

# The Effect of Groupwork on Ethical Decision-Making of Accountancy Students

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**ABSTRACT.** Recent accounting scandals involving the collapse of large corporate firms have brought into question the adequacy of ethics education within accounting programs. This paper investigates the ethical decisions of accountancy students and in particular analyses the effect of *group* (as opposed to *individual*) decision-making on ethical decisions. Final year accountancy students (sample size of 165) were randomly allocated into two experimental conditions. The participants were then presented with five (5) ethical vignettes. One experimental condition involved completing the ethical decisions as individuals (60). The other involved completing the ethical decision-making as a group of 3–4 participants (34). A consistent pattern of behaviour was observed in the analysis of individual versus group responses. Individuals displayed stronger tendencies than groups to take the extreme actions of acting either unethically or ethically (whistleblowing), whereas groups displayed stronger tendencies to take the safer (neutral) options. It was concluded that groups reached consensus decisions, in an ethical context, probably as a result of peer pressure. The significant implication of this finding is in relation to the emphasis accounting programs place on group work. Group work may enhance students’ abilities to work as a team. However, as revealed in this study’s results, group work may not be an effective means of producing the optimal decision in all subject matter areas, especially complex areas such as ethical decision-making.

**KEY WORDS:** ethics, final year accountancy students, groupthink, training, whistleblower

## Introduction

### *Background*

In an era where accounting scandals surround the failure of large corporate firms such as Enron and

WorldCom, the accounting profession has received much undesirable negative attention (Molyneux, 2004). As a result, the profession itself has placed ethics and ethical behaviour on a new level of importance. Accounting ethics refers to ways in which ethical principles are applied in the accounting context. Numerous empirical studies have been conducted attempting to comprehend the moral reasoning skills of accountants as well as the factors that influence ethical behaviour (Armstrong, 1987; Douglas et al., 2001; Eynon et al., 1997; Shaub, 1994). Studies have noted individual factors (such as demographic and psychological) and situational factors (such as organisational culture and industry regulatory environment), which have all been found to influence the ethical decision-making processes of accountants (Jones et al., 2003). This paper examines the effects of a situational factor, group situation, on the ethical decisions of accountancy students, the practitioners of tomorrow.

According to the Accounting Education Change Commission (AECC, 1990 p. 131), one of the intellectual skills required by accounting graduates is the “ability to identify ethical issues and apply a value-based reasoning system to ethical questions”. Unfortunately, past research studies have revealed conflicting results in relation to the moral reasoning abilities of accountancy students. While some studies have found accounting students to have a higher moral development than students of other disciplines (Jeffrey, 1993), others found accounting students to exhibit lower levels of moral development in comparison to non-business students (Armstrong, 1987; Ponemon and Glazer, 1990). More recently, a study by O’Leary and Radich (2001) on the ethical values of Australian final year accountancy students found

that in their attitude to working in the profession, acting ethically does not always appear paramount.

Results of past research studies relating to the ethical attitudes of accountancy students are concerning, as it is these future accounting graduates who will play an important role in enhancing public confidence in the accounting profession. Hence, conducting a research study in this area, to determine means for improvement, appears warranted.

#### *Objective and motivation*

The purpose of this research is to gain a better understanding of final year accounting students' ethical decisions. Specifically, it will analyse the effects of individual versus group situations on ethical decision-making.

There are two major motivating factors for this study. First is the need to better understand accountancy students' outlook on accounting ethics. As the public's level of awareness about the consequences of unethical behaviour by accounting practitioners heightens, questions have been raised on whether ethics education is being adequately emphasised in business schools, particularly within the accounting program (Ahadiat and Mackie, 1993). By understanding the ethical position of accountancy students, ethics education can be better incorporated within the accounting program. Second, the conflicting results of prior studies in the area (discussed below) tend to suggest a need for further research. This research study will therefore contribute to the limited literature on ethical group decisions in an accounting context.

#### *Organisation of the paper*

The next section presents a literature review of prior research in the area. A hypothesis is then developed and the research design outlined. Subsequent sections analyse the findings, discuss the results, recognise limitations and identify areas for future research.

### **Literature review**

This literature review is structured as follows. First, studies on factors influencing ethical decisions are

considered. Group decision-making is identified as one of these. Therefore studies relating to group decisions in general are reviewed. The literature review then focusses on group decisions in an ethical context. Studies on accountancy students' ethical attitudes are then reviewed. This then leads to the hypothesis development of the impact of groups on accounting students' attitudes.

Numerous studies have looked into factors affecting ethical decisions (Dubinsky and Loken, 1989; Ferrell and Gresham, 1985; Trevino, 1986). Definitions of the terms ethical and unethical have not been provided. For the purpose of this paper an ethical decision is defined as a "decision that is both legal and morally acceptable to the larger community", whereas an "unethical decision is either illegal or morally unacceptable to the larger community" (Jones, 1991 p. 367). The nature of the accounting profession, which emphasises the accountants' prime allegiance to the public, deems this definition to be relevant.

