

# 道德發展、倫理評價與倫理意圖之實 證研究

## Study on the Relationship of Moral Development, Ethical Evaluation and Ethical Intention

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### ABSTRACT

Recent business and accounting scandals (e.g., Enron, WorldCom, Merck, Xerox...etc.) and the related downfall of the world's largest public accounting firm, Arthur Andersen, have crumbled the public's confidence in the honesty and ethical standards of Certified Public Accountants (CPAs) (Coleman, Kreuze, & Langsam, 2004). Bad moral judgments and unethical decision-making appear to have been at the core of these immoral behaviors.

With the goal of regaining and maintaining public trust in the profession's honesty and ethics, the CPAs must adhere to high levels of moral behavior. Hence, the underlying problem concerns the CPAs' need for a high level of public trust, and the concomitant recent diminution of this trust in the face of accounting scandals. In focusing on individuals' ethical behavior, there is a need to understand their current state of moral development and the way individuals resolve ethical dilemmas.

Results indicated that there is a strong correlation existed between ethical intention and moral-development. Results also indicated that no correlation existed between moral development and ethical awareness, except in one of the vignettes of the bank

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\*作者衷心感謝兩位期刊匿名審查學者就本文的悉心斧正與精闢建議，讓本研究能更臻完備。



loan to friends. The findings do not support there is a relationship between moral development and the selected demographic variables. Ethical decision-making also was found to be related to gender, educational level and ethics training. Yet age and professional level did not have significant influence in the CPAs' ethical decision-making process.

**Keywords:** Moral development, Ethical evaluation, Ethical intention



## 1. Introduction

The ethical decision-making of accounting, auditing and financial professionals has increasingly come under fire due to major ethical lapses of these professionals which led to some of the largest scandals in history. Since the year 2000, numerous high-profile accounting scandals have come to the public's attention, including falsely improving financial statements, inflating operating income figures, artificially increasing overall yields, and inaccurately recording payments that were never made, just to name a few. Enron, MCI, Tyco and many other scandals are directly responsible for new legislation in the U.S. and a marked rise in regulation globally. Since the Savings & Loan debacle of the 1980s, there has been a high level of interest in the ethics of CPAs and accounting professions ( Abdolmohammadi & Baker, 2008; Cohen & Pant, 1993; McNair & Milam, 1993; Ponemon & Gabhart, 1990; Shaub, 1994).

In Taiwan the trend is no different. In 2004, Procomp Informatic and Infodisc were found to be in financial failure as a result of accounting errors, embezzling assets, and illegal cash flow. Further, Kelon Electrical Holdings Company was found to have reported inflated revenue numbers by more than \$112 million. In 2007, the nation experienced the most serious financial criminal case in its history, the financial scandal of the Rebar Group. Two of the group's listed companies, the China Rebar Company and Chia Hsien Food and Synthetic Fiber Company, filed applications for insolvency protection on December 29, 2006. However, the announcement of this major information was deferred until January 4, 2007. According to the news released by the Taipei district court, this scandal involved a record-high embezzlement of approximately \$5 billion from the Rebar Group and other financial institutions, and had serious impact on the banking system and the capital market as well. Over one hundred thousand of the shareholders and creditors were negatively impacted by this event. The Rebar Group scandal awakened Taiwanese society to the need for a fresh emphasis on the importance of moral issues in the accounting



profession.

As a result of public accounting scandals involving the world's largest public accounting firm, Arthur Anderson, and its unethical conduct in handling corporate accounts such as Enron, WorldCom, Merck and Xerox, the public now has a low level of confidence in the ethical makeup of Certified Public Accountants (Coleman, Kreuze, & Langsam, 2004). At the foundation of this ethical disintegration of the accounting profession are cases of poor moral judgments and simply bad decision-making (Coleman, Kreuze, & Langsam, 2004). Low levels of moral reasoning have been implicated as a possible determinant of these ethical lapses (Joel, 2005). Since accountancy is a field that relies heavily on trust and the fulfillment of fiduciary responsibilities, the importance of including ethical judgments in the field of study is clear. Accountants and CPAs are expected to be the sustainers of public trust in the accounting and auditing professions. Yet one of the world's largest scandals, involving Enron, was precipitated the result of unethical action by accountants and auditors, which led the U.S. government to legislate into law the Sarbanes-Oxley (SOX) Act of 2002.

Public confidence in the accounting profession is essential, both for the profession's own growth and success, and for the growth and success of the businesses that the profession serves. The accounting process is an essential component of measuring an organization's economic growth. By law, CPAs are the only professionals certified to provide this measurement service. CPAs are relied upon by the public to possess and exhibit high levels of competency and objectivity, and more importantly, high levels of ethical standards. This critical role played by CPAs in the business world is undermined when questions of integrity and ethics are raised publicly, since maintaining a reputation for high ethical standards is the essence of the profession (AICPA, 2002).

In Taiwan, the accounting profession is ethically governed by an independent accounting standards board. This board, the



Accounting Research and Development Foundation (ARDF, 2004) is responsible for the development, publication and implementation of the Statements of Financial Accounting Standards (SFAS). The purpose of the ARDF is to “develop accounting standards and help enterprises establish valid accounting systems in Taiwan.” (ARDF, 2004)

For Certified Public Accountants to regain and eventually maintain the public’s trust in their profession, they must present themselves as honest and ethical professionals. Therefore, research in the determinants of ethical conduct of CPAs may contribute to upholding the status of the profession.

## **2. Literature Review**

Moral development theories, the selection and use of research instruments to empirically measure moral reasoning, moral development and ethical decision making, and an overview previous studies specifically used to measure moral reasoning s’ impact on moral behavior are discussed here.

