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Do diverse groups cheat less than homogenous groups?

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Research Report

Do diverse groups cheat less than homogenous groups?

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Abstract

This thesis provides empirical evidence to test the hypothesis that diverse groups cheat less than homogenous groups. The thesis explores both whether or not diversity provides more than just varied perspectives and the benefit of equal opportunity. The research is carried out in an academic setting and is based on an experiment with 688 Second and Third year Auditing students. It uses an experimental task designed to identify instances of dishonesty by individuals in different groups through the completion of a short mathematical assessment.

Social psychological theories which are relevant for understanding group composition, social norms, conformity and self-awareness are considered as possible explanations for the manner in which diversity might affect the ethicality of an individual's decisions within a group.

Using a two-way ANOVA the results show that variations in the composition of a group (in terms of diversity or homogeneity) have a significant effect on the frequency of dishonest behaviour by individuals within the respective group. In particular, when students were observed those who were members of diverse groups had test scores which were not significantly different from students writing in homogenous groups. Conversely, unobserved students in homogenous groups had test scores which were significantly higher than in unobserved diverse groups. These results should be relevant for accounting practitioners and corporate governance policymakers - given the emphasis placed on diversity of management groups in terms of codes of best practice - as well as for academics interested in better understanding the dynamics of student groups.

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I would also like to thank Dina Venter for her assistance with statistical analysis.

Declaration

I hereby declare that this research report is my own unaided work. It is submitted in partial fulfilment of the degree of Master of Commerce by Coursework and Research Report at the University of the Witwatersrand, Johannesburg. It has not been submitted for the purpose of being awarded another degree or for examination purposes at any other university.

Signature:

_____

Grant Hurvitz

Table of Contents

1.1 Purpose of the study 4

1.2 Key definitions 4

1.3 Context of the study 5

1.3.1 Diversity and Corporate Governance 5

1.3.2 Ethical behaviour 7

1.4 Research Question 9

1.5 Significance of the study 9

1.6 Outline of the research report 10

2 CHAPTER II – LITERATURE REVIEW 12

2.1 Group composition - heterogeneity and homogeneity 12

2.1.1 Arguments for why diversity creates benefits in group processes 13

2.1.2 Arguments for why diversity hinders group performance 18

2.2 Socio-psychological effects of diversity on ethical behaviour in group structures 19

2.2.1 Social norms and social identity 20

2.2.2 Social conformity 27

2.2.3 Self-awareness, public self-consciousness and social anxiety 30

2.2.4 Students and cheating as a proxy for dishonesty 35

2.3 Conclusion 36

3 CHAPTER III - METHODOLOGY 37

3.1 Population and sampling 37

3.2 Instrumentation 40

3.3 Procedure 42

3.4 Analysis of data 44

3.5 Assumptions 46

4 CHAPTER IV - RESULTS 48

4.1 Testing assumptions and data transformation 49

4.2 Primary analysis 55

4.2.1 Results of analysis of variance 55

4.2.2 Marginal means and pairwise comparisons 57

4.2.3 Controlling for mathematical ability 60

5 CHAPTER V - DISCUSSION 64

5.1 Social norms 65

5.2 Social categorization & Social conformity 66

5.3 Self-awareness and social anxiety 67

5.4 Limitations 70

6 CONCLUSIONS AND RECOMMENDATIONS 72

6.1 Future research considerations 73

7 REFERENCES 75

8 APPENDICES 78

8.1 Experimental Task - Mathematical Competency assessment: 78

8.2 Instrument 2: 83

Chapter I - Introduction

1.1 Purpose of the study

The purpose of this study is to determine whether the composition of groups in terms of racial and gender diversity versus homogeneity influences the ethical decision making of the individual within the group.

1.2 Key definitions

Core terms used in the report are defined as follows:

Homogeneity (in relation to the group composition)

> Group members are alike in terms of race and gender.

Diversity

> Dissimilarity among group members in terms of race and gender.

Groupthink

> A pattern of thought characterized by self-deception, forced manufacture of consent, and conformity to group values and ethics (Merriam-Webster dictionary).

Social norms

> "Rules and standards that are understood by members of a group, and that guide and/or constrain social behaviour without force of law". (Cialdini and Trost, 1998:152)

Injunctive norms

> Norms or behaviours characterised by acceptance and approval within social groups. (Cialdini and Trost, 1998)

Descriptive norms

> Norms which are "derived from what other people *do* in any given situation". (Cialdini and Trost, 1998:155)

Saliency

> The centrality of a particular attitude, identity, or role (Oxford Dictionary of Sociology)

Ingroup social identification

> Refers to how closely individuals within a group identify psychologically with the group (Cialdini and Trost, 1998:142)

Self-awareness

> A state of being in which there exists self-directed attention or self-consciousness. (Fenigstein, Scheier and Buss, 1975)

Identifiability

> The level to which an individual has a sense of self and stands out as an individual within a group.

Deindividuation

> A "state in which group members do not stand out as individuals" and lose their state of self-consciousness (Wicklund and Duval, 1971:320)

1.3 Context of the study

1.3.1 Diversity and Corporate Governance

The King III Report and Code on Corporate Governance (2009) for South Africa sets out a number of corporate social responsibility principles. A fundamental principle of this code is that an entity's leadership (the board of directors) should have a firm ethical foundation. The board of directors of a company is responsible for the running of the entity, as is noted by Jensen (1993:40) "the board, at the apex of the internal control system, has the final

responsibility for the functioning of the firm". A key focus of King III is the board of directors.

The Code also advocates diversity within the composition of the entity's leadership. While the original King Code of Corporate Governance (1994) did include references to affirmative action, there was no explicit requirement for diversity within the leadership ranks of an entity. This seems to indicate that the primary driver for including diversity considerations relates to the promotion of equal opportunity to previously disadvantaged groups. King III also elaborates on what constitutes diversity, stating that "diversity applies to academic qualifications, technical expertise, relevant industry knowledge, experience, nationality, age, race and gender" (Paragraph 71 – King III Report). However, the Report is vague in its elaboration on the rationale for the recommended practice and merely states that it is due to "the positive interaction and diversity of views that occur between individuals of different skills, experience and backgrounds..." (Paragraph 62 – King III Report). Despite the argument in the literature as regards the "diversity of views" rationale for diversity, it is the first component identified in the King III report - the "positive interactions" - which is of greater interest for this study, as there appears to be no more elaboration on what this might constitute or how it might arise through diversity within a group structure.

It is important to note that a board of directors is a working group or team. Much of the literature review makes reference to general groups or teams and, as a result, the theories presented are applicable also to a Board of Directors.

1.3.2 Ethical behaviour

Dishonesty (which is considered a subset of unethical actions), like team work, is a universal part of life. In a South African context, our newspapers are regularly filled with stories of politicians and businesses involved in dishonesty and corruption. In 2014 South Africa was ranked as 67th most corrupt country in the world (http://www.transparency.org/cpi2014/results accessed 3 August 2015). Within the past two years (2014 and 2015) we have seen claims of corruption and the use of taxpayer funds for the personal benefit of our own President Mr Jacob Zuma's house in Nkandla. As a country, South Africa has even coined the phrase "tenderpreneurism" to describe the corrupt manner in which many government tenders are awarded. Even in South African businesses, unethical actions take centre stage. Most recently Hlaudi Motsoeneng, the Chief Operating Officer of the South African Broadcasting Corporation, has been accused of falsifying his curriculum vitae to include a Senior Certificate.

Many variables might affect a person's decision to act unethically. It is not only the rational cost-benefit analysis of an unethical action which is taken into account by an individual (Gino, Ayal and Ariely, 2009) but there may be many subconscious and irrational reasons why people act dishonestly, and as importantly for the purposes of this study, why people *do not* act dishonestly. Individuals can act unethically in a way that no other parties are immediately aware of their misdeeds (for example, falsifying a tax return) or at times their actions are obvious to other parties involved (for example, a Chief Executive Officer making an unethical decision on behalf of the board of directors). Being caught acting unethically is a key factor in a person's decision to act ethically but it is certainly not the

only variable. (Gino et al., 2009). A history of corporate collapses, such as Enron, has proven that often boards of directors (or other decision-taking groups) do take unethical paths – even when all or most individuals in the group are well aware of the unethical nature of these.

This research report considers whether the inclusion of diversity within a group structure has any benefits in terms of improved ethicality of decisions. This paper uses social psychology theories as a basis for answering this question.

The use of social psychology theories can also help to explain behaviour relevant to the business world. Social psychology, as defined in the Merriam-Webster dictionary, is the study of the manner in which the personality, attitudes, motivations, and behaviour of the individual influence and are influenced by social groups. As businesses function in a social context, it logical that social psychology is relevant to the investigation and research into business questions.

Within the context of this study, the investigation of how an individual within a group, such as a board of directors, might be influenced or even influence others in the group, is clearly one in which the application of social psychology theories will provide insight. Social psychology theories have been used in the analysis of many business case studies, including successful and defective leadership, corporate failure, as well as financial market crashes (Hermann and Rammal, 2010:1050, Thaler and Sunstein, 2008:106).

Student groups were used in an attempt to answer the questions posed below, and the limitation of using students as a proxy for business workgroups is noted. However, even

business workgroups are not exempt from the social psychological effects of group functioning in general.

1.4 Research Question

The research question for this study is:

> Do diverse groups cheat less than homogenous groups?

1.5 Significance of the study

Based on current literature, there appears to be little direct investigation into the effect that diversity might have on *ethical* decision making. There is also little prior research on the effect of intragroup diversity on the ethical decision making of the *individual* within a group. Most research on group diversity focuses on assessing group performance from an outcomes-based perspective.

Those charged with governance of organizations would be interested to see whether fraudulent activity can be reduced through the creation of diverse workforces and diverse boards of directors. Organizations which make extensive use of teamwork are likely to be interested in the outcome of such research as it may shed light on whether or not socially diverse teams are beneficial.

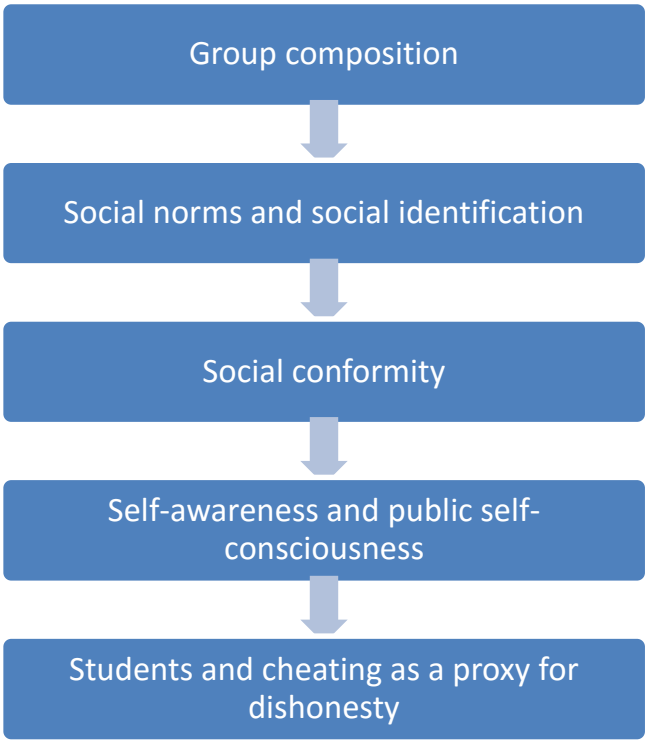
This research is important as it will help provide some insight for an ambiguous statement contained in King III in relation to the “positive interaction” of the board of directors which is created through diversity. Broad-Based Black Economic Empowerment (BBBEE) is

now well entrenched due to the enactment of Broad-Based Black Economic Empowerment Act number 53 of 2003. The reason for such legislation was to create a system through which wealth could be more equally distributed amongst a broad base of previously disadvantaged citizens. This study is important as it will shed light on whether or not the introduction of Broad-Based Black Economic Empowerment and the subsequent creation of group diversity is likely to have benefits beyond racial and gender equal opportunity.