#### *Factors influencing ethical decisions*

An individual ethical decision-making and behaviour model developed by Rest (1979) provided the context by which many empirical research studies were conducted. This four stage model highlights the path individuals typically progress through when making ethical decisions. The stages are: (i) recognise moral issue; (ii) make moral judgement; (iii) establish moral intent; and (iv) engage in moral behaviour.

Rest's (1979) model of ethical decision-making paved the way for the development of several other ethical decision-making models. In developing these models, the authors identified contingent factors that are believed to affect the decision maker and subsequently, the decision itself. Ferrell and Gresham (1985) listed individual factors (knowledge, values, attitudes and intentions) and organisational factors (significant others and opportunity), which affect ethical decisions. They incorporated these in their development of an ethical decision-making model. Brommer et al. (1987) listed over 20 variables believed to be relevant to ethical decision-making. These can be grouped under the major factors of environmental (work, personal, professional, governmental, legal and social) and individual

(demographic and psychological factors). Shifting from the individual and environmental factors repeatedly identified in previous ethical decision-making models, Jones' (1991) ethical decision-making model proposes that a moral judgement is contingent upon the ethical issue rather than influential factors. Ford and Richardson (1994) in their review of the empirical literature on ethical decision-making summarised influential factors into two distinct categories of individual and situational factors.

A large proportion of the empirical studies examining factors influencing ethical decisions have focussed on *individual* factors. The individual factor is comprised of attributes that are unique to the decision-maker and covers two main features namely, demographic and psychological. Generally, the findings of several studies in the area have yielded mixed results as to the influential strength or otherwise of individual factors. Psychological factors, which examine variables such as individuals' cognitive processes and locus of control have also been shown to influence ethical decisions (Trevino and Youngblood, 1990).

#### *Group decisions*

Significant events that have impacted on the way organisations operate and make decisions, have included the increased use of teams/groups in organisational decision-making (Schminke, 1997; Eisenhardt et al., 1997). Emphasis on the importance of teams is on the rise for organisations wanting to achieve success in the changing modern economy (Cohen and Bailey, 1997). Empirical literature in group decision-making indicates that on average, group judgements have been shown to be more accurate and generally more confident than individual judgements (Holloman and Hendrick, 1971).

The superiority of group decision-making over individual decision-making is attributed to factors such as: the opportunity for group members to interact, thereby having a greater pool of abilities and insights; increased error checking and quality control; and eliciting and provoking new thoughts (Steiner, 1972). This highlights the *information load* theory, which suggests that groups outperform individuals due to an improved decision consistency within the group and the ability of groups to process

a high information load better than individuals (Chalos and Pickard, 1985).

However, on tasks with considerable intentional depth, groups are typically outperformed by their most capable members, suggesting the inability of interacting groups to utilise the full potential resources of their members (Hall et al., 1963; Hill, 1982; Holloman and Hendrick, 1971). Thus it appears that groups arrive at a compromise decision, which is shy of the best members' performance, but still better than the averages of the members of the group (Rohrbaugh, 1979; Sniezek and Henry, 1989). This compromised decision may be attributed to a phenomenon known as *groupthink*.

Groupthink, a social psychology concept, is characterised by excessive efforts to reach agreement, and a strong need for group consensus that can override the group's ability to make the most appropriate decision (Janis, 1982). One of the signs of groupthink includes group members' tendency to feel increasing pressure to agree with others in the group, which as a result, produces a decision that is believed to be the consensus of the group. The fear of appearing foolish among others causes group members to restrain from expressing extreme ideas or opinions during group discussion (Whyte, 1956). This validates groups to be powerful sites for changing the thoughts and actions of individuals as many studies have proven (McGrath, 1984).

#### *Group ethical decisions*

In terms of ethical decisions, limited evidence exists as to whether group ethical reasoning is superior to individual ethical reasoning. Evidence comparing the ethical reasoning between group and individual was provided by Nichols and Day (1982), Abdolmohammadi et al. (1997) and more recently, Abdolmohammadi and Reeves (2003). These three studies used the Defining Issues Test (DIT) developed by Rest (1979). The DIT was developed "based on the premise that people at different points of development interpret moral dilemmas differently, define the critical issues of the dilemmas differently, and have intuitions about what is right and fair in a situation" (Rest, 1986, p. 196).

Nichols and Day (1982) provided evidence that group decisions were influenced by higher scoring

(on the DIT) individuals who presumably shifted less in their decision i.e. the group decision was influenced by the dominant members. Abdolmohammadi et al. (1997) noted mixed results. They discovered interacting groups typically were outperformed by their most capable members. Also they noted the average improvement – after instruction – for groups was less than that for individuals. Abdolmohammadi and Reeves (2003) concluded that group decision-making may be superior to individual decision-making in certain situations. However, this does not necessarily extend to ethical reasoning. As the above three studies have not yielded a definitive answer as to group impact on ethical decision-making, it is hoped this study will add to the extant knowledge of the topic.