### **2.1 Theories of Moral Development**

The evolution of moral development theories has concentrated on increasingly on its role in defining psychological aspects of moral development over situational (Rest, 1979; Greene, 2011 ). Adding to the body of knowledge on moral development and serving as a foundation for this specific study are the works of Kohlberg (1976) and Piaget (1932). In conjunction with Rest (1979), the works of these two theorists show specifically how the development of moral delineations and definitions are formative and not absolute. The research instruments these two researchers have created, specifically the DIT and MES scores, are used from defining moral development and ethical decision making, respectively.

### **2.2 Introducing and Analysis Rest’s Theories**

James Rest (1979) developed a revision of the



developmental process of moral judgment by redefining Kohlberg (et al.) and Piaget (1932) theories to compensate for their shortcomings. Rest's theories differ significantly from Kohlberg's (Rest, 1979) by concentrating on the measuring of moral judgment and reasoning. According to theorists, "For the measurement of moral reasoning, Rest's model assesses an individual's tendency to use concepts of justice based on social cooperation in his or her moral thinking, while Kohlberg's model assesses an individual's use of justice concepts, focusing more on exchange and individual interests" (Elm & Weber, 1994, p. 346)

Rest (1986) consequently a Four Component Model that captures for types of psychological processes must take place for an individual to experience moral behavior. In addition to the DIT research instrument, Kohlberg is credited with revolutionizing this area of moral cognitive development through the development of the Rest Four Component Model which is briefly described below:

- Moral Judgment: The individual must make judgment on what should be the right thing to do. In other words, a person should be able to determine the appropriate action that is morally correct.

- Moral Sensitivity: This is defined as the interpretation of individuals' actions in terms of responding to their overall assessment of situation. The intent of this aspect of the model is to refer to how an individual's conduct is analyzed in terms of how is going to influence themselves and those who are associates and friends.

- Moral Motivation: The essence of defining and prioritizing moral decisions over competing contextual perceptions of morality. Moral values are, according to this model, above personal values. Moral values are always thought about first when making a decision.

- Moral Action: The sense of this specific element of the



model requires the development of competence in the development and use of strategies that develop a moral foundation. According to this specific aspect of the model, the individual needs to have the integrity and self-determination to stay in alignment with their need for behaving morally and ethically over time. The point of this specific aspect of the model is that self-determination is a critical aspect of the total model.

### **2.2.1 Assessing the Cognitive Moral Decision-Making Model**

Previous research has shown that ethical decision making process might be similar of other decision making processes. (Dawn & Trar 2012). Accounting ethics research, however, in the majority of studies is based on a cognitive moral decision making model as first analyzed and published by Rest (1986). Modeling the individual moral decision processes that include the reasoning and action processes in completing and carrying out ethical decisions and actions is defined in the model. According to the theory the person with a strong sense of morals is that that evaluates an ethical dilemma and situation to ensure that actions are evaluated for their ethiccity first. In defining this model Rest (1984) states that interpreting the situation including the decision to try and decide which choices are, and if and how a decision might affect others (i.e., they try to determine if an ethical issue exists). This includes many of the concepts of utilitarianism as defined by John Stuart Mill and latest moral theorists in this specific school of moral thought and theory. Consistent with utilitarianism, the relative strengths and weaknesses of each decision is weighed by the emotions, perceptions, and socialization of the decision-maker in light of the greater good, which is the cornerstone of utilitarianism. The selection of a given alternative that may or may not be taken based on the ethical judgment of the leader yet it must align with the broader good to be considered utilitarianist based (Rest, 1984). Figure 1 shows the cognitive ethical decision-making components organized in terms of their total influence on the decision-making process. Figure 1, the Cognitive Ethical Decision Making Model defines the specific approaches to



defining how the overall decision framework is completed.

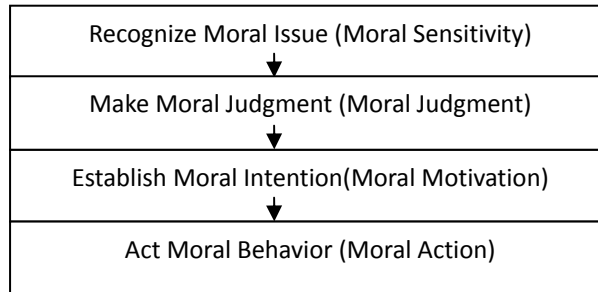


Figure 1.  
Cognitive Ethical Decision Making Model

### 2.2.2 Explaining the Defining Issues Test (DIT)

Rest (1979) is also initiated and maintained the development of the Defining Issues Test (DIT), which is also used in the research completed on this dissertation as a means of measuring theory of moral reasoning. Rest contends that the DIT model continues to supplant and enhance knowledge in the key area of empirical ethics research (Rest, 1979). The test is typically written yet has also been placed on websites to make it possible for respondents from many different locations geographically to take the test at the same time. It is considered one of the more effective tests at standardizing moral and ethical dilemmas and issue questions. The test is constructed with six dilemmas (three in the short version) is accompanied by 12 stage specific questions (items). The respondent next reads the dilemma and chooses one of three decisions that align with their perception of the situation. Following this, the respondent rates the importance of each of the 12 items to their decision. Finally, the respondent is asked to rank the four most important items using multiple choice questions.

A typical structure of the DIT is a multiple-choice questionnaire that contains multiple scenarios or vignettes, and





has been designed to have up to 12 moral arguments in each dilemma relating to moral reasoning. Each of the questions on the questionnaire asks the subjects to select the most illustrative or definitive response for each situation given their perspective of it. The DIT then uses a point system on a four-point scale to measure the overall responses and create a score that indicates the respondents' moral and ethical reaction to the points made. A score of four points is given for the most important response, and one point given for the least important response. Both manually-based and machine-based approaches are used for tallying and analyzing the scores, with statistical analysis programs increasingly being used to manage this process. Often the scores are also measured as a series of indices as well. The Principled Index (P index or P score) is the most commonly used one in this field of research today (Rest, 1979).