1.6 Outline of the research report

This report will continue as follows:

Chapter II details the literature review – discussed in the following topic order:



Chapter III explains the methodology applied to the data gathering and procedure for planned analysis including any assumptions made.

Chapter IV provides the results obtained from the statistical analysis of the research data.

Chapter V provides a discussion of the results in relation to literature review.

Chapter VI then concludes and provides recommendations for future research.

Finally Chapter VII and VIII includes references and appendices are provided.

2 Chapter II – Literature Review

2.1 Group composition - heterogeneity and homogeneity

According to Guzzo and Dickson (1996:310), "group composition refers to the nature and attributes of group members". Heterogeneity and homogeneity are concepts which relate to the characteristic of uniformity and diversity. Diversity is also defined by Pelled, Eisenhardt and Xin (1999:1) as "the degree to which a unit (e.g. a work group or organization) is heterogeneous with respect to demographic attributes." These attributes can include (but are not limited to) age, gender, culture and social class. Race and gender are generally strong indicators of diversity and are easily identified by group members since they are both visible, or observable attributes (Moore, 1999, Milliken and Martins, 1996). Although there are other attributes (particularly non observable such as religion, socio-economic status and level of education) which result in diversity, for the purposes of this report diversity is considered only in the light of race and gender.

The King III report defines diversity along similar lines -"diversity applies to academic qualifications, technical expertise, relevant industry knowledge, experience, nationality, age, race and gender" (Paragraph 71 – King III Report). There are contrasting views on the importance and desirability of diversity within a board of directors' structure and while there has been much research done into gender diversity on boards of directors, there has been little with regard to racial diversity.

Presented below are arguments as to why diversity might be beneficial and for why it might be a hindrance to group functioning. There is a general tension in the literature and this is summed up by Milliken and Martins (1996:403) who state that "diversity thus appears to be a double edged sword, increasing the opportunity for creativity as well as the likelihood that group members will be dissatisfied and fail to identify with the group."

2.1.1 Arguments for why diversity creates benefits in group processes

2.1.1.1 Diversity of views and consideration of possible outcomes

In a diverse group of individuals there is a tendency to be more thorough in the decision making process – as there is likely to be a greater variance in views and considerations (Pelled et al., 1999). This concept is hypothesised by Pelled et al. (1999:3) who state: "Increased diversity generally means there is a greater probability that individual exchanges will be with dissimilar others. Members are more likely to hear views that diverge from their own". The authors' research goes on to prove that such "conflict" actually has a favourable effect on the performance of the group.

Specifically in relation to the board of directors, Adams and Ferreira (2004:2) use the phrase of "tapping broader talent pools for their directors" to describe one possibility of the improvements in effective decision making. This benefit is mentioned in King III – described as the "diversity of views". Prior research noted that heterogeneity amongst group members does generally improve group performance, when performance is being measured by creativity or intellectual tasks (Sessa and Jackson, 1995, Guzzo and Dickson, 1996).

Studies in diversity of gender representation on a board of directors have yielded mixed results. Some research shows that homogenous management groups tend to function more efficiently since there is already an inherent trust brought about by similarity (Kanter, 1977). However, in their analysis of prior research into whether diversity creates shareholder value, Fields and Keys (2003:12-13) show that shareholders do indeed place value on the diversity within the workplace. While gender diversity can improve the quality of decision making through more careful consideration of the diversity of views, it can also make the process of decision making slower as there is likely to be more conflict (Adams and Ferreira, 2004:3). This could frustrate the decision making process.

2.1.1.2 Equal opportunity for previously disadvantaged people

From a South African perspective, BBBEE was instituted in order to redress the injustices of the past, providing opportunity to those who were previously disadvantaged. From a perspective of compliance with such legislation, companies in South Africa have a direct incentive (as is explained later) to achieve higher levels of diversity especially within the senior ranks of the entity.

In a South African context, companies are allocated a Broad-Based Black Economic Empowerment (BBBEE) score which is based on having black representation and investment in the following categories:

- Ownership
- Strategic management
- Employment equity
- Skills development

- Preferential procurement
- Enterprise development
- Social development and industry-specific development

In order to obtain contracts with government and many companies, a prescribed BBBEE score is required. Therefore, there is an incentive to try and meet the requirements of the BBBEE Act. In the context of this research, it is the strategic management criteria, which include the board of directors, which assist in improving the BBBEE rating. Furthermore, once an individual is a director there is also likely to be an ownership stake (in the form of equity) in the company which serves to align director interests with those of the other owners of capital stock.

In the absence of such corporate governance regulatory interventions as South Africa currently has in the form of King III, it is questionable whether diversity will in fact occur in the structure of boards around the country. Jensen (1993:44) believes introducing board diversity for the sake of policy is akin to attempting to "model" the process of board representation on political democracy in which there is representation from various constituencies.

2.1.1.3 Avoiding Groupthink

Groupthink has been defined as a pattern of thought characterized by self-deception, forced manufacture of consent, and conformity to group values and ethics (Merriam-Webster dictionary). Groupthink is a psychological phenomenon that occurs within a group of people, in which the desire for conformity within the group can cause sub-optimal decision-

making. It is not just conformity to group values and ethics but, more importantly, it is the desire for conformity that clouds the judgement of individuals and ultimately leads to sub-optimal decisions being made (Turner and Pratkanis, 1998). There are many negative consequences associated with groupthink:

> "The first, traditionally labelled symptoms of groupthink, include illusion to invulnerability, collective rationalization, stereotypes of outgroups, self-censorship, mindguards, and belief in the inherent morality of the group. The second, typically identified as symptoms of defective decision-making, involve the incomplete survey of alternatives and objectives, poor information search, failure to appraise the risks of the preferred solution, and selective information processing." (Turner and Pratkanis, 1998:106)

In contrast to the benefits of carefully thought-out decision, one consequence of groupthink has been described as "premature consensus", indicating that not all possibilities are given consideration (McCauley, 1989). As members of the group seek acceptance from other members, there is less aggressive interrogation of the possible outcomes of proposed decisions. As the decision making process is less thorough, it often leads to sub-optimal decisions being made.

Several preconditions within the group context need to exist for the groupthink process to take place (Turner and Pratkanis, 1998). Amongst these conditions is group cohesiveness – a variable directly related to the degree of homogeneity of a group (Cox and Blake, 1991:51). McCauley (1989:251) describe cohesion as the individual's overall attraction to the group – a concept which is not unlike social identity theory as well as ingroup and

outgroup identification discussed below. It is plausible that as cohesion, or attraction to the group, is stronger when the other group members are like oneself. The author also notes that high group cohesion can be linked with the concept of reward and punishment within the group (McCauley (1989:251). This is not unlike the concepts of injunctive and descriptive norms discussed later.

It is worth noting that there have been previous studies which link unethical behaviour to the phenomenon of groupthink. Sims (1992:651) cites several examples of unethical decision making brought about by conditions conducive to groupthink – including in businesses such as Beech-Nut, E.F. Hutton Group Inc and Saloman Brothers. Each of the examples cited by Sims show how strong pressures contributed to the symptoms of groupthink including perceived invulnerability, rationalization and peer pressure. Furthermore, he shows that the boards of directors presented many of the group characteristics believed necessary to create an environment conducive to groupthink, including strong group cohesiveness, a "win-at-all costs" attitude, and desire for acceptance within the group.

Hermann and Rammal (2010:1050) explain the collapse of SwissAir, an airline once termed the "Flying bank", in terms of groupthink and more specifically group conformity. While the authors note that the most striking element of groupthink in the case of SwissAir was the perceived invulnerability of the board of directors, the belief in the morality of their decisions, as well as the desire to maintain a positive image of the themselves, it is interesting to note that in the few years before collapse, the composition of the board changed radically, being reduced from 26 members to only 10, of whom all were either

politicians and/or banking/finance professionals. This change could have had a powerful effect on the level of group cohesiveness. The authors state that groupthink and group conformity had a key role to play in the defective decision making as individual board members were unwilling to oppose any decisions, lest this be construed as "disruptive" behaviour (Hermann and Rammal, 2010:1058)

A shareholder of an entity can imagine how an environment conducive to groupthink is not desirable for a board of directors, who act as custodians of all shareholder funds. Directors could make uninformed, impetuous and unethical decisions – especially if these are met with approval in the group. As shown by (Hermann and Rammal, 2010:1058) above, ideas which upset the status quo are likely to be suppressed by other members. This serves as an argument for why diversity is desirable within a group.

2.1.2 Arguments for why diversity hinders group performance

2.1.2.1 Reduced Efficiency from Conflict

Many of the benefits in terms of more robust decision making and careful consideration of outcomes discussed above do come at a cost. The process of more thought-out discussions may be a result of greater disagreement amongst individuals within a group. Pelled et al. (1999:3) note that intragroup conflict increases when there is greater diversity within groups. Furthermore, the authors note a strong relationship between racial diversity and emotional conflict within groups. There are, however, theories such as that of social comparison first formulated by Festinger which offer a contrary view. The hypothesis is that homogeneity within groups might cause higher levels of conflict as we tend to compare

ourselves more to those who are like us and, once we compare ourselves we strive to be better than our counterparts (Pelled et al., 1999:5). To the extent the professional competitiveness results in better individual performance, as opposed to sabotage of another individual, this could be interpreted as a positive factor.

Adams and Ferreira (2004:3) who explore gender diversity in the boardroom, cite the work of Kanter who notes that when management groups are homogenous, the similarity amongst the individuals is conducive to an environment of trust amongst members. Conversely, when groups are diverse, creating an environment of trust needs to be done with external forces and resources. The use of resources which would not be required in a homogenous group results in relative inefficiency as resources are now being diverted and utilised in order to facilitate and develop the trust between diverse board members – trust which is inherently created in a homogenous board structure. The authors also note, consistent with the concept of more robust decision making, that boards of directors with female representation had more board meetings than those with only male representation. However, this comes at the expense of swift and relevant decision making (Adams and Ferreira, 2004:3).

2.2 Socio-psychological effects of diversity on ethical behaviour in group structures

The composition of a group can be a significant factor in the behaviour of the individuals within the group, as has already been discussed above. However, focus will now be steered

more toward an assessment of the ethicality of the decision which is taken by the individual within the group, within the context of social norms, social identification/categorization, social conformity, self-awareness and the subsequent effect that this has on an individual in a group.

2.2.1 Social norms and social identity

Israel and Tajfel (1972:101) elaborate on the concept of social norms and define them "as being an individual's expectations of how others expect him to behave and of how others will behave in any given situation". Cialdini and Trost (1998:152) define social norms as "rules and standards that are understood by members of a group, and that guide and/or constrain social behaviour without force of law." What is noticeable about both definitions is the link that social norms have with the perceived and actual behaviour of the individual within the group – both indicate that behaviour will be affected by the social norms.

It is also clear from both of these definitions that the concept of social norms comprises two similar yet distinct ideas – one of the expectation of how an individual should act and the other of the individual taking cues from how others act to inform one's behaviour. These are formally termed injunctive and descriptive norms.