#### *Ethical behaviour of accountancy students*

The accounting ethics literature shows mixed evidence regarding the moral development of accountancy students. Some research has established that accounting students tend to demonstrate lower levels of moral development than non-business students (Armstrong, 1987; Ponemon and Glazer, 1990). However, other research studies have noted contradictory findings concerning accounting students' moral development as opposed to students of other disciplines (Jeffrey, 1993). In a study by Cree and Baring (1991), a significant proportion of students was found to be open to an insider-trading proposition. Haswell and Jubb (1995) noted almost 38% of students indicated a willingness to accept a bribe if there was no risk of being caught. More recent studies have also yielded unsettling results. O'Leary and Radich (2001) noted 26% of Australian students were willing to defraud the taxation office and 21% to defraud shareholders.

Based on the analyses and findings of past research, it can be observed that behaving ethically does not seem vital to students' attitudes to working in the accounting profession. Moreover, the only motivation for students to act ethically is if the risk of getting caught exists.

### **Hypothesis and research design**

#### *Development of hypothesis*

As previously discussed, moral judgement can be made according to consideration of consequences, rights, duties and virtues. Whether or not these

theories are used and how they are used by an individual, depends on various factors that influence the decision-making process. When examining group decisions, certain phenomena such as groupthink – discussed above – can become influential. As noted above, several empirical studies on *general* decision-making have shown groups to make superior decisions when compared to individuals (Holloman and Hendrick, 1971). However, in terms of the effect of groups on *ethical* reasoning and subsequent ethical decisions, limited empirical studies have been conducted and the results have been somewhat inconsistent, as noted previously. The lack of consensus within the findings therefore leads to the research hypothesis (RH) being stated as follows:

*RH:* There will be no differences in the ethical responses of groups and individuals to ethical vignettes.

In their approach to analysing ethical group versus individual decisions, the three previously examined studies (Nichols and Day, 1982; Abdolmohammadi et al., 1997; Abdolmohammadi and Reeves, 2003) have used a pretest and posttest experiment design. The potential limitation of these studies is that by having a pretest and posttest, subjects in the experiment would have been exposed to the issues already and this exposure may have well influenced the result of the posttest. In minimising the influence of previous exposure on the results, this study will conduct one test only, with different individuals undertaking the individual and group responses. Hence the design is of a between-subject rather than within subject nature.

#### *Instrument*

For the purpose of collecting data, five ethical vignettes are used as an instrument within the experiment. This instrument allows ethical problems to be placed in a reasonably realistic context and directs the focus on to a particular area of interest. Ethical vignettes provide significant advantages over other research instruments when investigating ethical principles and ethical behaviour (Cavanaugh and

Frizsche, 1985) and are a common tool used in business ethics research (Baumhart, 1968). Within the accounting field, numerous studies in accounting ethics have used ethical vignettes (Douglas et al., 2001). The ethical vignettes in this study similarly describe ethical dilemmas that may arise in an accountant's working environment. Five ethical vignettes are used to determine if working in groups affects the ethical decisions of accountancy students.

The five ethical vignettes have been specifically developed for this study, as they all relate to potential situations accountants could encounter during their career. (Refer to Appendix 1 for a copy of the first vignette from the survey instrument). Whereas several ethical questionnaires already exist in the literature (for example, Brief et al., 1996; Moore and Radloff, 1996; Preble and Reichel, 1988), it was considered beneficial to develop these new scenarios rather than customise existing examples. This ensured they were fully relevant and suitable for the intended participants (final year students) referring as they did, to a typical dilemma an accountant could encounter in his/her first real accounting job. Also, rather than stating the vignettes in a neutral way i.e. asking what the participants thought a hypothetical person would do, as is common in recent studies, such as Douglas et al. (2001), participants were asked directly what they would do. This was intentionally done to make the participants really focus on the personal impact of the ethical issues and was considered important, even though this meant dispensing with the least obtrusive way of eliciting sensitive information i.e. the hypothetical person approach. All the vignettes portray a scenario in which a recently graduated accountant has spent six months in his/her first job and is faced with an ethical dilemma. As the vignettes were new, the draft survey instrument was reviewed by five PhD students at the same University. All deemed the scenarios relevant and the instrument appropriately structured. Only minor editorial type comments emerged from this pre-test review of the survey instrument. The following describes the five vignettes:

*Vignette 1* – describes a situation where an assistant accountant working in a chemical company is offered a once-off payment by the Chief

Accountant to keep silent regarding improper accounting practices.

*Vignette 2* – depicts a scenario where an accounting clerk working in a confectionary company witnesses a respected senior colleague stealing a box of chocolates.

*Vignette 3* – describes a situation in which the assistant accountant, is being presented with the opportunity to falsify his/her resume application for a job.

*Vignette 4* – illustrates a scenario in which a trainee accountant is being pressured to inflate travel expenses for reimbursement.

*Vignette 5* – depicts a situation whereby a trainee accountant is being pressured to make necessary adjustments to a client's accounts, in order for a bank loan to be approved.

At the end of each of the five scenarios, students were asked to select a response from three alternatives. Although the three responses in each of the scenarios are tailored to the particular ethical dilemma, the first response in all scenarios always represented the response to act *unethically*, the second response to act *neutral* and the third response to act *ethically*. Consistent with the definition adopted for this study (Jones, 1991, p. 367), an *ethical* response represents the response that is both legally and morally acceptable to the larger community. In all five vignettes it involved whistleblowing on the perpetrator(s) of the unethical behaviour. The *neutral* response involved ignoring the unethical activity and not getting involved and the *unethical* response involved participating in the unethical behaviour. Demographic details, age, educational experience and cultural background were then elicited in the "individual" version of the survey instrument.