The first score mentioned is often the “P” score (principled morality) which defines the level of a respondents' ethical cognition. This is a metric that quantifies the level of respondents' reaction to scenarios and vignettes that are identified as Stage 5 and Stage 6 in the Rest's theory. In addition to the “P” score, the “D” score quantifies responses from all stages rather than just those identified in Stages 5 and 6. Critics have contended that the “P” score is more reliable and therefore more trustworthy as a measure of ethical cognition, a point that Rest has agreed with from his analysis (Rest, 1990). In re-assessing the value of “P” as a measure of ethical cognition, Rest wrote “...represents the sum of the weighted ranks given to principled items and is interpreted as the relative importance given to principled moral consideration in making a moral judgment. (p.101).

Further supporting the reliability of the DIT test are the inclusion of control variables, or items that are purely included to provide a random check of consistency of responses (Rest, 1990). Since its initial development, the test has been used in more than 500 documented studies globally, as claimed by its author (Rest, 1990). In quantifying the value of the research instrument from a reliability standpoint, there have been a series



of internal validity measures completed as well, with a test-retest methodology used to track internal validity. Scores on these tests using the statistical technical called Chronbach's alpha index deliver a consistently high level of reliability, with a .70 on the score of this specific statistical metric (Rest, 1986). One of the findings that Rest (1990) has seen from the work completed cumulatively is that the DIT scores tend to have a high correlation level to education and a low correlation to gender, religious beliefs and affiliates, and gender.

### **2.2.3 Empirical Analysis of Accountants through the use of DIT**

Validation of the DIT research instrument for use in conjunction with analyzing the ethical development of CPAs has been pioneered by Armstrong (1987) through the use of two samples of respondent group CPAs who were given the DIT. Using the mean DIT P scores of each respondent group and then comparing their relative means through the use of large samples of undergraduate college students, college graduate students, and adult respondents as reported by Rest (1979). After completing the analysis and calculating the mean DIT P scores, the results showed scores between the two CPA respondent groups as 37.1 and 38.5 respectively. Calculated mean DIT P scores of the three respondent audiences were as follows: college students (42.3), college graduates (53.3), and the adults in general (40.0). Armstrong (1987) stated that with the CPAs averaging only 1.1 years of post graduate education there was a significantly lower DIT P score reported and achieved by the CPAs. What also was found from the Armstrong analysis was that significantly lower DIT P scores obtained from CPAs occurred compared to both college students and adults as a general respondent group. From this analysis it's clear that there is a normal progression in moral development that generally takes place in college, yet did not take place with the CPA groups. Their moral development, as measured by the DIT, had not progressed beyond that achieved by the general adult population.



In addition to the research completed by Armstrong (1987) there has been significant work completed on the topic of moral development and theories of moral maturity relating to accounting students and professionals (St. Pierre et al. 1990). This second study defined a respondent base of 479 seniors divided into 10 groups by major who were then given the DIT instrument to measure their level of cognitive ethical development. What is unique about this specific study is the definition of specific disciplines in the study as well including math, psychology, and social work. What is noteworthy from this student is that the mean DIT P scores for the respondent base of accounting majors were significantly below those of psychology majors. The researchers list the mean DIT P scores of 38.75 for the respondents who are male accountants and 45.85 for respondents are female accountants. This finding supported previous empirical studies relating to the development of ethical cognition in students, with female students receiving significantly higher scores, attributable to the previous results of empirical studies. Exacerbating these findings were also the DIT P score median value of 43.19 for college seniors. The use of the “M” value to ascertain the reliability of the study was also completed to better manage the sampling bias and potential errors. Based on these factors the research showed that there were no significant differences in DIT PI scores based on the exposure or not to an ethics course. Clearly the DTP P scores were seen as delineators of cognitive ethical development independent of formalized processes; there is in fact indication that ethically-oriented people do tend to gravitate towards majors that have a relatively high level of accountability, as psychology does for example.

In an ancillary study, the work completed by Ponemon (1990) illustrated that through the study of 52 accountant respondents who ranged in position levels of staff, supervisor, manager, and partner were given the MJI to ascertain the relationship between moral stage development and hierarchical position. The results of the survey showed statistically significant results with the mean stage level increase from 3.4 at the staff level to 3.7 at the senior level and then to 4.1 at the



supervisor level. While the MJI peaked at the supervisor level, mean stage levels decreased to 3.6 at the manager level and to a low of 2.9 at the partner level. Clearly the decline in MJI scores in this specific study contradicts the core concepts of moral development theory. Citing both a decline due to socialization and self-selection, Ponemon (1990) has stated that the results of this specific project do not necessarily refute ethical moral development theories. Following this research an paradigm (independence level) and the DIT were next analyzed (Ponemon & Gabhart, 1990) in an empirical study of 119 respondents in a CPA firm group of audit managers and partners. Results of this specific analysis indicate that managers and partners who achieved low DIT P scores had the propensity to be more cognitively focused on the potential penalties than those respondents who have higher DIT P scores from the research. Not surprisingly there is a key finding from this research, that shows a significant negative relationship between rank and DIT P scores (managers=35.7; partners=30.1) in addition to the age and experience of respondents relative to their age and experience scores.

