
- Welton, R.E., LaGrone, R.M. and Davis, J.R. (1994), "Promoting the moral development of accounting graduate students: an instructional design and assessment", *Accounting Education*, Vol. 3 No. 1, pp. 35-50.
- Windsor, C. and Ashkanasy, N. (1995), "Moral reasoning development and belief in a just world as precursors of auditor independence: the role of organizational culture perceptions", *Proceedings of the Second Annual ABO Research Conference*.
- Zajonc, R.B. (1980), "Feeling and thinking: preferences need no inferences", *American Psychologist*, Vol. 35, pp. 151-75.

Corresponding author

Philomena Leung can be contacted at: pleung@deakin.edu.au

To purchase reprints of this article please e-mail: reprints@emeraldinsight.com
Or visit our web site for further details: www.emeraldinsight.com/reprints

This article has been cited by:

1. Anne Christensen, Jane Cote, Claire Kamm Latham. 2016. Developing Ethical Confidence: The Impact of Action-Oriented Ethics Instruction in an Accounting Curriculum. *Journal of Business Ethics* . [[CrossRef](#)]
2. Zhanna Bagdasarov, April Martin, Rahul Chauhan, Shane Connelly. 2016. Aristotle, Kant, and... Facebook? A Look at the Implications of Social Media on Ethics. *Ethics & Behavior* . [[CrossRef](#)]
3. Ahmed Musbah, Christopher J. Cowton, David Tyfa. 2016. The Role of Individual Variables, Organizational Variables and Moral Intensity Dimensions in Libyan Management Accountants' Ethical Decision Making. *Journal of Business Ethics* **134**:3, 335-358. [[CrossRef](#)]
4. Anne L. Christensen, Jane Cote, Claire K. Latham. 2016. Insights Regarding the Applicability of the Defining Issues Test to Advance Ethics Research with Accounting Students: A Meta-analytic Review. *Journal of Business Ethics* **133**:1, 141-163. [[CrossRef](#)]
5. Jose-Luis Godos-Díez, Roberto Fernández-Gago, Laura Cabeza-García. 2015. Business Education and Idealism as Determinants of Stakeholder Orientation. *Journal of Business Ethics* **131**:2, 439-452. [[CrossRef](#)]
6. Kevin Lehnert, Yung-hwal Park, Nitish Singh. 2015. Research Note and Review of the Empirical Ethical Decision-Making Literature: Boundary Conditions and Extensions. *Journal of Business Ethics* **129**:1, 195-219. [[CrossRef](#)]
7. Nonna Martinov-Bennie, Rosina Mladenovic. 2015. Investigation of the Impact of an Ethical Framework and an Integrated Ethics Education on Accounting Students' Ethical Sensitivity and Judgment. *Journal of Business Ethics* **127**:1, 189-203. [[CrossRef](#)]
8. Chung-wen Chen School of Management, National Taiwan University of Science and Technology, Taipei, Taiwan . 2014. Does job position moderate the relationship between gender and ethics?: a cross-cultural analysis. *Cross Cultural Management: An International Journal* **21**:4, 437-452. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
9. Dr Nicholas Koumbiadis, Dr John O. Okpara and Dr Ganesh M. Pandit Nicholas Koumbiadis Department of Accounting and Law, Robert B. Willumstad School of Business, Adelphi University, Garden City, New York, USA Ganesh M. Pandit Department of Accounting and Law, Robert B. Willumstad School of Business, Adelphi University, Garden City, New York, USA . 2014. Has the AICPA changed the accounting profession for better or worse?. *Journal of Accounting & Organizational Change* **10**:2, 190-215. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
10. J.A. Ballantine, P. McCourt Larres, M. Mulgrew. 2014. Determinants of academic cheating behavior: The future for accountancy in Ireland. *Accounting Forum* **38**:1, 55-66. [[CrossRef](#)]
11. Adriaan Taylor School of Accounting, Central University of Technology, Bloemfontein, South Africa . 2013. Ethics training for accountants: does it add up?. *Meditari Accountancy Research* **21**:2, 161-177. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
12. Jana L. Craft. 2013. A Review of the Empirical Ethical Decision-Making Literature: 2004-2011. *Journal of Business Ethics* **117**:2, 221-259. [[CrossRef](#)]
13. Jane Cote, Claire Kamm Latham and Debra Sanders Ethical Financial Reporting Choice: The Influence of Individual Characteristics 115-148. [[Abstract](#)] [[Full Text](#)] [[PDF](#)] [[PDF](#)]
14. Melodena Stephens Balakrishnan, Naeem Muhammad and Arijit Sikdar Leonie Jooste Faculty of Accounting and Finance, University of Wollongong in Dubai, Dubai, UAE and Faculty of Economic and Management Sciences, Nelson Mandela Metropolitan University, Port Elizabeth, South Africa. 2013.