#### Participants

A total of 165 students from two final year undergraduate accounting classes took part in the experiment. From these students, 60 individual and 34 group responses were received (groups of 3 or 4 students). From the individual responses 65% were females and 35% males. The median age bracket was 19–21 years.

### Procedure

The survey instrument was distributed during class time. Participants in some tutorial classes completed the survey instrument in groups of 3 or 4, while participants in other tutorial classes completed the survey instrument individually. Tutorials, in the main, ran in parallel. Students are randomly allocated to tutorial groups by the University's class allocation system. There was therefore no reason to assume the students from any particular group to be more or less ethical than the students from any other group. In classes that required completion of the survey instrument in groups, the individuals were randomly assigned to their group of 3–4. Participants were informed that there were no right or wrong answers and that responses were anonymous. Completion of the survey instrument took approximately 10 minutes. No rewards were offered for participation.

### Analyses

The univariate tests conducted in this study are a frequency distribution and *Z*-scores (discussed below). Using the *SPSS* software package, a bivariate statistical analysis, Chi-square test, was also conducted as was a further analysis comparing two population proportions. The latter two tests were performed to determine whether a statistical relationship or association exists between individual versus group responses. The Chi-square test was further supplemented with *Effect Size* and *Power* analyses to enhance results interpretation. Cronbach's alpha calculations were performed to validate combining results of individual scenarios, as a basis for interpretation.

## Results and discussion

Table I summarises the responses of individuals and groups to the five scenarios, in raw data form. The numbers represent the frequency of the response to each scenario, while the bracketed numbers represents the proportion of responses (i.e. in percentage %). This raw data was then subject to appropriate analysis as follows, to assist its interpretation.

### Frequency distribution

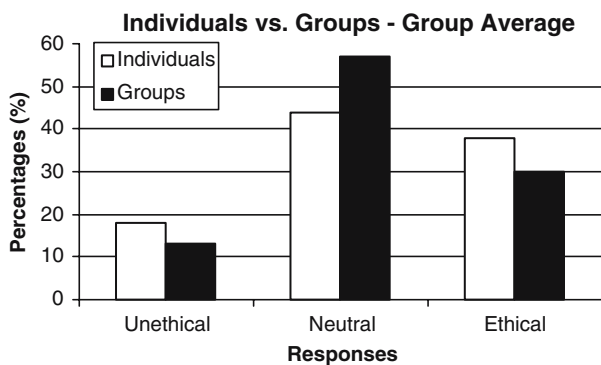
Frequency distribution, a descriptive statistic describing one variable (Neuman, 2003) was initially conducted. The observations falling into each of the three possible responses, acting *unethically*, *neutral* and *ethically* for all of the five scenarios were analysed. An analysis of each of the independent variables' responses, that is individuals versus groups was performed and plotted on bar-graphs for comparison. (Appendix 2 presents the comparative bar-graphs of all five scenarios and a group average – the average result, after combining the group of five scenarios). An analysis of the individuals versus group response comparative bar-graphs revealed the same pattern in all five cases. Throughout all five scenarios, individuals were more prepared than groups to take the extreme actions of acting either unethically or ethically. On the other hand, groups were more prepared to take the neutral stance than individuals.

While in some scenarios the differences in responses were quite distinct, in other scenarios the differences were not too apparent. Referring to Appendix 2 and Table I, in scenarios 3, 4 and 5 there was a difference of 7%, 11% and 6%, respectively, in acting *unethically*, with more individuals prepared to act unethically than groups. In scenarios 1, 2 and 5 the distinction can also be made, with individuals again more prepared to take the extreme action (this time of acting *ethically*) than groups. The differences in these scenarios were 9%, 19% and 6%, respectively. An analysis of the *neutral* response revealed groups were more prepared to take the neutral option than individuals in all five scenarios. The differences were quite distinct in all scenarios, ranging from a difference of 9% in scenario 3 to 21% in scenario 2. Table II is an average (calculated from the five scenarios) of the individual versus group responses, which concisely summarises the interpretation of the five scenarios. As the five scenarios all gauge ethical attitudes – albeit to differing ethical issues – it appears reasonable to combine them to gain an overall interpretation. A measure of the consistency of the results across all five scenarios yielded a Cronbach's alpha score of .722. Reviewing the individual responses alone, yielded a score of .76 and the group responses yielded a score of .64. Statistical references (such as Academic Technology Services, 2006) consider a Cronbach's alpha score of .7