Injunctive norms are norms or behaviours characterised by acceptance and approval within social groups. Injunctive norms can apply to inaction or a lack of certain behaviours in a given social situation. The lack of action or expected behaviour can also bring about disapproval from social groups (Cialdini and Trost, 1998). As Cialdini and Trost

(1998:157) explain, “injunctive norms motivate behaviour by promising social rewards or punishments for it”.

Descriptive norms are defined by Cialdini and Trost (1998:155) as being norms which are “derived from what other people *do* in any given situation”. Descriptive norms include not only behaviour that is desirable but also behaviour that is unacceptable and discouraged (Cialdini and Trost, 1998). These norms can also stem from what people think others in the group might do in any given situation. Therefore, it is not only informed by actual actions, but by perceived actions as well. Miller and Morrison (2009:741) term these types of norms slightly differently. Injunctive norms are the “average group attitude (what the group members actually think and do) and the descriptive norms are the prototypical group attitude (what group members believe they should and do in order to fit in).”

Israel and Tajfel (1972:100) argue that social norms have an impact on the actions of an individual as they state:

> “Social conduct is to a very large extent determined by what an individual deems to be appropriate to the social situation in which he finds himself. His conceptions of what is appropriate are in turn determined by prevailing system of norms and values which must be analysed in light of the properties of the social system in which he lives.”

From the above statements, it is clear that social norms are not static – they are affected by “social situations”. Changes in group composition can alter this social situation, as is explained by Gino et al. (2009:394); “the social context determines which of these norms

(injunctive versus descriptive) people attend to at a particular time and how these norms will impinge on an individual's immediate behaviour".

In a group context, individuals have a tendency to categorize one another and themselves into social groups which are most commonly based on demographic characteristics (Pelled et al., 1999). This categorization would include demographics such as race and gender. "Once categorization takes place, people strive for self-esteem by developing positive opinions of their own category and negative opinions of other categories" (Pelled et al., 1999:4) . Ingroup identification is the result of this categorization process. Ingroup social identification refers to how closely individuals within the group identify psychologically (Cialdini and Trost, 1998:142). The ingroup and outgroup social identification are likely to have a significant effect on the "social situation" in which an individual finds him/herself as it is likely to change the individual's feelings of whether one's actions conform with those of the group and thus also the self-awareness of oneself in the group.

Individuals are motivated to act in such a way as to conform to social norms of their category. Members of that group strive to maintain positive self-esteem and social identity within the group (Gino et al., 2009, Rubin and Hewstone, 1998). By acting in a manner contrary to the perceived appropriate norms of the other group members, the individual would seemingly be ostracising him or herself from that group. Furthermore, if that positive self-esteem and desire for social identification is not threatened, for example when not in a group or when in a group where the perceived actions of the others in the group are alike, there is more chance that the actions taken are not necessarily going to conform to social norms.

Two important ideas stem from the above statements. First: the idea of group identification and, second, that individuals may have motivation to act in accordance with a set of norms to which the entire group naturally subscribe. Cialdini and Trost (1998) argue that social norms can exert a strong influence on individuals when (amongst other factors) the source of the understanding of the norms is similar to the individual's. This would include situations in which the individual has a higher level of identification to the group to which he/she belongs. This could be applicable in large social groups where factors such as race provide identification, or even in smaller groups such as work teams and boards of directors.

Consider the following hypothetical situation which serves to show how the composition of the group – and subsequent categorization of oneself in that group – can lead to different decisions being perceived as acceptable. For example, you are travelling in a car with three passengers, driving at marginally more than the speed limit. You are stopped by a traffic policeman as a result of a speeding violation. The policeman offers a much cheaper "spot-fine" with no formal documentation or implications for your driver's license. This kind of "bribe" is common in South Africa. Now consider how the composition of the passengers in your car might affect your decision to pay the spot fine. What if the passengers were your family members? What if they were your work colleagues? What if your boss was in the car? What if they were complete strangers? Would the composition change your decision, or your willingness to accept the spot fine/bribe? Rationally it should not. However, based on the categorization of ourselves and the others within the group and the

desire for positive self-esteem within the group, we may view differently the importance of the injunctive or descriptive norms.

This feeling of identification can have an effect on the ethicality of an individual's actions, as noted by Gino et al. (2009) who observed that dishonesty increases in conditions of strong ingroup identity. In the set of experiments by the authors, there were four conditions in which students each completed simple mathematical assessments. In condition one, there was no opportunity to cheat on the assessment. Condition two, students reported their scores and then shredded their answer paper, leaving no trail or any evidence if they decided to cheat. In conditions three and four, these were both the same as condition two in terms of using the shredder, but additionally there was professional actor hired as a confederate to make it clear to all the participants that he was cheating on the assessment. He did this by loudly announcing, within a minute of beginning the assessment, that he had answered all questions correctly – something not possible. The twist within conditions three and four was whether the confederate had an ingroup identity or an outgroup identity. The authors manipulated the ingroup and outgroup social identity by making the confederate either wear a Carnegie Mellon University T-shirt (the university of the other students i.e. the ingroup) or by wearing a University of Pittsburgh T-Shirt (i.e. the outgroup). The authors were interested in testing whether the salience of cheating (caused by seeing another person cheat) increased or decreased the cheating of others – or whether the norms of the groups changed after the categorisation of the person who was seen cheating (as either ingroup or outgroup) had an effect on the other individuals' ethicality.

This experiment was of interest as the level of ethicality could have either increased or decreased - the saliency theory could have a mitigating effect on the level of unethical behaviour. As described by Gino et al. (2009:394) “when unethical behaviour is made salient, people may pay greater attention to their own moral standards and categorize the ethicality of their own behaviour more rigidly”. This would lead an individual to follow a more normative path of behaviour in line with injunctive norms.

The reported scores in condition three (ingroup) were almost double those of the outgroup in condition four. The authors note that the results of the experiment support the theory that “observing the unethicality of another person… changes one’s understanding of the social norms related to dishonesty” (Gino et al., 2009:394). Due to the experiment design, it is noted that the ingroup or outgroup identification has an effect on that change in perception of honesty.

It was clear from these experiments that simply making unethical behaviour salient does not reduce such behaviour – in fact in this experiment, it increases the level of cheating. The categorisation of the cheating individual was a major driver of the behaviour of the witnesses.

Furthermore, it is also noted from this work of Gino et al. (2009), that the authors consider the group of students who completed the simple mathematical assessment as individuals, to have displayed the characteristics of a social group. It could be argued that since each individual is completing one’s own individual assessment, that the gathering is a minimal group which does not resemble a social group and, as such, would not have resulted in the

establishment of group norms. While this was not the aim of the authors' research (to prove that even such groups present characteristics of social groups) their research findings seem to show support for such a hypothesis.

Groups with high levels of social identification (ingroup) are those in which individuals are most concerned with how they appear to their peers (Miller and Morrison, 2009). This might indicate that it is those types of groups that produce the most ethical outcomes since individuals are highly concerned with how they are viewed by others in the group. However, individuals in these groups are concerned more with their actions, relative to the perceived norms (descriptive) of the group than the deviation from the injunctive norm of honesty. This phenomenon is known as pluristic ignorance and exists when individuals in the group incorrectly perceive that group members share a different view – in this case they might perceive (or even witness as the case was in the experiments described) their other group members to believe that cheating on this test is acceptable.

It is clear that individuals within a group context can be affected by both injunctive and descriptive norms. Within the literature, observed unethical behaviour is most commonly tested for, in the form of dishonesty or cheating on some kind of assessment (Gino et al., 2009, Mazar, Amir and Ariely, 2008). Cheating in a test, for example, could at the outset be an action which, through *injunctive* norms, an individual would be discouraged doing as an individual understands the prescribed social value of honesty. In a study performed to establish factors which effect accounting students' propensity to cheat in tests, it was noted that 96% of the student sample agreed that cheating was unethical (Ameen, Guffey and McMillan, 1996).

From the above literature, it appears that the action that the individual takes could be related three factors. First, how strongly he/she wish to conform to the injunctive norm of not cheating. Second, by how strongly one's perception of the descriptive norms are changed if cheating is observed (which in itself is a function of which social category the cheating group member is in). Lastly, by how self-aware he/she become of their own morality relative to the group, simply through the presence of other group members.

2.2.2 Social conformity

Cialdini and Goldstein (2004:606) define conformity as the "act of changing one's behaviour to match the responses of others." The role of social conformity can have a significant effect on the level of dishonesty displayed within a group. In their book about human behaviour and how to change it, Thaler and Sunstein (2008:55), put it simply stating that "the bottom line is that Humans are easily nudged by other Humans. Why? One reason is that we like to conform".

In his experiments on social conformity, Asch (1956) shows how individuals can drastically change their answers to a question, even when those new responses are significantly different from their independent observations. In these experiments, the change is noted after the "public announcement" of an inaccurate answer posed by a confederate. It was evident from these experiments that the decisions of others had a strong effect on the decision of the individual.

There are many variables which may influence one's desire to conform. Within a group setting, it is noted that members of groups with high cohesion, are more likely to behave in a manner which conforms to the group norms because "members of cohesive groups are more likely than others to participate actively in conversations, engage in self-disclosure or collaborative narration, and develop a special argot" (Levine and Moreland, 1990:604). Furthermore, it is noted by Levine and Moreland (1990:604) that "cohesion is stronger in groups whose members like one another". The authors continue by explaining that even perceived similarity amongst members can strengthen group cohesion. It can already be seen that there is a link within the literature, regarding social identification and the level of conformity with a group. Logically, the homogeneity of a group provides a perceived similarity, and as is noted by other authors, characteristics like race and gender are most commonly associated with ingroup and outgroup social identification (Pelled et al., 1999).

The desire for conformity could stem from the internal reward mechanism discussed by Mazar and Ariely (2006) and also from the desire for positive self-esteem within a group setting as discussed by Turner and Oakes (1989). When considering an unethical course of action – it is more than just a simple cost versus benefit analysis (based on whether the individual will be caught) that leads to the choice. Prior research suggests that as humans we also place value or "internal rewards" on behaviour which conforms with expectations (Mazar and Ariely, 2006:4). Reward is not necessarily created only by upright moral behaviour but also by behaviour which is congruent with the social norms and values to which the group subscribes (Mazar and Ariely, 2006:5). It is for this reason that it is noted

that “we may follow a practice or a tradition not because we like it, or even think it defensible, but merely because we think that most other people like it.” (Thaler and Sunstein, 2008:59).

Heightened conformity is also noted when one’s action will be scrutinised by other group members (Thaler and Sunstein 2008:57). “People become more likely to conform when they know that the other people will see what they have to say. Sometimes people will go along with the group even when they think, or know, that everyone else has blundered”. It is more than just simply being seen to be conforming to the group that drives decision making but also the perception of the individual as to how closely his or her actions are being observed. For example, within the controlled experiments run by Asch (1956), in which individuals gave their solutions to the question posed in a private manner (not to be disclosed in front of the rest of the group), the solutions were accurate in 99% of cases, much higher than the accuracy rate in which the solution was presented in front of the group. “One reason why people expend so much effort conforming to social norms and fashions is that they think that others are closely paying attention to what they are doing” Thaler and Sunstein (2008:60). When one believes one’s actions are being closely examined, one becomes more self-aware of one’s actions and this can lead to altered behaviour.