An additional empirical study that further supports the validity of DIT P scores as indicators of the relative moral cognitive development of CPAs (Ponemon 1992) addresses scoring on this measurement instrument by the hierarchical position attained by CPAs in their firms. This specific research study also confirms the work completed by Ponemon and Gabhart (1990) and Ponemon (1990) that present the hypothesis that DIT P scores of practitioners, over time, increase as CPA progress from staff level to supervisor positions. Ponemon (1990) states that the hypothesis also includes a set of assumptions that as CPA supervisors progress from supervisor to manager, their relative DIT P scores drop, and drop further when the manager becomes a partner. This is disconcerting and says that the majorities of supervisors in CPA firms included in the sample have the most ethics; yet as the progression is made to manager and further on, to partner, ethics drops precipitously. Considering efforts in the U.S. to enforce compliance through the use of the Sarbanes-Oxley Act (SOX) the findings of this



specific research study make this level of legislation arguably essential for the preservation of public trust in both corporations and capital markets. The DIT P scores that were empirically derived from this research are as follows. Partners received a DIT P score of 32.17, the lowest from the research completed; managers, 35.67; supervisors, 47.74; senior staff members, 42.4; and staff, 44.71. What is truly remarkable from this research is the drop-off in DIT P score from supervisor to manager. Clearly there is the need for additional research on this specific aspect of how supervisors rationalize such a significant drop in their perception of moral decision making and ethics.

Thorne, Massey and Magan (2003) studied the similarities and differences between Canadian and U.S. CPAs from a cultural, work, rule orientation, self-regulation, and approach to the definition of security laws and enforcement, in addition to the perceptions of compliance. The researchers in this study defined the sampling frame as CPAs in each nation, randomly selecting 182 CPAs from Canada and 191 from the U.S. The sampling frame was further defined as auditors with significant levels of experience. As a result, the study generated a random sample whose mean age was 43.6 years and the years worked were 18.6. Thorne et al. (2003) used Thorne's (2000) audit specific test of both the prescriptive (should) and deliberative (would) forms to measure moral reasoning and wrote a short version of the DIT to measure moral development. The results showed that the CPAs from each nation did not differ significantly on moral reasoning, they did however find that the entire sample, when analyzed using ANCOVA analysis showed a significant association between prescriptive (should) reasoning and gender. The researchers also found a significant association between deliberate (would) reasoning and years worked DIT P scores, and country (Thorne, et al., 2003). Having found this specific point the authors drew the conclusion that "...institutional factors are more likely to influence auditors' deliberative reasoning than their prescriptive reasoning" (Thorne et al. 2003, p. 315). Thorne et al. (2003) also report that the mean DIT P score results for the entire sample of 38.3 with the CPAs in the U.S. at 38.0 and 38.6 for the CPAs in Canada.



Consistent with previous studies cited, there was a significant negative relationship between tenure and DIT P score. Finally, the ANCOVA analysis proved the statistical significance of associations between DIT P scores and the years worked and political orientation (Thorne et al. 2003).

In summary, it's clear from the research cited that it is not possible to indoctrinate accounting students to achieve higher DIT P scores, or further, create higher levels of moral cognitive development in them. Rather, it is the development of critical thinking skills (CT) in conjunction with a high level of transparency and accountability being fostered and grown through educational strategies that center on a wide vantage point of perspectives over merely drilling down into one core curriculum. The studies indicating accounting being taught as part of a broader liberal arts-based curriculum being more effective in fostering moral cognitive development is clear. The implications of fostering critical thought with a more strategic perspective has implications on how students who progress through their careers to auditors view "whistle blowing" (Ponemon, 1995), in addition to their perception of ethical "red flags" in their environments. Kite & Radtke (1997) show evidence in their research of how accounting students who have the ability to think critically regarding the environment have consistently higher levels of moral development compared to peers, further supporting the research of Bernardi & Arnold (2004) showing higher DIT P scores for those students with more advanced critical thinking skills.

### **2.3 Multidimensional Ethics Scale (MES) Vignette Methodology in Ethics Research**

The use of MES-based approaches to measuring and evaluating the ethical judgments of accounting and financial industry professionals was first addressed by Flory, Reidenbach, and Robin (1992). Empirical analysis and validation of the concepts of contractualism, moral equity, and relativism dimensions were found to be the core dimensions accountants relied on in making ethical judgments. Further supporting their



research, each of the dimensions exhibited high content validity of the three-dimensional measure was high ( $R^2$  ranged from 0.59 to 0.76), high reliability (coefficient alpha ranged from 0.75 to 0.94, with an average of 0.86), and significant predictive validity (0.45 to 0.76). The MES accounted for more “explained variance than univariate measures by 7 to 12 percentage points” (Flory et al. 1992, p. 296) on each of the four dimensions. As a result of these analyses, the MES research instrument has become prevalently relied on in measuring moral reasoning and its interrelationship to ethical decision making and the selective approach to evaluating and either accepting or rejecting ethical behavior. Cohen et al. (1993) validated and added to the extensive research completed by Reidenbach & Robin’s (1998; 1990) studies specifically of marketing professionals and their level of ethical decision making relative to accounting and financial professionals. Based on the analysis of results, the MES was found to be a valid and reliable measurement tool specifically in the field of accounting. In a study highly relevant to the one undertaken (Cohen et al. 1996) relied on the MES research instrument to empirically evaluate ethical decision making of the big-six accounting firms operating in Canada, defining the sampling frame as accountants, with a sample size of 127 accounts randomly chosen through the accounting firms. The generalization that was made based on the research as that Canadian accountants were generally more attuned to and relied on the Moral Equity and Relativist dimensions (Cohen et al 1996), and in absolute terms however the Canadian CPAs rely more on contractualism and moral equity. This is consistent with the utilitarian theories that influenced Rest (et.al) and many other ethical theorists have relied on in constructing their own theories.