TABLE I  
Summary of responses – individuals vs. groups

	Unethical n (%)	Neutral n (%)	Ethical n (%)	Total n (%)
<i>Scenario 1</i>				
Individual	5 (8)	11 (18)	44 (74)	60 (100)
Group	2 (6)	10 (29)	22 (65)	34 (100)
<i>Scenario 2</i>				
Individual	3 (5)	30 (50)	27 (45)	60 (100)
Group	1 (3)	24 (71)	9 (26)	34 (100)
<i>Scenario 3</i>				
Individual	15 (25)	42 (70)	3 (5)	60 (100)
Group	6 (18)	27 (79)	1 (3)	34 (100)
<i>Scenario 4</i>				
Individual	12 (20)	32 (53)	16 (27)	60 (100)
Group	3 (9)	22 (65)	9 (26)	34 (100)
<i>Scenario 5</i>				
Individual	19 (32)	18 (30)	23 (38)	60 (100)
Group	9 (26)	14 (41)	11 (32)	34 (100)
<i>Average</i>				
Individual	11 (18)	27 (44)	25 (38)	60 (100)
Group	4 (13)	19 (57)	10 (30)	34 (100)

TABLE II  
Individuals vs. groups – group average



or greater as acceptable. As the combined scores and the individual scores were over this mark and the group score just below this level, it appears valid to consider the combined result as a basis for interpretation.

The graph in Table II clearly demonstrates groups favour the *neutral* response, which indicates they are more comfortable in taking the safer ground.

*Bivariate statistical analysis of results*

Due to the categorical nature of the responses (ordinal scale 1, 2, 3), a Chi-square test was deemed an appropriate method for analysis (Huck et al., 1974). Table III lists the Chi-square test results of individuals versus groups in relation to the five scenarios. Whereas a review of the raw data as per Table I revealed a consistent pattern of results, as demonstrated by the frequency distribution graphs discussed above, the Chi-square test did not yield *statistically significant* results for any one case or for the group average.

Chi-square is more likely to establish significance to the extent that (1) the relationship is strong, (2) the sample size is large and/or (3) the number of values of the two associated variables is large. The sample sizes were relatively small and the range of the ordinal responses (1–3) was restrictive. These factors would tend to explain why the Chi-square tests did not yield sufficient significant results with which to support the initial results interpretation. A different type of analysis comparing two population proportions, as recommended by Selvanathan et al. (2000), was performed to see if it could provide a better basis for results interpretation. However, the results were similar. Only weak *statistical significance* was uncovered with just 4 of the 18 comparisons revealing significant differences and even then, they are at a .05 or greater level. This analysis is therefore presented in Appendix 3, as again it offers some support but not strong support for the concept of differences.

As the Chi-square test produced insignificant statistical results, two questions were raised. First, did the treatment (answering in groups as opposed to

TABLE III  
Chi-square test-individuals vs. groups

Scenario	$\chi^2$ results	df	$\rho$
1	1.597	2	0.450*
2	3.763	2	0.152*
3	1.003	2	0.606*
4	2.188	2	0.335*
5	1.208	2	0.547*
Group average	1.941	2	0.416*

\* Not significant.

individually) have any effect on the responses? Second, what was the probability of attaining significant results? These two questions are answered by calculating the Effect Size (ES) and performing a Power Analysis (PA) on the scenarios.

The concept of ES allows the researcher to move beyond simply stating that a null hypothesis is incorrect, to quantifying the size of the difference. As the difference between the two groups is measured, ES may therefore be said to be a true measure of the significance of the difference. The concept of PA on the other hand, is the probability that the test will yield statistically significant results. The fact that the Chi-square test primarily yielded *statistically* insignificant results should not lead to the conclusion there was no difference. By calculating the ES, it can be determined whether there were any differences despite the *statistically* insignificant results and whether this insignificance was due to some other factor, such as sample size. Given the sample size and the ES, the power of each test can be determined and hence the probability of gaining a statistically significant result. Generally the larger the ES (the difference between the null and alternative means), the greater the power of a test is.

Using the SPSS program, the count and expected count of unethical, neutral and ethical responses in each of the scenarios was generated. *Count* represented the actual number of responses (i.e. acting unethically, neutral or ethically) received/observed. *Expected Count* represented the number of responses expected at a random chance. The calculated proportion figures were used to calculate the ES in each scenario. This calculation was performed using a software package called *GPower*. Having calculated the ES, given the sample size of the data collected, the power of each test was determined on an alpha level of 0.05. The software also allowed the calculation of the required sample size to gain statistically significant results, given the ES and power. Table IV provides a summary of the results.

The magnitude of ES depends on the subject matter and hence different subject matters will have different ESs (Welkowitz et al., 1982). In interpreting the ES in the social sciences, Cohen et al. (1988) has suggested the conventional values of 0.1 = small ES, 0.3 = medium ES and 0.5 = large ES. The ES calculated in this research study has been interpreted

TABLE IV  
Effect size and power analysis – individuals vs. groups

Scenario	Effect size (ES)	Power analysis (PA)	Sample size required for power = 0.8
1	0.131	0.19	562
2	0.198	0.39	246
3	0.099	0.13	984
4	0.152	0.24	418
5	0.113	0.15	755
Group average	0.140	0.22	593

based on these values. The analysis of individual versus group responses showed a unanimously small ES in all scenarios. The ES ranged from 0.099 the smallest, to 0.198 the largest. This implies the treatment (being in groups) had a small influence on the responses to the scenarios. In terms of power, low power was found in all scenarios ranging from 0.13 to 0.39, which indicated that there was a 13% chance in scenario 3 and 39% chance in scenario 2 of yielding significant results. (Refer to Table IV)

The individual versus group responses produced a *consistent* non-significant small ES and low power in all scenarios and in considering the group average. This would tend to suggest a consistent pattern of responses in the case of the RH. The frequency distributions discussed earlier clearly supported this finding. In summary the ES adds credence to the notion of a difference between individual and group results although not statistically strong and the power assists in determining appropriate sample sizes to attain high statistical support.