As we see from the literature above, there exist in individuals and within groups, sets of norms and the desire of individuals to conform to those group established norms. These

groups might have significantly different injunctive and descriptive norms and, therefore, that desire to conform might result in a significantly different course of action. Furthermore, the group composition might create varying degrees of actual or perceived observation and scrutiny of the individual's decision, also creating a difference in the degree to which conformity could be expected. The reason for the actual change in conformity is explained below.

2.2.3 Self-awareness, public self-consciousness and social anxiety

Going back to the hypothetical scenario of being stopped by a traffic policeman with a car full of passengers – consider what it is that actually casts doubt as to what action you will ultimately take. The presence of the others in the car and, more importantly, who is in your car, can create a different level of self-awareness and an anxiety as to how your decision might be judged by others in the car. Self-awareness is described as the state of having a focused attention directed toward oneself (Fenigstein et al., 1975). Self-awareness can be produced through changes in several variables such as the social environment including whether an individual is in the presence of others who might be evaluating his behaviour (Wicklund and Duval, 1971). Even within a group (in which an individual is aware he is being observed by others), the extent of self-awareness and the resulting individual's inward focus is also affected by the characteristics of the others present in the group (Wicklund and Duval, 1971). In their study of the effects of self-awareness on antinormative behaviour, Diener and Wallbom (1976) found that through inducing an individual to become more self-aware, the observed level of antinormative behaviour was significantly reduced.

More specifically, self-awareness can cause both private and public self-consciousness. “Public self-consciousness involves awareness of self as a social object” (Buss and Scheier, 1976:463). When an individual experiences a high level of public self-consciousness, he/she is more concerned with how he/she appears to others (Buss and Scheier, 1976). How might self-awareness and self-consciousness be created within an individual? In many experiments the use of a mirror-condition, in which a mirror is placed before an individual (while answering a series of questions), is favoured. By seeing oneself in the reflection, it was tested whether self-awareness created changes to responses to questions (Buss and Scheier, 1976, Wicklund and Duval, 1971). Other methods include having the subject listen to a recording of one’s own voice (Wicklund and Duval, 1971). These however, are mechanisms that bring about private self-consciousness.

Public self-consciousness is brought about through social contact – which can cause feelings of anxiety as the individual becomes aware of him/herself as a social object. Fenigstein et al. (1975) find through their research, that public self-consciousness is related to ideas first formulated by Mead (1934) that a person can only experience public self-consciousness when that person is aware of another person’s perspective. The individual considers how others would react to him/her and through this process, the individual is viewed as a social object. As is stated by Buss and Scheier (1976:464) “the publicly self-conscious person focuses on how he impresses and is viewed by others”. A group setting provides this social contact and, the characteristics of the others in the group will affect the level of self-consciousness (Wicklund and Duval, 1971).

The level of public self-consciousness can be increased through social contact, particularly when, and "to the extent that others are present who are thought by the individual to be observing and evaluating" (Wicklund and Duval, 1971:322). When this level of public self-consciousness increases, an individual may become anxious about the perceived judgement of others (Fenigstein et al., 1975). A social example is attending a formal event in very casual clothing – one is likely to feel self-conscious as a result of the difference between you and the other guests. This feeling might be heightened due to the perceived notion that, because of the difference in attire, everyone is looking at you and judging you. In fact, this type of experiment design was used by Singer, Brush and Lublin (1965) when testing whether the level of identifiability impacts on conformity and anxiety. Their hypothesis, which was proven through their experimentation, was that "the more identifiable an individual feels, the more likely he is to conform in an Asch situation; groups which are in settings containing cues to identifiability will have higher proportion of conformers than groups whose settings provide fewer cues to identifiability" Singer et al. (1965:358). Their experiment used clothing as the cue for identifiability.

Conversely, there are means by which self-consciousness can be reduced. "Deindividuation" is described as a "state in which group members do not stand out as individuals" and as a result they lose their self-consciousness (Wicklund and Duval, 1971:320). Citing the research of Festinger, Pepitone and Newcomb (1952), Singer et al. (1965) show that in group situations of reduced identification (i.e. homogenous groups), individuals in those groups are more likely to behave in an antinormative manner. The cause of antinormative behaviour is thought to stem from the loss of ones sense of

individuality in the group and the resultant liberation from one's individual inner inhibitions (Singer et al., 1965). Some of the results of deindividuation are "(1) restraints against undesirable behaviours are reduced and (2) the person feels increased attraction to the group to the extent that restraints are reduced" (Wicklund and Duval, 1971:320). In their summary of literature dealing with deindividuation, Hiltz, Johnson and Turoff (1986) note that previous studies also suggest that deindividuation results in reduced self-consciousness and self-awareness.

Social anxiety is described by Fenigstein et al. (1975) as a reaction to the self-awareness created through public and/or private self-consciousness. They define social anxiety as "discomfort in the presence of others" and explain that "when attention is turned inward, a person may find something to be anxious about" (Fenigstein et al., 1975:523). This anxiety can result in attempted correction of antinormative behaviour, as is found by Wicklund and Duval (1971:337), who note that when an individual believes he is being observed and evaluated, that individual will "examine his performance relative to the level to which he aspires, then he will attempt to close the distance between performance and aspiration".

In experiments conducted by Singer et al. (1965) the authors hypothesise that one of the main drivers for conformity within a group, even when conformity results in a "counter-factual" response, is that the individual becomes anxious about the possible consequences of departure from the group's established norm. More importantly, the authors note that this anxiety is only present if the individual feels as if he is identifiable within the group. Without the feeling of identifiability, the consequences of deviating from the group are not as worrying to the individual.

The important link here is how the deindividuation and public self-consciousness and the resulting level of social anxiety can come about (Wicklund and Duval (1971:337). It seems that anything which works to increase the level of identification difference in a group would create more public self-consciousness and social anxiety and anything which reduces the level of identification difference would create deindividuation. It thus seems logical to propose that through different compositions of a group in which an individual finds him/herself, this process of viewing oneself as a social object will change. When the group is made up of individuals all alike, there is less public self-consciousness (deindividuation) and social anxiety and when the group is diverse, there is heightened public self-consciousness and social anxiety.

The level of identifiability within a group can create two polar behaviours. Within groups with high levels of identifiability, the resultant self-awareness and anxiety can cause a movement to normative behaviour. Conversely, and to the other extreme, when in groups of deindividuation (lack of identifiability) there is a release of inhibition and accountability for the self – leading to possible antinormative behaviour. Deindividuation can include situations such as “trick or treating” in which children are dressed in costumes on Halloween (Diener, Fraser, Beaman and Kelem, 1976) as well much more extreme situations such as the Klu Klux Klan and other terrorist factions which conceal the individual identity.

2.2.4 Students and cheating as a proxy for dishonesty

Research has revealed two matters of interest with regard to students and their propensity to cheat. Firstly, that there is a correlation between how accounting students feel about ethical issues and the actual occurrence of academic dishonesty (Ameen et al., 1996). Secondly, there is a strong relationship between a student's propensity to cheat in an academic environment and his attitude toward unethical behaviour in the corporate environment (Lawson, 2004). These two findings show the following: students who are willing to engage in certain forms of academic dishonesty often do act unethically by cheating, and if that propensity to cheat in an academic environment is strong, there is a strong likelihood that the individual is likely to act dishonestly in the corporate environment. So while this research makes use of student groups to assess a social phenomenon, the results of such an experiment are still considered appropriate and applicable to other groups including groups which function within a business context.

Experiments within social psychology are most commonly set in opposition to this limitation wherein the group being assessed in an experiment are most commonly students. In an entire chapter (*Experiments in a vacuum*) devoted to this issue, Tajfel addresses this by stating that "there is no reason why socio-psychological theories – or at least some of the hypotheses derived from them – cannot be tested in experimental settings, and there are good reasons why they should be" (Israel and Tajfel, 1972:77).

2.3 Conclusion

The literature review shows that an individual's level of self-awareness, often caused largely by the level of public self-consciousness being experienced, can result in an introspective and uncomfortable evaluation of oneself. When the individual knows that he or she should comply with social norms and feels as if he/she is being evaluated against that norm, this creates a feeling of heightened self-awareness and social anxiety. The feeling of being evaluated by the group is likely to occur more in environments of high identifiability. Environments of deindividuation (lack of identifiability) can reduce inhibitions and the feeling of accountability as an individual.

The presence of either identifiability or deindividuation cues in a group can, in turn, trigger a movement from antinormative behaviour to behaviours more in-line with social norms. The establishment of social norms stems from both descriptive and injunctive norms, with the latter being most closely linked with approval or disapproval from social groups. The literature also shows that the composition of a group may have a significant effect on the establishment of those injunctive norms, and that individuals are motivated to maintain their ingroup social identity, so it follows logically that group composition can affect the individual's behaviour.

This study uses accounting students (and possible future business leaders) to examine individual ethical behaviour in a group situation. This will add to the literature base as no other study has been conducted in South Africa on the propensity to behave unethically in a homogenous or a diverse group situation.

3 Chapter III - Methodology

This study uses primary data in order to investigate whether diversity within groups reduces the extent of dishonest behaviour. Data was collected in three different ways, a scored assessment, a student questionnaire and obtaining existing student demographics and course score information. These will be detailed in the Instrumentation section below.

3.1 Population and sampling

The population includes individuals who perform individual tasks within a group context. Although student groups were used in the experiments, the results of this study are still considered to be relevant to other individuals in groups including those who function in a business context such as boards of directors and most work teams or groups in an entity.

As was discussed in the literature review, there is a strong relationship between a student's propensity to cheat in an academic environment and his attitude to unethical behaviour in the corporate environment (Lawson, 2004). While the limitation of using a student sample is noted, based on the above research, the sample is considered appropriate for extrapolation to group functioning within a business context.

The sample for this study was accounting students from the University of the Witwatersrand - selected from two undergraduate student classes. Each class was divided into sub-groups with all group sizes between four and seven students. Due to the nature of the underlying group tasks in which these two student classes were involved, the group sizes were not identical. The two classes are those of the second year auditing course and

the third year auditing course. The students enrolled for these courses are all on the same undergraduate path and are a single year apart in terms of progression.

One of the two classes was placed into groups to achieve diversity in terms of gender (as far as possible a mix of males and females was achieved) and race (as far as possible representatives from different races within each group was achieved). This was done using the university class list together with demographic information, using Microsoft Excel to filter and assign individuals to the appropriate groups.

The second class made up the homogenous conditions and students were placed in groups which are homogeneous in terms of both race and gender. These homogenous groups were assigned first by grouping the particular race and gender of the students and then by sorting alphabetically from A to Z by name, once again using the class list in Excel format. This was to try to ensure that the students were not placed into groups with other members with whom they already had established relationships.

The two classes are very similar - all are auditing students separated by only a year's studies. The two classes share similarity in terms of age, demographic profile and university experience. The allocation of a single class to the diverse condition was done as these students were already placed into such groups for projects being completed for actual course purposes. The second year class were placed into diverse groups for the course project – presenting the opportunity to assess the effect of diversity. By default, the third year class was used to make up the homogenous condition. Even with the similarity between the groups, the allocation of a single class to the homogenous condition and the

other class to the diverse condition has been considered as a possible limitation to the applicability of the results.

Finally, the groups which were created above, were randomly allocated to either the Observed or Opportunity condition of the experiment. As this was done randomly it was not ensured that there were a similar number of participants according to race and gender in the Observed or Opportunity condition. This was performed using a random number generator in Microsoft Excel, sorting by number from smallest to largest and then grouping half of each class into the two conditions.

The matrix summarised the four variations of the experiment.