Cohen et al. (1998) used the MES research instrument to create a questionnaire comprised of eight ethical business vignettes and demographic information which was distributed to undergraduate accounting majors as the primary audience and students in business disciplines and liberal arts at four universities in the Northeastern United States as secondary members of the sampling frame. The total sample size was 761



respondents. Cohen relied on a seven point Likert-type scale to measure students' ethical judgment through multi-dimensional scaling (MDS) techniques. A total of 645 valid responses were received, which were analyzed using MANCOVA, specifically isolating on respondents' gender and major relating to their responses on the questionnaires.

Cohen (1998) reports that gender and discipline, through analysis using ANCOVA statistical techniques, were significant on two of the seven vignettes in the study. Females however reported questionable behavior as less ethical than males across all vignettes. This finding led Cohen to state in his findings that women have a "stronger sense of duty (deontological) and a greater emphasis on justice than do men" (Cohen et al., 1998, p. 264). Of the two cases seen as questionable ethically, accounting majors viewed the activities as significantly more unethical and were least likely to perform these actions. Further, Cohen (1998) reports that accounting majors have a strong sense of and use of relativism and egoist constructs in moral development and cognitive ethical development.

Using MES to evaluate the ethical judgment of tax professions has also been completed (Cruz, Shaffer, and Strawser. 2000). Cruz et al. (2000) developed a research design that relied on a sample size of 67 tax professionals who were given three tax related cases to evaluate. Their responses were measured using the five dimensions of the MES, justice, deontology, relativism, utilitarianism and egoism. The results showed that tax professionals rely most on moral equity and contractualism dimensions first in making ethical judgments. The study also shows that relativism and utilitarianism had a large impact on peer behavior in tax preparers' moral judgments as well. Findings published state this may attributed to asocial desirability response bias of wanting to be seen as friendly over being seen as hard-line in ethical judgments (Cruz et al. 2000). Utilitarianism as a factor in the definition of ethics on the part of accountants is defined in a study by Cohen (1996) including the use of cost-benefit analysis of utilitarian logic and thought relating to how accounting professionals make ethical decisions.





## Summary

As the literature review illustrates the lower the scores of moral reasoning within accountant groups as careers progress is troubling and requires additional research. This finding is actually supported across multiple studies and was also found in this study as well. From the highest levels of DIT P scores for supervisors to the lowest for partners, the degeneration of cognitive ethics is a paradox in this field. As Ajzen (2002) has stated, the individual's level of moral reasoning with ethical awareness and ethical intention in business situations has a major influence on their ability to make sound ethical judgments.

Another key finding is that the reliability and validity of the DIT P score as a measure of moral development, supported by its intensive validation in over 500 published research articles. Studies which have accounting students as their respondents show that moral development increased during college (Ponemon & Glazer 1990), yet decrease as individuals age and their career progresses past supervisor to partner (Elm & Nichols, 1993). Contrary to this finding is the research completed by Jeffrey (1993). This translates into the finding that accounting students have some of the highest DIT P scores across the entire body of research in this area of study.

his literature review underscores how much more morality is than mere cognitive moral decision making and how significantly different peoples' behavior is relative to their reported attitudes and beliefs (Ponemon, 1992). There is a significant correlation between level of moral reasoning and correlation between auditors underreporting of time (Ponemon, 1995). A significant finding of this study also shows that litigation support specialists with higher moral reasoning scores (DIT P) are significantly less likely to be influenced by attorneys.

Based on the significant gaps between moral reasoning, moral cognitive development and the acceptance or rejection of



borderline ethical behavior as a result, there are is the need for additional research and empirical validation. This study has concentrated on bridging the gap between these areas through the use of both the DIT and MES research instruments. While Cohen (et al., 1998) has found that gender does correlate to MES-based vignettes used to measure the condoning or rejecting borderline ethical behavior, while the results of this study do not support that finding, there is ample previous studies showing gender specifically and demographic variables can be accurate predictors of ethical decision making. Demographic variables have been included in this study to support the hypotheses of their potential effect on moral reasoning influencing ethical decision making.

The study undertaken also analyzes the interaction of DIT and MES scoring in predicting how the level of ethical awareness leads to higher stages of moral development (H1) and tolerance of questionable action (H2). There have been a limited number of studies that undertaken to define this dynamic between DIT and MES on each other (Cohen et al., 1998; Reidenbach & Robin, 1988). Therefore, Rest (1979). Cohen et al. (1996) specifically has called for the development of an entirely new measure of moral reasoning leading to ethical decision making by combining each of the measures used in this study. This combined research instrument proposed by Cohen would need to also be tailored to quantify the effects of moral reasoning on the longitudinal development of ethical awareness over time, in addition to evaluating the acceptance or rejection of questionable actions.

### **3. Hypotheses of this study**

The following are the six hypotheses of this study:

H1: CPAs with higher stages of moral development will be more likely to evaluate questionable actions as unethical.

H2: Higher stages of moral development will be associated with a lower intention to perform questionable actions.



H3: CPAs who evaluate questionable actions as less ethical are also less likely to state an intention that they would perform the action.

H4: There are relationships between the level of moral development of CPAs in Taiwan and the selected demographic variables.

H5: There are relationships between the ethical evaluation scores of CPAs in Taiwan and the selected demographic variables.

H6: There are relationships between the level of moral intention of CPAs in Taiwan and the selected demographic variables.

The hypotheses included in this analysis are specifically designed to ascertain how statistically significant DIT and MES research instruments can be used for evaluating how ethical reasoning influences ethical awareness, and in turn, ethical decision making. The combining of both DIT and MES research instruments has been effective in this study to bring out greater insights of how ethical awareness influences moral development and the acceptance or rejection of questionable ethical actions as defined through the use of MES vignettes.