#### Discussion of results

Upon examination of the results from the frequency distribution as regards to the RH, a consistent pattern of behaviour emerged in all five scenarios. It appeared that in all scenarios *individuals* were more inclined to take the extreme actions (i.e. act unethically or ethically), whereas *groups* tended to take the middle ground (i.e. the neutral option). This consistent pattern was evident in all five scenarios. (Refer to Table I for the



raw data and the first five graphs in Appendix 2). When they are combined, Table II succinctly summarises the difference between individual and group responses. The tendencies in the responses of individuals and groups are clear from this graph.

The results cannot be strongly supported in a *statistically* significant manner, as demonstrated by the discussion on Chi-square tests and population proportion comparison tests above. However, based on the *consistently* small ESs (Table IV) and the frequency distributions (Appendix 2), a pattern certainly exists with regards to the responses of individuals versus groups.

This pattern supports the results of earlier studies such as Sniezek and Henry (1989) and Rohrbaugh (1979) as covered in the literature review. These studies noted groups appeared to reach a more consensus/compromised decision, most probably due to the increasing pressure to agree with others. The results of this study offer support to the notion that *group* decision results in a compromise decision, with groups opting for the middle or consensus option. Moderate support is therefore provided for the rejection of the RH. Though some statistical support is evident, it is difficult to offer strong *statistical* support due to the small sample sizes and nature of the measurement scale. (Given the small ES and sample size, the probability of attaining significant result would be low. This was proved in the PA whereby the test on all scenarios showed low power – Table IV). Table IV summarised the required sample sizes to gain statistically significant results (Power = 0.8). These sample sizes are obviously beyond the scope of the current study.

Therefore it may seem *statistically* that there is not much difference between the responses of individuals and groups. But the analysis of the frequency distributions, as discussed above, although not *statistically* significant, offers evidence to the contrary.

#### *Implications of findings*

Analysis of the results allows for a comparison of individual and group responses to ethical vignettes. The results appear to lend credence to the notion that there is a difference between individuals and

groups, in that groups reached a consensus decision. The concept of *groupthink* appears to have exerted a significant effect on group responses. Groups appear to reach a ‘consensus’ decision rather than the ‘best’ decision, in an ethical context. The results offer support to the findings of some previous studies. Referring to the three studies on group versus individual ethical decisions mentioned earlier, namely, Nichols and Day (1982), Abdolmohammadi et al. (1997) and Abdolmohammadi and Reeves (2003) it was noted how they produced mixed results. Some evidence of the positive impact of group decision-making on individual decision-making was arrived at from those studies. This study supports some of their findings in that group decision-making appears to impact on individual decision-making in an ethical context. Whether that impact is always positive, however, is unclear and should be subject to further research.

The implications of this research study are therefore quite significant. Producing graduates who can contribute effectively as citizens, leaders in the wider community and competent professionals within the chosen discipline is a stated commitment of most Tertiary Institutions. In achieving this, graduate capabilities (generic skills) have been incorporated within undergraduate courses. The purpose of articulating graduate capabilities within courses is to develop capabilities which both the employers and the University believe essential for graduates entering the work force. As one of the graduate capabilities developed in most Universities is demonstrating the ability to work collaboratively, most undergraduate accountancy courses incorporate group work. While group work may enhance the ability of graduates to work as a part of a team, the findings of this study tend to suggest group work may not be an effective means of producing the best decision in an *ethical* context. This implies the need to reconsider the assessment procedures of subjects with an ethical content. Assessment pieces that require groups to derive an ethical decision may need to be reconsidered. Groups appear to reach a ‘neutral’ rather than ‘best’ decision, when it comes to ethical scenarios. As Table II succinctly demonstrates, individual decisions were overall, more ethical than group decisions, with a far higher proportion (8%) being prepared to act as

whistleblowers if necessary. Group decisions demonstrated a higher proportion of neutral responses (13%). This results in the less than optimal ethical decision being taken. Group behaviour does appear to some extent to "rein in" unethical individuals, with the proportion of unethical group responses being 5% less than unethical individual responses. But this effect is far less than the reduction of ethical actions and the increase in remaining neutral.

### Summary and conclusion

The objective of this research study was to examine factors impacting on ethical decisions of accountancy students, as current accounting graduates will play an important role in the future of the accounting profession.

Although bivariate statistical testing did not yield *statistically* significant findings, results from the frequency distribution analysis, provided the basis of support for the conclusions reached. A consistent pattern exists with regards to the responses of individuals and groups. Individuals were observed to be more prepared to take the extreme actions of acting unethically/ethically, while groups opted for the neutral option. This result offers support to the results of earlier studies, which suggested group decision is a result of a compromised decision. The concept of *groupthink* impacted significantly on the results. Therefore in response to the RH, based on the findings, group decisions are a consequence of compromised decisions, and they appear to differ from individual decisions. This may not necessarily be the better ethical decision. Individuals free from the constraints of group pressure appear more inclined to take a more ethical stance, such as become a whistleblower, when faced with an ethical dilemma.