Racial & Gender Diversity

Opportunity to Cheat	**Homogenous**	**Diverse**	***Total n***
Observed	All group members of same race and gender. Observer present for duration of test. (n=173) (groups= 33)	Group members are not all same race and gender. Observer present for duration of test. (n=177) (groups= 30)	*350*
Opportunity	All group members of same race and gender. No observer, students are free to cheat in front of other group members. (n=155) (groups= 32)	Group members are not all same race and gender. No observer, students are free to cheat in front of other group members. (n=183) (groups= 32)	*338*
Total n	*N=328, Groups=65*	*N=360, Groups=62*	*688*

Matrix 1: Sample sizes across experiment conditions

The sample consisted of 49.6% male and 50.4% female. The race breakdown was as follows: Black 57.2%, Indian 24%, White 16%, Coloured 1.5%, and Chinese 1.3%.

These demographics were not chosen specifically but rather were the demographics of the combined classes used for the experiments. As can be seen, there was a relatively equal split between male and female within the sample. In terms of race, black students were the majority of the classes at approximately, followed by Indian students, white students and then a small number for Chinese and coloured respectively.

All research conducted through the instrumentation described below was voluntary. Students were provided with the opportunity to complete these assessments after they had completed group work required for their course credit. There were no students within the groups who chose not to participate. Ethics clearance was obtained through the University Of Witwatersrand School Of Accountancy Research Committee. Students were required to place their student numbers on the instruments used in order to assess the groupings – the results have not been linked to actual student names as this is not necessary for the purposes of the study.

3.2 Instrumentation

Experimental task - Mathematical competency assessment

The first instrument provides the data with which to analyse the possible unethical behaviour by students within a group context. Please refer to Experimental Task -

Mathematical Competency assessment in appendix 8.1 which details the actual instrument provided to students. While the assessment requires solving mathematical problems, the aim is not to determine a student's mathematical competency, but to use the assessment as an experimental task through which dishonesty can be assessed. A similar method was used by Gino et al. (2009) in which a mathematical task was used as the subject matter in an attempt to distinguish cheating students from honest students.

This mathematical competency assessment was freely available from a United States High School website (accessed at http://www.milton.k12.wi.us/schools/mhs/website/guidance/test1-.html%20on%206%20March%202013 on 6 March 2013). This assessment is used by the school to test student competency before their final examinations. The assessment was adapted by removing longer questions in order to maintain a consistent difficulty and length among all questions and was further adapted by changing references of United States Dollars to South African Rands. Through the perusal and amendment of this assessment, it was noted that the level of mathematical ability being tested was appropriate for South African high school pupils. The assessment consisted of 20 high school level problems which required to be solved. The students were not allowed to use calculators, nor communicate with other members in the group. A time limit of five minutes was communicated to the each group upon beginning the assessment.

The assessment was marked by associate lecturers, assigning one point per correct answer. The assessment achieves validity as each question has only one correct answer. As the mathematical competency assessment tests the mathematical ability of the student, it is not expected to show internal consistency as many students will have different answers.

A questionnaire was also provided to each student. This comprised demographic questions, including religious affiliation and socio-economic standing of the students in the sample.

Mathematical ability

To ensure that the scores from the task are not a function of ability, the mark achieved for a first year Mathematics course (Computational Mathematics, hereafter CompMaths) was obtained for each student. This variable is used to compare to the mark achieved in the Mathematical Competency assessment and extract the effect of pure mathematical ability from the effect of possible cheating.

3.3 Procedure

The experimental task described above was completed by each individual in the sample, 688 in total. Each individual was allocated to a group of between 4 to 7 students as is discussed in the sample. Each group was allocated to a condition (opportunity to cheat versus being observed). Students from the second year class were also in groups which were diverse. Students in the third year class were in groups which were homogenous. The number of groups between conditions were comparable (Homogenous Observed 33, Homogenous Opportunity 32, Diverse Observed 30, Homogenous Opportunity 32).

The procedure for conducting the experiment was intentionally different with the observed versus the opportunity to cheat conditions. In both, a supervisor was present in the room to receive each of the student groups (a timetable was set up allocating each student group a

time and location), introduce the assessment and give instructions on the manner in which to complete the assessment. These instructions follow:

- This assessment tests your high school equivalent mathematical ability.
- Please complete this assessment to the best of your ability – this assessment is to be done individually.
- Students who score in the top 50% of all marks will be included in a random draw for a prize of R500 Sandton City Gift Card/Cash Prize.
- You have 5 minutes to complete as many of the questions as possible.
- Each correctly answered question will receive 1 out of a possible 20.
- A calculator or cell phone may not be used for this assessment.

To ensure that students attempted the assessment to the best of their ability, a monetary prize (R500 voucher) was offered as additional incentive. All students who fell into to the top 50% of student results were eligible for the draw. Students were not allowed to use a calculator, use their cell phones, nor talk amongst each other as it was communicated the assessment was to be done individually despite the entire group being present in the room.

The following different approaches were used in the observed versus opportunity conditions.

Within the observed conditions of the experiments, the supervisor remained present for the duration of the mathematical competency assessment (five minutes each), ensuring that the

instructions communicated were being followed. After the five minute period, students were told to stop writing and hand in their assessments.

Within the opportunity condition however, the supervisor left the student group unattended immediately after the instructions were given and a timer had been set at five minutes. In addition to the instructions given above, students in this condition were asked to stop writing and leave their assessments on the desk when the timer sounded at the end of the assessment. They were told that their assessments would be collected when the next group started their assessment in half an hour. The supervisor would collect the assessments when they returned for the next group thirty minutes later. Students in the opportunity conditions thus had the opportunity to cheat on the mathematical competency assessment by either using their calculators to find the answers in a significantly faster and more accurate manner, or by collaborating with other members of their group, or taking more time than the allocated five minutes, or a combination of any of the three of the above. Any of these would have the effect of greatly increasing a student's mark over someone who did not use such methods. As is clear in all three methods of cheating, actually committing such a misdemeanour could not be done without other members of the group knowing. Thus once a student decided to cheat, one's fellow group members would be aware of such cheating.

3.4 Analysis of data

There are two independent variables within all the experiments. Firstly, the composition of the group in terms of being diverse or being completely homogenous (hereafter referred to

as the “group” allocation) and, secondly, the condition into which the student was randomly placed - observed versus opportunity condition (hereafter referred to as the condition).

The dependent variable is the student score on the experimental task of the mathematical competency assessment. This mark reflects the number of correct answers that a student achieves out of a possible 20. When this mark is considered in conjunction with the independent variables of the condition and group into which an individual was placed, it is possible to infer dishonesty with reference to how well a student in each experiment condition scored in the instrument - relative to those in other conditions. As the observed conditions provide a control for dishonesty (as it was not possible to cheat with the supervisor present and observing) the differences in the marks can possibly be ascribed to the manipulated variable of the diversity or homogeneity of the group in which the individual was placed when completing the assessment.

As all students within the School of Accountancy are required to have passed mathematics as a high school subject in order to gain entrance, the researcher can be assured that all students are familiar with such mathematical problems. As is seen in Gino et al. (2009) through using a relatively simple subject matter based assessment, the notable differences between individuals was largely because of the manipulated variable (opportunity to cheat). While this instrument clearly tests the mathematical ability of a student – due to the design and implementation of the data gathering process, the researcher is able to analyse the data obtained from groups of students in order to infer possible cheating.

To analyse whether any dishonesty was noted, a between subjects two-way analysis of variance (ANOVA) parametric test was conducted. To use an ANOVA, there are several assumptions that must be met. All of these assumptions were considered and tested graphically (through inspection of histograms and box plots) and statistically. Key amongst these assumptions is the approximate fit of the data against the normal distribution curve. There was no need to transform the data or use non-parametric testing as the assumptions were considered to be valid.

The ANOVA was performed considering the effect of the factors of Group and Condition (main effect) and also of the interaction between Group and Condition. To summarise the ANOVA, pairwise comparisons of the marginal means were performed.

As it is possible that the results on the Mathematical Competency assessment may be a reflection of mathematical ability and not of possible dishonesty, an analysis of covariance was run using the CompMaths marks. This controls for the effect of the mathematical ability.

3.5 Assumptions

The following assumptions have been made with regard to this research report:

- It is assumed that the social actions of the student groups can be inferred to apply to broader groups of people acting under similar conditions.
- It is assumed that students will answer the mathematical ability question paper to the best of their ability. Due to the offering of an incentive for good performance, this assumption is considered reasonable.

- The purpose of this study is to assess whether diverse groups cheat less than homogenous groups. Through the setup of the experiment, it is assumed that cheating in the mathematical ability question paper is not possible without all other members of the group being aware of such unethical actions. Examples include talking with one-another and use of a calculator (neither of which could be done without other members of the group being aware of this). The reason why this assumption is important is that if an individual could cheat without the rest of the group being aware of that unethical decision, then it is unlikely that the group diversity will affect that decision. Much as on a board of directors who vote on a matter by a show of hands, the individuals decision is known to the other group members, the individuals in the groups would have had to make their decisions to act ethically or unethically, and these decisions would be known to the rest of the group members.

4 Chapter IV - Results

The results of the experiments conducted are detailed below, starting with descriptive statistics.

		N
Group	Homogenous	328
	Diverse	360
	Total	688
Condition	Observed	350
	Opportunity	338
	Total	**688**
Race	Indian	165
	White	110
	Coloured	10
	Black	393
	Chinese	9
	Missing	1
	Total	**688**
Gender	Male	341
	Female	346
	Missing	1
	Total	**688**

Table 4.1 Descriptive statistics

Group	Condition	N	Mean*	Std. Deviation*
Homogenous	Observed	173	4.72	2.063
	Opportunity	155	9.32	4.186
	Total	**328**	**6.87**	**4.001**
Diverse	Observed	177	4.72	2.033
	Opportunity	183	7.23	3.35
	Total	**360**	**5.98**	**2.982**
Total	Observed	350	4.72	2.046
	Opportunity	338	8.28	3.981
	Total	**688**	**7.57**	**3.565**

**Mean and standard deviation before removal of outlier data points*

Table 4.2 Mean and Standard Deviation of the Mark

The next step taken was to establish the appropriateness of the use of an ANOVA through the testing of the inherent assumptions.

4.1 Testing assumptions and data transformation

In order to use an ANOVA, there are several assumptions which need to be tested. Some assumptions are more robust than others in the sense that, despite small violations, an ANOVA might still be appropriate to use.

1. The first assumption is that the dependent variable should be measured at the continuous level.

   The test scores are a continuous variable so this assumption has been met.

2. Both independent variables should consist of two or more categorical independent groups.

   In this study, the independent variable of Group has two subgroups, Diverse and Homogenous, and the Condition independent variable has the two subgroups Opportunity and Observed.

3. There should be independence of observations within each of the subgroups.

   As different students have been used in each subgroup, and no student was in more than one subgroup, each subgroup's observations are considered to be independent of one another.

4. There should be no significant outliers

In the original data set there were several outliers, as is evidenced by the box plots below. The points displayed indicate the statistical outliers.