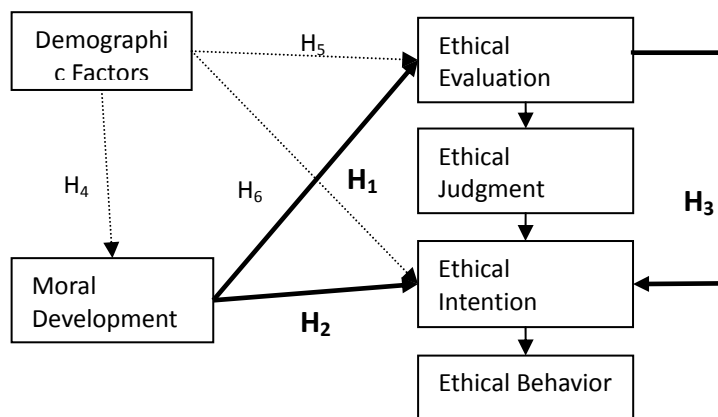


Figure 2: the research hypotheses



## 4. Research Overview

Beginning with the sampling frame of 508 total potential respondents that were chosen from the National Federation of Certified Public Accountants Association of R.O.C., and organization the majority of CPAs in Taiwan are members of. A total of 316 respondents who are Taiwanese CPAs were contacted as defined in methodology of this study. Test instruments used to collect this data include a confidential questionnaire that captured their demographic data including age, gender, and educational level and if they had taken an ethics course within the last five years. A second research instrument, the Defining Issues Test (DIT) which has been extensively discussed in the literature review of this dissertation was translated into Mandarin Chinese for ease of understanding by Taiwanese CPAs who have English as their second language. A third measurement instrument, the Multidimensional Ethical Scale (MES), was also used with eight vignettes specifically used to measure how CPAs' evaluation of questionable ethical dilemmas varied by age, gender, and management position. The results of these three questionnaires were coded into SPSS Version 13 for Windows.

### 4.1 Methodology

Each participant in the survey was required to complete the entire questionnaire for their results to be included in the analysis. To ensure confidentiality, the questionnaires were pre-coded for ensuring respondents did not exchange or swap surveys with others in the respondent base. This was done to minimize sampling error over time. Three research instruments will be utilized in this study: (1) the confidential questionnaire, (2) the Defining Issues Test, (Rest, 1984) and (3) Eight ethical vignettes (Burton, Johnston, and Wilson, 1991; Davis & Welton, 1991; Cohen, et al., 1996). Each of these are briefly described below. The confidential questionnaire was developed to solicit various demographic data: age, gender, educational level, and participation in an ethics training/course within the last five years. The second instrument, the Defining Issues Test (DIT),



was presented in a Mandarin Chinese translation, completed by a bilingual Taiwanese professor who is familiar with DIT methodology and Chinese semantics relevant to ensuring research reliability of the research instrument. The third research instrument, the Multidimensional Ethics Scale (MES) was specifically designed based on successfully used previous research instruments, with this specific one including five ethical vignettes. This specific research instrument is based on previous research which empirically showed that the presenting a variety of ethical dilemmas to adequately measure an individual's ethical orientation (Lampe & Finn, 1992). The ethical vignettes will be adapted from prior ethics research (Burton et al. 1991; Davis & Welton, 1991; Cohen, et al. 1996).

#### **4.2 Variables included in the Analysis**

The independent variable of this study is moral reasoning and its implications on defining ethical decision making. Moral reasoning is measured by the "P" score derived from the DIT. The "P" score is the simple sum of responses relating to principled moral considerations (Rest, 1979, 1990). The dependent variables are ethical awareness, ethical intention and the selected relevant demographic and institutional variables include age, gender, educational level, and ethical education. Ethical awareness is measured by the question in each business dilemma "The action described above is: Ethical/Unethical?" (Cohen et al., 1998). It is used to measure the individual's ability to identify unethical business situations. Ethical intention is measured by the question "The probability that I would undertake the same action is: High/Low" (Cohen et al., 1998). It is used to measure the student's intent to behave in an ethical manner in business situations. While the moral reasoning scoring process considers a potential social desirability bias through inconsistent responses, individual questions in the ethical business cases do not control for this bias. In order to test for this bias the business cases asked the question "would your peer do it?" This study tested for the response bias by calculating the difference in scores on the two questions "would you do it? Minus "would your peers do it?" The larger the



difference in responses found in these questions, then the greater the response bias (Cohen et al., 1998).

## 5. Results

DIT has been used often as an instrument to test levels of moral reasoning. Previous research points out that behavior is related to moral reasoning, and positive associations between levels of moral reasoning and moral behaviors have been suggested. The present research thus tests the relationship between moral development and the behavior of ethical decision-making, which is defined as ethical awareness and ethical intention.

As has been mentioned in the literature review, however, there is an absence of empirical research that compares MES and DIT P scores. Research completed for this dissertation specifically focused on evaluating the relationship of The DIT P scores to the answers from the MES instrument through correlation analysis.

Social desirability response bias (SDRB) has been a pervasive problem in ethics research (Cohen et al. 1996). Cohen et al., (1995; 1996; 1998) demonstrated the seriousness of SDRB in accounting contexts within Canada, America, and South America. The respondents will be more likely to attribute ethical intentions to self compared to peers. This is because of a tendency to give biased responses to appear moral socially desirable. This current study minimized the SDRB problem by using the third person approach for the questionnaires.

### • Sample Characteristics

The mix by gender of this study displays approximately equal proportions of males and females, with 49.1% being female, and 50.9% being male. The average age is 38.9 years. The majority have completed college 74.7% and 22.5% have completed graduate school. Across both genders the mean number of years worked is 14, and the median value is 12 years.