The findings of this study therefore may have significant implications for educators. In most undergraduate accountancy courses in Australian universities, group work forms a significant part of the assessment procedures. But should this continue to be encouraged as regards ethical studies? The results of this study tend to suggest group study in an ethical context does not result in the best answers. The concept of 'groupthink' appears to drive students to reach a compromise answer. Thus, in an ethical setting this results in a 'neutral' response rather than, the preferred, most ethical response. Academic instructors may therefore need to reconsider how ethics is taught and assessed at undergraduate accountancy level.

### Limitations

There are two main limitations to this research study. First, the relatively small sample size may not be considered to be representative of the overall population that is the accountancy student population. As a result, the generalisability of the results to the final year accountancy students of other universities is unclear. Table IV lists the sample sizes necessary to achieve *statistically* significant results based upon current findings. These range from 246 to 984 with an average of 593. Hence the study would need to be replicated approximately five more times to achieve this. The future research section – below – mentions this as an area for consideration, but rather than delay the results it is considered appropriate to publish the current findings for deliberation. Also, there are no reasons to believe that the students who participated from this university are any different from students from any other universities. Second, in terms of the responses to the ethical vignettes, whether the responses are true reflections of what the participants would really do in a real situation is a factor which will remain unknown. However, there are no reasons to believe that students would react differently to the ethical vignettes than to a real life situation. The findings of this research study must be read in light of these limitations.

### Future research

First, a more focussed research could be conducted into the process of group ethical decision-making. In this research study, it was found that groups arrived at a consensus decision. However, whether a dominant individual steered the group to a particular decision is unknown. Hence further research may be conducted to address this issue. This could be done by recording the discussions of the groups or by distributing an exit questionnaire following the discussion to ascertain individual views of the group discussion. Certainly, more research into how ethics are taught (individually or in groups) appears justifiable. Second, expansion of the sample sizes of the current experiment to ascertain if the findings remained consistent as the sample sizes grew, would appear beneficial.

**Appendix 1 – Example of ethical vignette (extracted from survey instrument)\***

*Ethical scenario # 1*

You have completed your degree and have spent six months in your first job, as an assistant accountant in a chemical company. The company is involved in various research and development projects. Projects that have high probabilities of earning sufficient future revenue to cover costs are capitalised. You find out that one particular research and development project, already capitalised, has serious doubts regarding its ability to generate sufficient future revenue. You confront your superior, the chief accountant, who reluctantly admits to this fact. You soon learn that the chief accountant’s bonus is performance-related based on the company’s annual profit. You then become suspicious of his motives for not writing-off this project. The chief accountant becomes concerned that this matter troubles you and offers a once-off payment of \$10,000, 25% of your annual salary, for your silence.

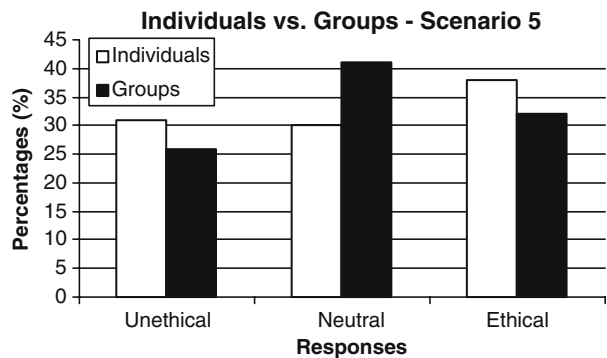
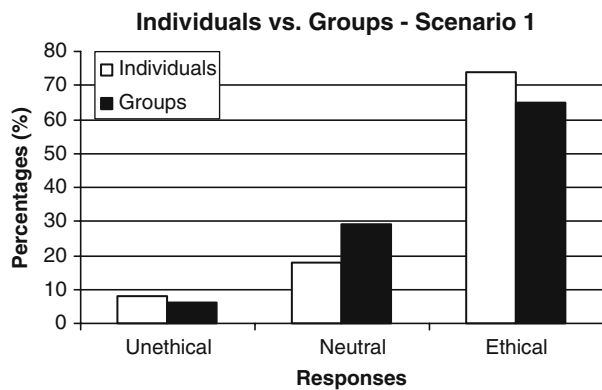
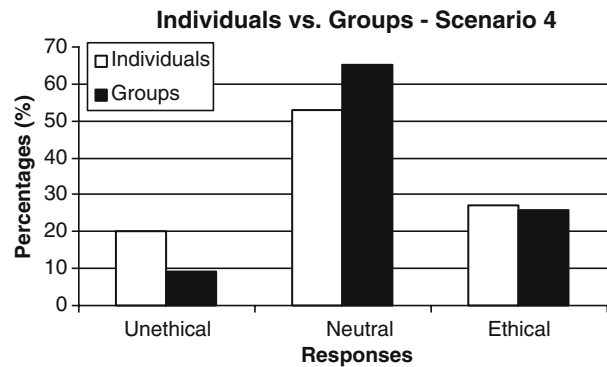
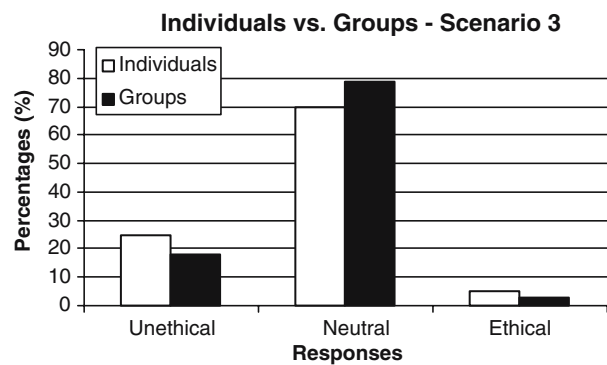
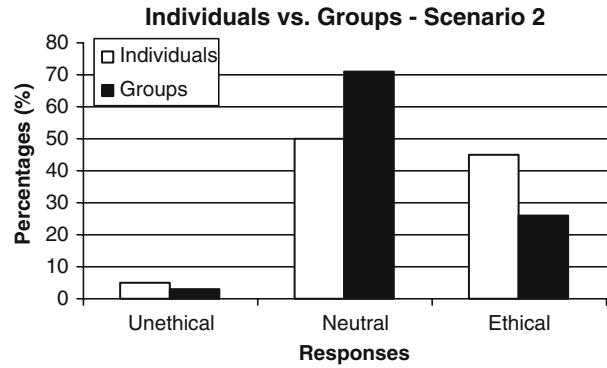
Please circle one option:

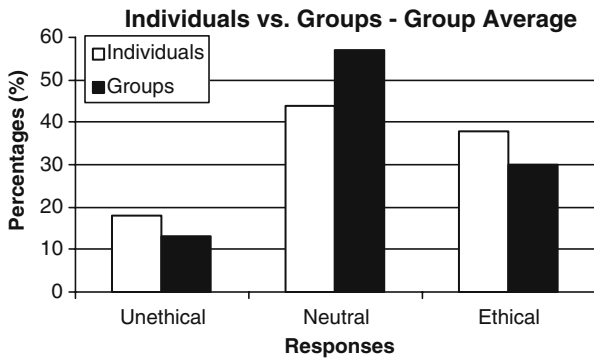
Would you:

- (1) Accept the offer and keep silent?
- (2) Decline the offer and tell no one?
- (3) Decline the offer and report to the directors of the company?

(\*A full copy of the instrument is available from the authors on request.)

**Appendix 2 – Frequency distribution graphs**





**Appendix 3 – Two population proportion comparison**

A statistical test that can be performed, which facilitates the qualitative nature of a set of data, is testing the difference between two population proportions,  $p_1 - p_2$  (Selvanathan et al., 2001). As the null hypothesis of this research study anticipates that the difference between the two population proportions is zero ( $H_0: p_1 - p_2 = 0$ ), the following test statistic is used:

$$Z = \frac{(\hat{p}_1 - \hat{p}_2) - (p_1 - p_2)}{\sqrt{\hat{p}\hat{q}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

By calculating the pooled proportion estimate and comparing the separate group proportions to each other and to the pooled proportion, a  $z$ -score was arrived at. This was then compared to statistical tables and significance levels computed as relevant. In examining the individual versus group responses, Table A.1 lists the calculated  $z$ -scores and their significance levels. Scenario 2 produced significant results at the 95% and 90% confidence levels with  $z$ -scores of 1.96 for acting neutral and 1.76 for acting ethically. The other four scenarios yielded insignificant  $z$ -scores. However, an overall group comparison based on combining all five scenarios between the individual and the group responses yielded insignificant results. The responses to be *unethical* and *neutral* produced  $z$ -scores of 1.71 and 2.7 and therefore are significant at the 90% and 95% confidence levels, respectively. Overall therefore only weak *statistical* significance was uncovered with

TABLE A.1  
Z-scores – individuals vs. groups

Scenario	Unethical	Neutral	Ethical
1	0.36	1.24	0.80
2	0.51	1.96*	1.76**
3	0.84	0.73	0.51
4	1.42	1.10	0.02
5	0.53	0.34	0.36
Overall group comparison	1.71**	2.7*	1.52

(\*Significant at 95% confidence level; \*\*Significant at 90% confidence level).

$\hat{p}_1 = \frac{z_1}{n_1}$  (the portion of respondents choosing a particular option, sample 1).

$\hat{p}_2 = \frac{z_2}{n_2}$  (the portion of respondents choosing a particular option, sample 2).

$\hat{p} = \frac{z_1+z_2}{n_1+n_2}$  (the portion of respondents choosing a particular option, both samples combined)  $\hat{q} = 1 - p$ .

$\chi_{-1}(\chi_{-2})$  = Number of students selecting a particular option to a particular scenario from sample 1 (sample 2).

$n_1(n_2)$  = Total number of students responding to a particular scenario from sample 1(2).

just 4 of the 18 comparisons revealing significant differences and even then, they are at a .05 or greater level. Hence it is considered to offer some support but not strong support for the concept of differences.

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