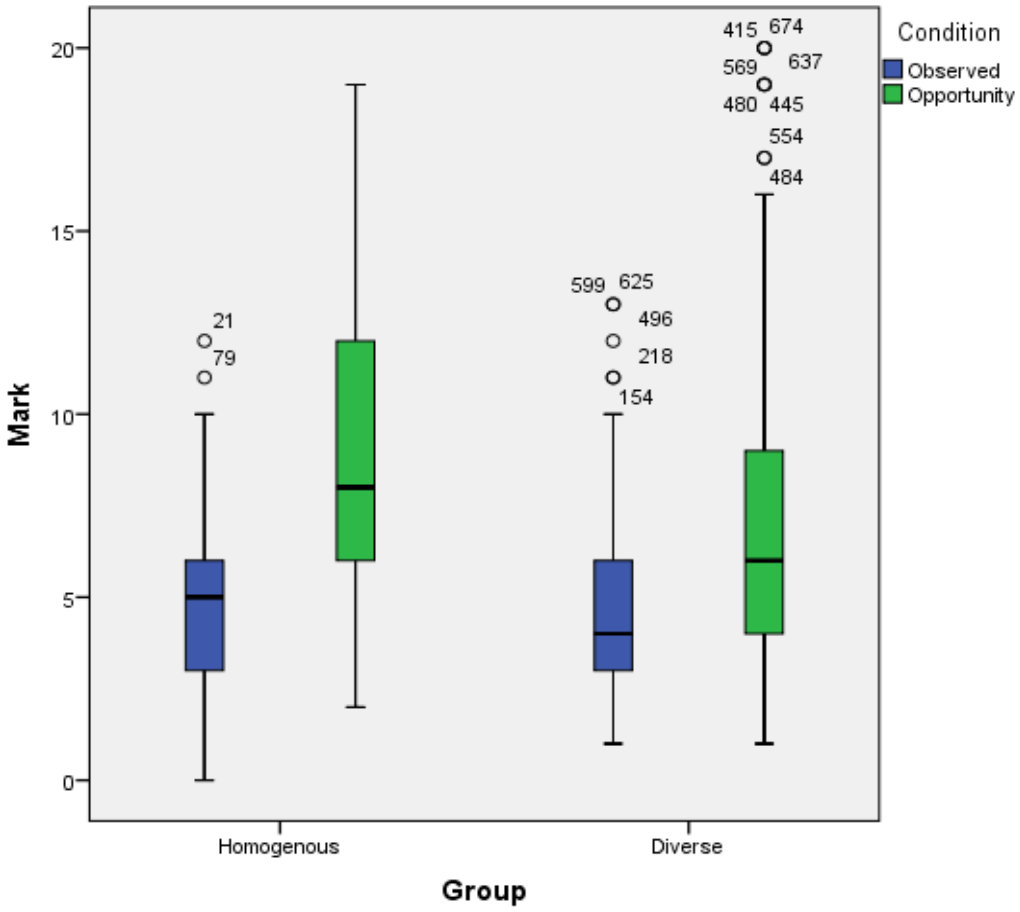


Chart 4.1 Outlier data points to be removed from analysis

These data observations were removed from the statistical analysis.

5. The data observations should be approximately normally distributed for each combination of the groups of the two independent variables.

To test statistically the acceptability of the assumption of approximate normality, a Shapiro-Wilk test was performed:

	Group	Condition	Shapiro-Wilk		
			Statistic	df	Sig.
Mark	Homogenous	Observed	0.958	171	0.000
		Opportunity	0.943	155	0.000
	Diverse	Observed	0.957	172	0.000
		Opportunity	0.942	175	0.000

Table 4.3 Shapiro-Wilk test of Homogeneity of Variance

The null hypothesis of this test is that the observations fit the normal distribution and this null hypothesis is rejected if the p value is less than 0.05. As can be seen above, the p values for all subgroups are less than 0.05 and so we may have to reject the null hypothesis of normality. However, due to the large sample size it is necessary to examine the Q-Q plots to determine whether the hypothesis has been correctly rejected.

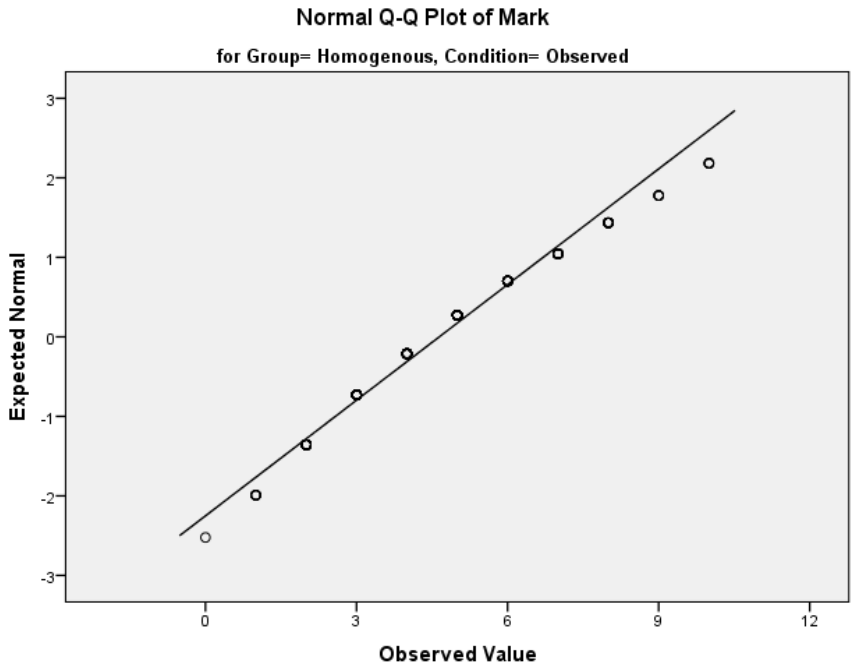


Chart 4.2.1 Q-Q plots of mark across Homogenous-Observed experiment condition

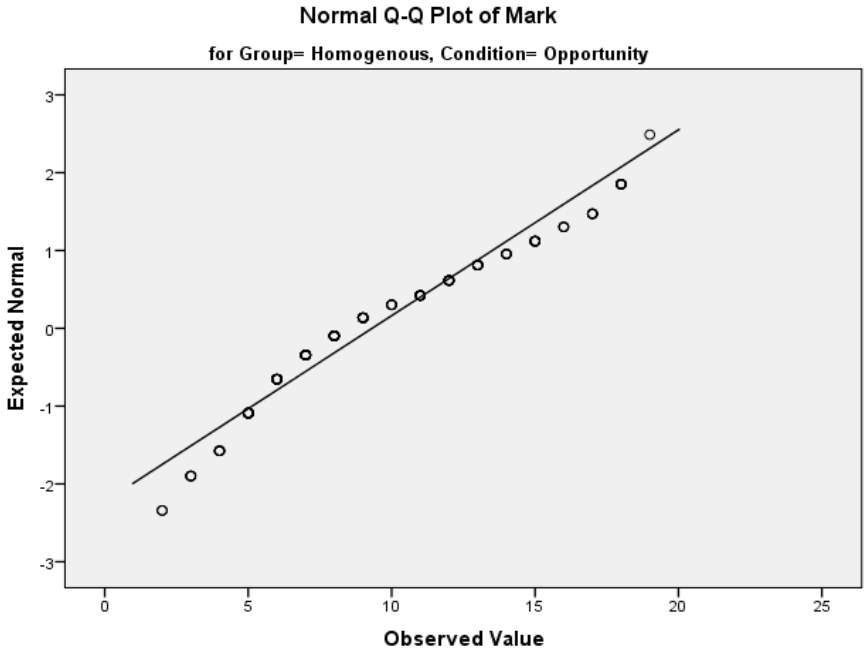


Chart 4.2.2 Q-Q plots of mark across Homogenous-Opportunity experiment condition

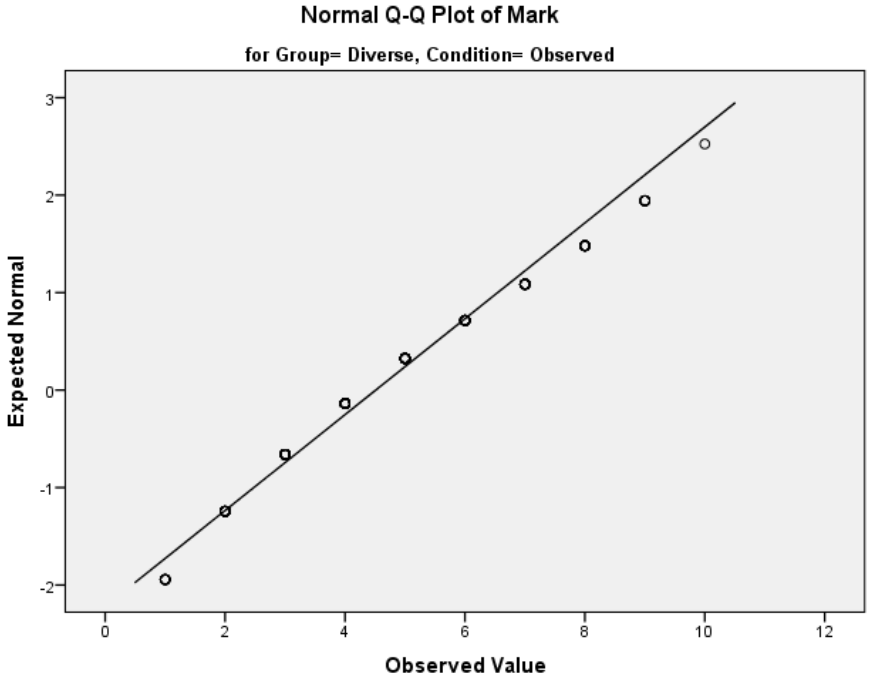


Chart 4.2.3 Q-Q plots of mark across Diverse-Observed experiment condition

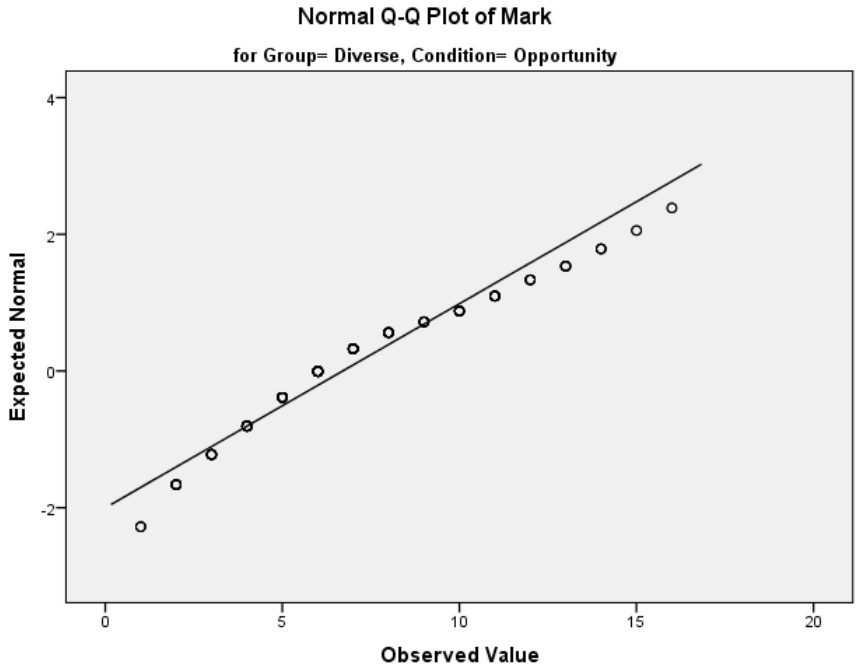


Chart 4.2.4 Q-Q plots of mark across Diverse-Opportunity experiment condition

As can be seen above, the majority of points follow the straight upward sloping line on the Q-Q plots, with a slight positive skew being noted for the opportunity conditions.