The majority of the respondents are also managers (63.9%) with 36.1% being non-managers. In addition, 53.6% have had ethics training; leaving 46.4% not having received ethics training in the last five years.

### • Results of the Hypotheses Tests

H1: CPAs with higher stages of moral development will be more likely to evaluate questionable actions as unethical.

The results, shown in Table 1(Q1), indicate a relationship between a CPA's moral reasoning (the DIT P score) and ethical evaluation (the mean of the reaction to the five vignettes of question 3) with  $R=-.773$  ( $P\text{-value} < .001$ ). The results shown in Table 1(Q1), also indicates that three of the five vignettes and the mean of all five, were significantly correlated with DIT P scores. The three vignettes refer to the following: early shipment scenario with  $R=-.918$ , extend bank loan to a friend scenario with  $R=-.898$ , product safety scenario with  $R=-.889$ , all provide support for this hypothesis 1. The result of the personal gift vignette ( $R=-.108$ ,  $p=.078$ ), and copying software scenarios ( $R=-.108$ ,  $p=.087$ ), however, shows no significant statistical correlation with the DIT P score.

H2: Higher stages of moral development will be associated with a lower intention to perform questionable actions.

The correlation result of moral reasoning and ethical intention was run for testing Hypothesis 2. This test measures the relationship between CPAs' level of moral development and their intentions of behaving in an ethical manner.

The results in Table1(Q2) show that there is the relationship between CPAs' moral reasoning (the DIT P score) and their ethical intention (the mean score of responses to the "Peer would" questions of the five business vignettes) with a correlation of  $R=.091$ ,  $p=.107$ , is not significant but is approaching a trend in the predicted direction. Removing the vignette about the personal gift, which has questionable validity



in Chinese culture. Then the correlation is tested using the average of four vignettes, the results are  $R=1.05$ ,  $p=.062$ . The results in Table 1(Q2), however, for the case involving the copy software to a friend for purposes of generating more business provide support for hypothesis 2 (correlation $=-.266$ ,  $p<.001$ ).

Table 1: The correlation between DIT P score and the MES question on ethical evaluation (Q1) and ethical intention(Q2)

DIT P Score	Early Shipment :		Bank Loan:		Personal Gift:		Product Safety:		Copying Software :		Mean of 5 MES	
	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2
Correlation	-.918(**)	-.053	-.898(**)	-.090	-.074	-.045	-.889(**)	-.060	-.108	-.266(**)	-.73(**)	-.091
p-value	<.001	.35	<.001	.10	.17	.42	<.001	.28	.07	<.001	<.001	.10
	1	0	1	9	8	8	1	6	8	1	1	7

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

H3: CPAs who evaluate questionable actions as less ethical are also less likely to state an intention that they would perform the action.

A correlation test was run for each of the five vignettes, testing Hypothesis 3 to determine whether there is a relationship between CPAs' ethical evaluation and their ethical intention. Table 2 suggests a relationship between a CPA's moral awareness and moral intention in which the R is .159 (P value is .005). Moreover, the results, shown in Table 2, indicate the strongest relationship in the responses to the business vignette of product safety with  $R=.725$  ( $P < .001$ ) followed by granting a bank loan to someone not qualified to receive it with  $R=.287$  ( $P < .001$ ), and lending software for illegal copying with  $R=.132$  ( $P =.019$ ). The results thus provide evidence to accept the research hypothesis that there is a significant statistical relationship between ethical evaluation and ethical intention.





Table 2: Correlations between the ethical evaluation and ethical intention

Ethical Evaluation And Intention	Early Shipment	Bank Loan	Personal Gift	Product Safety	Copyright Software	Mean of MES
Correlation	.041	.287(**)	-.021	.725(**)	.132(*)	.159(**)
p-value	.472	<.001	.707	<.001	.019	.005

Note: \*\* Correlation is significant at the 0.01 level (2-tailed).

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

H4: There are relationships between the level of moral development of CPAs in Taiwan and the selected demographic variables.

H5: There are relationships between the ethical evaluation scores of CPAs in Taiwan and the selected demographic variables.

H6: There are relationships between the level of moral intention of CPAs in Taiwan and the selected demographic variables.

The findings shown in Table 3 and 4 do not support a relationship between moral development and the selected demographic variables (H4). One component of ethical decision-making, ethical evaluation was found to be related to gender, education level and ethics training. Yet age and professional level did not have significant influence on the CPAs' ethical evaluation. The results also indicated that another component of ethical decision-making, ethical intention has a statistical relationship with gender and education level, but not with age, professional level and ethics training.

Table 3: Correlations between DIT P, ethical evaluation, ethical intention and selected demographic variables

	Age		Sex			Education Level				Professional Level		Ethics training				
	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	
Correlation	.082	.066	.066	-.054	-.895	-.586	-.094	-.368	-.206	-.209	.039	.095	.026	.043	.705	.03



	7	4		(**)	(**)	(**)	(**)				7(	3			
<i>p-value</i>	.14	.2	.2	.3	<.0	<.0	.0	<.0	<.0	.48	.0	.6	.4	<.0	.5
	4	3	5	4	01	01	9	01	01	9	90	.6	.4	01	6
		3	9	0		5							50	5	5

Table 4: Mean, Std. Deviation, and P-value from ANOVA of DIT P-score, ethical evaluation, ethical intentio by Selected Demographic Variables