- Investigating ethical perceptions of short-term earnings management practices. *International Journal of Emerging Markets* 8:3, 282-299. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
15. Joyce K. H. Nga, Evelyn W. S. Lum. 2013. An Investigation into Unethical Behavior Intentions Among Undergraduate Students: A Malaysian Study. *Journal of Academic Ethics* 11:1, 45-71. [[CrossRef](#)]
 16. Maisarah Mohamed Saat, Stacey Porter, Gordon Woodbine. 2012. A Longitudinal Study of Accounting Students' Ethical Judgement Making Ability. *Accounting Education* 21:3, 215-229. [[CrossRef](#)]
 17. Marcela Espinosa-Pike, Edurne Aldazabal, Ana Martín-Arroyuelos. 2012. Influence of Gender and Ethical Training on University Teachers Sensitivity Towards the Integration of Ethics in Business Studies. *Journal of Academic Ethics* 10:1, 9-25. [[CrossRef](#)]
 18. Kevin Celuch, Andy Dill. 2011. An Extension of the Theory of Reasoned Action in Ethical Decision Contexts: The Role of Normative Influence and Ethical Judgment. *Journal of Education for Business* 86:4, 201-207. [[CrossRef](#)]
 19. Seleshi SisayePalumbo-Donahue School of Business, Duquesne University, Pittsburgh, Pennsylvania, USA. 2011. The functional-institutional and consequential-conflictual sociological approaches to accounting ethics education. *Managerial Auditing Journal* 26:3, 263-294. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
 20. Ahmad ModarresAssistant Professor in the Department of Accounting, Faculty of Management, University of Tehran, Tehran, Iran Afsaneh RafieePhD Candidate in Accounting, University of Tehran, Tehran, Iran. 2011. Influencing factors on the ethical decision making of Iranian accountants. *Social Responsibility Journal* 7:1, 136-144. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
 21. Dennis W. Catlin, Carlos E. Posadas, Lisa J. Bond-Maupin, James R. Maupin. 2011. The Impact of Juvenile Court Judge Ethical Orientation on Decision Making. *Juvenile and Family Court Journal* 62:2, 53-61. [[CrossRef](#)]
 22. Maria Krambia-Kapardis, Anastasios Zopiatis. 2011. Personal values of accountants and accounting trainees in Cyprus. *Business Ethics: A European Review* 20:1, 59-70. [[CrossRef](#)]
 23. Maisarah Mohamed SaatDepartment of Management, Faculty of Management and Human Resource Development, Universiti Teknologi Malaysia, Johor Bahru, Malaysia Stacey PorterSchool of Accounting, Curtin University of Technology, Perth, Australia Gordon WoodbineSchool of Accounting, Curtin University of Technology, Perth, Australia. 2010. The effect of ethics courses on the ethical judgement-making ability of Malaysian accounting students. *Journal of Financial Reporting and Accounting* 8:2, 92-109. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
 24. Gary Frank, Emeka Ofofibe, Suzanne Gradisher. 2009. Teaching Business Ethics: A Quandary for Accounting Educators. *Journal of Education for Business* 85:3, 132-138. [[CrossRef](#)]
 25. Gregory Liyanarachchi, Chris Newdick. 2009. The Impact of Moral Reasoning and Retaliation on Whistle-Blowing: New Zealand Evidence. *Journal of Business Ethics* 89:1, 37-57. [[CrossRef](#)]
 26. Ralph E. Welton, Daryl M. Guffey. 2009. Transitory or Persistent? The Effects of Classroom Ethics Interventions: A Longitudinal Study. *Accounting Education* 18:3, 273-289. [[CrossRef](#)]
 27. Barry J. Cooper, Philomena Leung, Steven Dellaportas, Beverley Jackling, Grace Wong. 2008. Ethics Education for Accounting Students—a Toolkit Approach. *Accounting Education* 17:4, 405-430. [[CrossRef](#)]
 28. Maria Krambia-KapardisCyprus University of Technology, Limassol, Cyprus Anastasios ZopiatisCyprus University of Technology, Limassol, Cyprus. 2008. Investigating “head” and “heart” value traits of tertiary students studying in Cyprus. *EuroMed Journal of Business* 3:2, 163-178. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]

29. Gary PflugrathSchool of Accounting, University of New South Wales, Australia Nonna Martinov-BennieDiscipline of Accounting, The University of Sydney, Australia Liang ChenSchool of Accounting, University of New South Wales, Australia. 2007. The impact of codes of ethics and experience on auditor judgments. *Managerial Auditing Journal* 22:6, 566-589. [[Abstract](#)] [[Full Text](#)] [[PDF](#)]
30. Regina Durante, Asiye Toker GökçeOrganizational Culture and Ethics: 1047-1072. [[CrossRef](#)]