The relatively large sample sizes for the groups may have caused the normality tests to be sensitive and the departure from normality is similar for the different groups (positive skewness) (Field, 2009). To confirm or dispel the acceptability of the normality of the subgroups, statistical tests of skewness and kurtosis were performed. Please see below:

	Group	Condition		Statistic
Mark	Homogenous	Observed	Skewness	0.49
			Kurtosis	-0.08
		Opportunity	Skewness	0.55
			Kurtosis	-0.64
	Diverse	Observed	Skewness	0.43
			Kurtosis	-0.39
		Opportunity	Skewness	0.74
			Kurtosis	-0.02

As the skewness and kurtosis for each of the subgroups are within the range of -1 to 1 this is acceptable as approximating a normal distribution (Bulmer, 2012). It was not considered necessary to transform the data in order to perform the ANOVA tests.

6. There is homogeneity of variance across each of the subgroups.

This requires that the variation within each of the subgroups is similar. The Levene's test for homogeneity of variance was performed. The test was violated as the null hypotheses if homogeneity of variance couldn't be rejected (p value was less than 0.05)

However, once again this is not be considered problematic because of the comparable group sizes (Field, 2013:445). Also, the reasonably large group sizes may have caused the test to be fairly sensitive. It is also worth noting that it is the purpose of the experiment to assess whether homogenous groups are more dishonest than diverse groups and, therefore, such a lack of homogeneity of variance is reflective of the actual findings.

4.2 Primary analysis

4.2.1 Results of analysis of variance

The first step in testing the statistical significance of the effects of both group and the condition in which students were placed is to provide the results of the ANOVA, together with descriptive statistics.

Group	Condition	N	Mean	Std. Deviation
Homogenous	Observed	171	4.64	2.063
	Opportunity	155	9.32	4.186
	Total	326	6.87	4.001
Diverse	Observed	172	4.51	2.033
	Opportunity	175	6.7	3.35
	Total	347	5.62	2.982
Total	Observed	343	4.58	2.046
	Opportunity	330	7.93	3.981
	Total	673	6.22	3.565

Table 4.5 Mean and Standard Deviation of the Mark

As can be seen from the descriptive statistics table above, sample sizes are large and relatively comparable across subgroups. Significant differences are noted in the means within the homogenous grouping and less significant differences in the diverse grouping.

Effect	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	317.698	1	317.698	34.954	0.000	0.05
Condition	1981.057	1	1981.057	217.959	0.000	0.246
Group * Condition Interaction	259.803	1	259.803	28.584	0.000	0.041
Error	6080.636	669	9.089			
Total	34602	673				

Table 4.6 ANOVA Tests of Between-Subjects Effects - Mark as dependent variable

All effects are significant as the p values are all less than 0.05. The significant interaction effect is an indication that the group differences change across the different condition options.

- Note that the effect size for the main effect of Condition is slightly larger than it was for the main effect of Group.
- The effect size of the Condition is the largest and can be considered to be moderate.
- The effect size for the interaction effect is small as evidenced by the eta-squared value of 0.041 (η2: Small≈0.02)

The R^2=0.285, indicating that 28.5% of the variance is explained by the factorial model.

A comparison of the means of the four subgroups reveals that there is relatively little movement across the groups when they are both being observed but there was a noticeable increase in means of the groups in general when the opportunity for cheating was available. Furthermore, it appears that there was an even larger increase when the opportunity to cheat was provided to a homogenous group compared to a diverse group.

The above seems to indicate that there is a main effect of the condition and, more importantly of an interaction between the group and the condition.

4.2.2 Marginal means and pairwise comparisons

As an interaction between the condition and the group allocation was noted in the results of the ANOVA, the marginal means and pairwise comparisons of the interaction need to be investigated.

The tables and charts below show the mean differences split, firstly, within condition showing the different groups and, secondly, within the group by the appropriate condition.

Condition	(A) Group	(B) Group	Mean Difference (A-B)	Std. Error	Sig
Observed	Homogenous	Diverse	0.132	0.330	0.690
Opportunity	Homogenous	Diverse	2.544	0.337	0.000

Table 4.7a Pairwise comparisons of Condition

The mean difference between the opportunity condition groups is higher than the difference in the observed condition groups. Refer also to the chart below which shows this relationship.

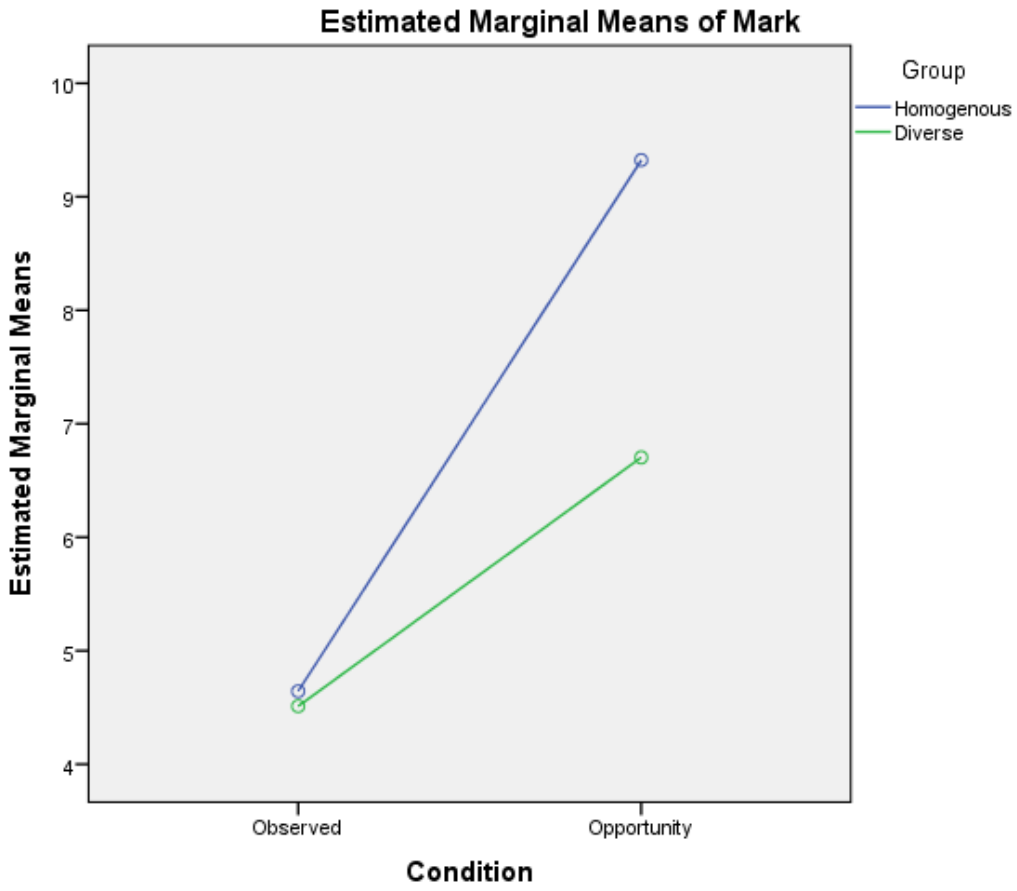


Chart 4.3 Estimated margin means of the mark across condition

The Pairwise Comparisons table and chart of the means (and mean differences) above show that there is no significant difference between the Homogenous and Diverse groups within the observed conditions. However, even within the opportunity conditions, there is a significant difference as evidenced by the p value of less than 0.05.

Group	(A) Condition	(B) Condition	Mean Difference (A-B)	Std. Error	Sig.
Homogenous	Observed	Opportunity	-4.679	0.334	0.000
Diverse	Observed	Opportunity	-2.191	0.324	0.000

Table 4.7b Pairwise comparisons of Group

The mean difference between the homogenous group conditions is higher than the difference in the diverse condition groups but not by as large a difference. This can be interpreted visually below.

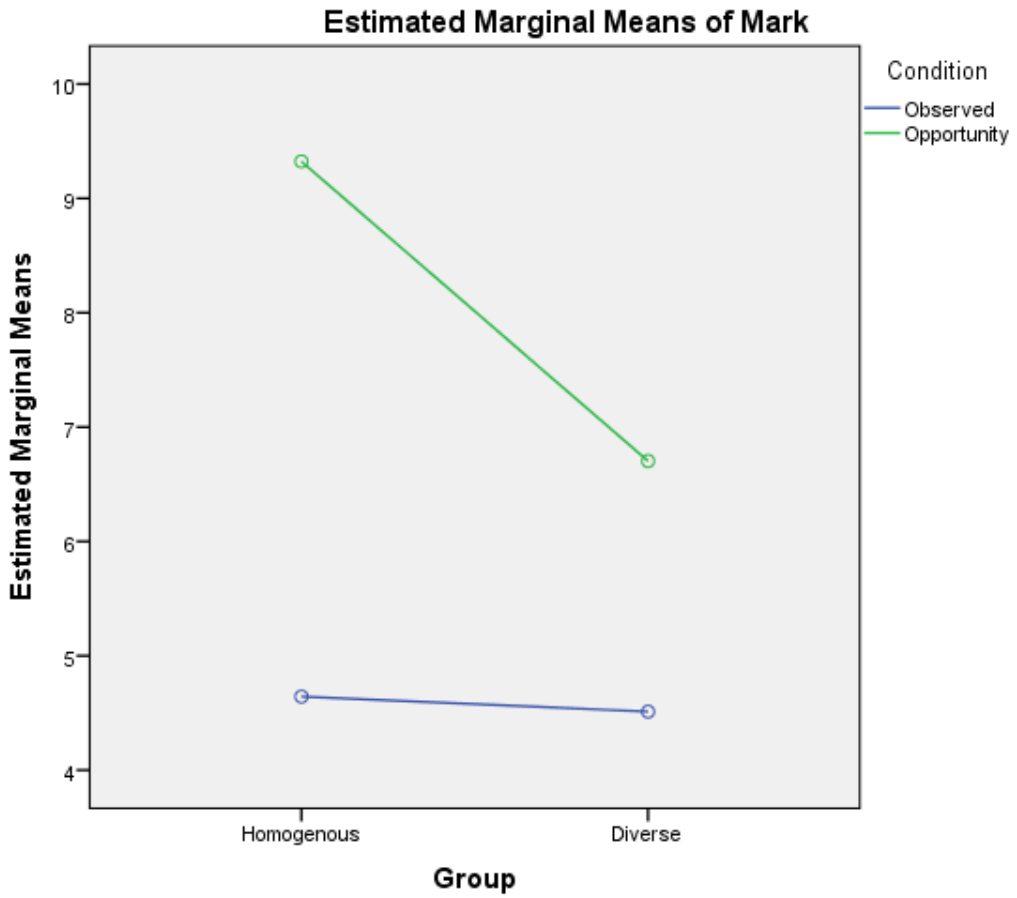


Chart 4.4 Estimated margin means of the mark across Group

The interaction can be described by saying that, of those students in the homogeneous class, those in the opportunity condition scored a considerably higher mark than those in the

observed condition. While in the diverse class, the opportunity condition scored more than those in the observed condition – however the increase in their mark was less than half compared to those in the homogeneous group.

In summary, both groups who had the opportunity to cheat, did appear to take that opportunity and improve their marks. However, the increase within the opportunity conditions shows that the diverse groups did not cheat nearly as much as did the homogenous groups.