		Mean			Std. Deviation			P-value from ANOVA		
		H4	H5	H6	H4	H5	H6	H4	H5	H6
Gender	Male	41.1	3.68	3.78	10.94	1.00	.974			
		196	42	76	894	216	34	.34	<.0	.0
	Female	39.9	3.01	3.23	10.13	1.04	.980	0	01	04
		855	16	54	021	204	97			
Education	Graduate	45.0	2.60	3.11	14.16	.774	.825			
		000	00	11	559	60	29			
	Bachelor	40.8	3.28	3.65	10.25	1.08	1.13	.10	<.0	.0
		391	54	63	878	011	901	0	01	02
	High School	39.0	3.68	3.80	10.95	1.00	1.96			
		842	42	28	325	216	877			
Profession	Manager	40.2	3.26	3.72	10.60	1.09	.998			
		544	44	28	917	654	23			
	Non-managerial	41.1	3.32	3.66	10.47	1.05	1.00	.45	.52	.8
		108	28	24	923	411	619	0	3	45
Ethnicity	Taken	41.0	3.05	3.68	9.549	1.14	1.00			
		477	29	42	56	583	216	.48	<.0	.1
Trait	Not Taken	40.1	4.52	3.69	11.35	.935	.923	9	01	57
		473	88	29	732	13	88			

• Social Desirability Response Bias (SDRB)

Consistent with the approach used by Cohen et al., (1995, 1996, 1998), the current study measured SDRB by asking the respondents two questions in each of the five vignettes: Question 1 of the MES is: “the probability that I would undertake the same action is high/low” and Question 2 of the MES is: “the probability that my peers would undertake the same action is high/low.” The purpose of asking the question from the respondents’ perspective, as well as the respondents’



perception of their colleagues' judgment, was to attempt to control any systematic errors resulting from social desirability response bias. Responses were captured on a seven point Likert scale ranging from 1 to 7, in which 1 was equal to a low probability, 7 equal to a high probability. The difference in responses between these two questions is the measure of SDRB (Tyson, 1992; Cohen et al., 1995, 1996, 1998).

As shown in Table 5 below, compared to the Q1 of MES-“I would”, the mean scores were higher on the Q2 of MES “peer would” in each of the five vignettes. Respondents indicate that peers are more to perform unethical action, compared to their own intentions. The largest likely difference (1.52) is in the responses to the case of the bank loan. The next largest social bias difference (0.95) is in the product safety vignette responses. The smallest difference (0.15) is found in the personal gift vignette responses.

To find out whether SDRB existed among CPAs within their responses to each of the five vignettes, T-tests for paired samples was used. Paired samples T-tests (see Table 5) demonstrated that there were significant differences between the scores on “I” and “Peer” questions on the average of 5 vignettes an in three of the five vignettes. (2-tailed,  $p < .001$  in three of five vignettes). These results reveal the existence of SDRB among CPAs under examination.

*Table 5: T test of social desirability bias in ethical intention responses*

	Prob. I would (Question 1)		Prob. Peer would (Question 2)		Difference (Q2-Q 1)	<i>p</i> -value of Paired T-Test
	Mean	SD	Mean	SD		
V1: Early Shipment	3.00	1.468	3.2	1.495	0.20	.222
V2: Bank Loan to friend	3.40	1.460	4.92	1.064	1.52	<.001
V3: Personal Gift	4.16	1.901	4.31	1.740	0.15	.872
V4: Product Safety	3.22	1.132	4.17	1.354	0.95	<.001
V5: Copying Software	3.38	1.164	4.16	1.651	0.78	<.001



Average of 5	3.43	1.0801	4.15	1.00216	0.7201	<.001
Vignettes	22	1	23			

**To conclude:**

Results indicated that there is a strong correlation existing between ethical evaluation and moral development. The interaction of DIT P scores and the Q3 of the MES-ethical/unethical action question and the DIT P score yielded high correlation coefficients in the study:- .773

Results also indicated that no correlation exists between moral development and ethical intention as scored by the mean value of the Q2 of MES--my peer would participate in questionable actions. Of the five vignettes that comprise the MES research instrument, however, the one concerning the giving a copy software to a friend yielded a correlation coefficient of .266 significant at the .01 level. The study found a statistically significant correlation between ethical evaluation and ethical intention.

The T-tests for paired samples demonstrated that there were significant differences between the scores on Q1 of MES “I would” and Q2 of MES “my peer would” questions. This result reveals the existence of SDRB in this study group.

Therefore, the statistical results presented in this section show that moral development is the predictor of ethical evaluation but not ethical intention. Ethics training does influence CPAs’ ethical evaluation but not their moral reasoning nor their ethical intention. The next section will present the discussion and implications of these results.

**6. Conclusion**

This paper has discussed the importance of moral development and ethical decision-making by accountants, developed a theoretical basis supporting a relationship between moral reasoning and ethical evaluation in business situations and



provided empirical evidence to support the results. This study moved beyond the research tradition that emphasizes cognitive moral development, and also offered an opportunity to gain a better understanding of the demographic factors that influence CPAs' ethical evaluation and ethical intention.

This study has several important findings. It has found a significant relationship between moral reasoning and ethical evaluation. Ethical evaluation in turn was found to be correlated the ethical intention. Both of these findings are consistent with Rest's four component ethical decision-making model. This analysis, however, did not confirm the predicted relationship between moral reasoning and ethical intention. This may indicate that CPAs do not apply their moral reasoning when making ethical judgments or they may apply it in only certain types of situations.

This study has also found several significant relationships between selected demographic variables (gender, education level, and ethics training) and ethical evaluation. The finding shows only gender and education level have a relationship with ethical intention. Moral reasoning, however, has no significant relationship with selected demographic variables.

In summary, moral development is important to accounting professionals ethical decision-making. Therefore, colleges and universities education must continue to search for better ways to improve accounting professionals' level of moral development. There is a need to develop a holistic education system to efficiency and spontaneously influence students' moral reasoning.



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