4.2.3 Controlling for mathematical ability

With the subject matter of the experimental task being a test of mathematical ability, it is possible that the increase in the means noted above are as a result of the superior mathematical ability of the students in those groups. As the two classes are not significantly different from one another, particularly in terms of mathematical ability, it is unlikely that the results of the significantly higher means in the opportunity conditions are due to better mathematical ability. Since both observed conditions have similar means and yet both opportunity conditions have much higher means, the statistical results can be bolstered by removing, as far as possible, the effect of mathematical ability.

In order to test whether it was indeed mathematical ability or of cheating which created this effect, each student's first year university mathematics course mark (CompMaths) was obtained and used to determine whether there is a correlation to the mark achieved in the Mathematical Competency assessment.

4.2.3.1 *Correlation and homogeneity of regression*

First, a Pearson correlation test was performed to identify any relationship between the dependent variable and the students' CompMaths marks. The correlation between CompMaths and the actual marks achieved was only 0.073, indicating a very weak correlation between the two variables. Upon analysing the actual data, it was noted that there are many students who achieved very low marks for CompMaths but managed to achieve exceptional results when completing the Mathematical Competency assessment. Conversely, there are students who achieved exceptionally high marks for CompMaths but did not fare well in the assessment in the Mathematical Competency assessment. There is effectively no correlation between marks achieved on the mathematical competency assessment and CompMaths.

For conclusive evidence of the lack of effect that the students' mathematical ability has on the results of our ANOVA, CompMaths was used as a covariate.

4.2.3.2 *Analysis of Covariance (ANCOVA)*

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
CompMaths	96.265	1	96.265	10.832	0.001	0.016
Group	284.282	1	284.282	31.988	0.000	0.047
Condition	1973.804	1	1973.804	222.096	0.000	0.254
Group * Condition Interaction	252.34	1	252.34	28.394	0.000	0.042
Error	5803.333	653	8.887			
Total	33366	658				

Table 4.8 ANCOVA - Tests of Between-Subjects Effects - Mark as dependent variable with CompMaths as covariate

All the effects are still significant and the interaction effect is an indication that the group differences changes across the different condition options even after controlling for CompMaths.

Note that the effect size of CompMaths is small, the effect size of the main Group effect is now slightly smaller, and the effect size of the main Condition effect is now slightly larger and that the effect size of the interaction effect is slightly larger as compared to the results of the original ANOVA without the covariate. The R^2 =29% which is marginally more than without the covariate.

4.2.3.3 Marginal Means

		Mean	Std. Error
Group	**Homogenous**	6.912	0.167
	Diverse	5.593	0.162
Condition	**Observed**	4.512	0.163
	Opportunity	7.993	0.167
Grand Mean		6.252	0.116

Table 4.9 Marginal Means with Covariate of CompMaths

The overall mean is only slightly lower with the covariate than without it (6.252 versus 6.295). The homogeneous group tended, on average, to score a higher mark than the diverse group even after controlling for CompMaths. The means of both groups above are only slightly lower than that of the ANOVA. The group of respondents who were tested under

conditions that created an opportunity for cheating tended, on average, to score a higher mark than those who were observed. Once again, the means are only slightly lower than the ANOVA.

Group	(A) Condition	(B) Condition	Mean Difference (A-B)	Std. Error	Sig.
Homogenous	Observed	Opportunity	-4.722	0.336	0.000
Diverse	Observed	Opportunity	-2.24	0.324	0.000

Table 4.10 Pairwise comparisons of Group with CompMaths as Covariate

The opportunity groups have higher means in both the homogeneous and the diverse groups but the differences range from 2.240 in the diverse group to 4.722 in the homogeneous group. These differences are now larger with the covariate than they were originally (2.19 and 4.679).

As all effects are still significant even with the covariate of CompMaths, it can be concluded that the statistical significance of the difference between the Homogenous and Diverse groups is not caused by varying mathematical ability.

5 Chapter V - Discussion

The results of the statistical analysis appear to confirm the hypothesis that diversity within groups does reduce the level of dishonesty of the individuals within the group, as compared to individuals within homogenous groups.

These results are striking, especially in light of the literature reviewed in terms of the likelihood that students cheating in an academic environment is correlated with the actual occurrence of or propensity to cheat in a corporate environment (Ameen et al., 1996).

Students who were in groups which were observed during the experimental task faired similarly in terms of their marks, whether they were in the diverse group or a homogenous group. One might have expected that when students in either a diverse or a homogenous group were given the opportunity to cheat, both group means would increase dramatically. However, students who were placed into groups which had the opportunity to cheat during the experimental task had significantly different marks based on whether they were in a diverse or homogenous group – with the opportunity/homogenous mean being 2.54 points higher than the opportunity/diverse mean. This seems to indicate that the two independent variables of group composition and the opportunity to cheat definitely do affect the mark. But it is the manipulation of the group composition that, in fact, has a greater effect, as even when both diverse and homogenous groups had the opportunity to cheat, there is no evidence of significant cheating amongst diverse groups.

Even when the students' pure mathematical ability is removed from the analysis, the above finding persists, supporting the conclusion that higher results were not likely to be the result of ability but rather through taking the opportunity to cheat – which was done more when the group in which an individual found him/herself was a homogenous group.

Through the process of manipulating the composition of a group, a set of closely related socio-psychological principles is set in motion. In terms of analysing the results in light of the literature reviewed, there are many possible theories which could be applicable.

5.1 Social norms

An act such as cheating would almost certainly be considered unethical in terms of the injunctive norm, consistent with the literature reviewed by Ameen et al. (1996). Students might have considered at the outset, that cheating on the assessment would also be construed by other members as being an unethical act in terms of the descriptive norm. As is seen in the research by (Gino et al., 2009), even transient groups such as the student groups used, can present the characteristics of social groups and thus reflect different social norms. It appears that these norms took different shapes within the homogenous and diverse groups as it is evident that the homogenous groups took the opportunity to cheat more than the diverse groups, even when both were not being observed. This supports the literature which generally points to the hypothesis that norms are situational and can change depending on the social context (Cialdini and Trost 1998). The manipulation of the social context in this experiment too has had this effect of changing the perceived norms of the

different groups. However, of more interest is how these norms are actually changed – a process which starts with categorization of the individuals within a group.

5.2 Social categorization & Social conformity

Individuals in a group tend to self-categorize and also categorize others within the group setting (Pelled et al., 1999). In these experiments, it is possible that students either noted that they were in a completely homogenous group, associating themselves with the rest of the group (ingroup categorization) or alternately, they noted they were in a diverse group, categorizing themselves as different from some of the other members (outgroup). Subconsciously, categorization might even have happened subconsciously without the student actually being explicitly aware of the group composition. This categorization could ultimately have an impact on behaviour as individuals are motivated to conform to the injunctive and descriptive norms.

Although cheating was more prevalent in the homogenous conditions, it is not possible to determine whether this was caused by the initiative of a single individual who took the opportunity to cheat and was subsequently followed by one's group or whether there was a consensus among homogenous group members to take the decision to cheat.

This can be illustrated in terms of the social norms, social identity and conformity theories. Once an individual in a group did take the opportunity to cheat, it is possible that there was a compounding effect which led to overall higher group scores. Once other members of the group see a member cheating, they might have reconsidered the descriptive norms of the group (Israel and Tajfel 1972). In order to maintain their sense of identity and social

categorization within the group, many students in homogenous groups, who might not have originally cheated, might cheat as a result of the acceptance of the first individual cheating in the group – as was found in the study by Gino et al. (2009) who observed that dishonesty increases in conditions of strong ingroup identity. The shift in the perception of the group norms and the desire still to ascribe to the group identity might cause this student to cheat.

This can also be described in terms of the social conformity theory discussed in the literature. When the individual was in a group in which a group member actually took the decision to cheat, it is possible that the desire to conform, which is felt more strongly amongst alike groups as discussed in the literature (Levine and Moreland, 1990), also led to the compounding effect of cheating. Based on the theory proposed by Festinger in terms social comparison it was hypothesised that group conflict might actually be higher in homogenous groups. In such a group, the individual is more likely to compare himself as an individual to other individuals in the group. The individuals in that group would experience greater levels of pressure to perform well. If the rest of the group was cheating and getting excellent marks, the non-cheating student would score worse relative to the group. This effect would not be as pronounced in a diverse group as the level of self-comparison would be lower as the individuals in the group are not alike one another.

5.3 Self-awareness and social anxiety

Irrespective of whether it was a single individual who sparked one's group to cheat, or whether it was the group who which decided to cheat, the interesting observation is *why*

members of the diverse groups, even within the opportunity conditions, did not take those opportunities.

What actually occurred in the minds of the students in the different experimental conditions cannot be ascertained – all that can be done is to infer the possible considerations which did go through the minds of the students. This is certainly an area in which there is scope for further research. According to the literature, it is plausible that members in the diverse groups felt heightened self-awareness caused by being surrounded by diverse group members (Wicklund and Duval, 1971). In other words, it can be explained as if the presence of others, from a different demographic, act as a catalyst for increased self-awareness. Once an individual feels like an outsider, as if he/she is not a part of the group, there is a discomfort experienced in the sense of considering ones actions more in light of injunctive norms (i.e. cheating is unethical). The presence of diversity, therefore, through the heightened self-awareness, can cause a movement toward more normative behaviour of not cheating – even when there is opportunity to do so.

Conversely, a student is not as self-aware when he/she is surrounded by students from the same demographic (Festinger, Pepitone and Newcomb 1952). It seems that when in a group of people like themselves, the students were either not fearful of cheating in front of others, or they were not fearful of letting others know that there was an opportunity to cheat. This supports the literature discussing deindividuation which suggests that when an individual loses his sense of self within a group (i.e. when there is homogeneity) there is a reduction in the sense of accountability and inhibition – resulting in higher levels of antinormative behaviour (Singer et al., 1965).

This can possibly be explained as follows: in the low-stakes assessment provided, cheating might not be considered to have been the most severe unethical action in terms of consequence, despite students being told that they must complete the assessment individually and without a calculator. If this was the case however, the level of cheating would have been similar across both the diverse and homogenous groups who went unobserved. This was certainly not the case as when comparing the observed conditions to the opportunity conditions, it was only the homogenous group that had a statistically significant difference – not the diverse group. Therefore, the group allocation in terms of homogeneity or diversity, and the implications of being around different or similar people must have entered into the mind of the students when making the choice to either act unethically or not.

A student might think, that if the opportunity to cheat presents itself he/she would cheat. With that in mind, when in a homogenous group, the individual might think that his fellow (like) team members are probably thinking the same thing. There would be more confidence that the suggestion to act unethically would not be judged in a negative light since the perception of the individual is that the other group members are thinking the same thing. Conversely, in a diverse group, an individual would not have the same level of confidence that his fellow team members, who do not share the same background, race or gender, are thinking along the same lines about the opportunity to cheat. With the reduced confidence, the individual would likely not raise the topic of cheating amongst the group for fear of being judged unfavourably.

5.4 Limitations

Despite the results obtained from the statistical analysis, there are limitations of this research.

There is a limitation that the sample used (student groups) does not represent the larger population. However, research by Cohen, Pant and Sharp (2001) found only insignificant differences in ethical awareness between Canadian business students and accounting professionals. The students in the sample form part of the future business fraternity and there is no reason to believe that their behaviour will change radically if they enter the corporate environment. Although it can be said that a group of students differs vastly from a group of professionals within the corporate arena, there is much research that shows a strong correlation between dishonesty in university and dishonesty in the corporate world (Sierles and Hendrickx, 1980).

As was discussed in the methodology, a single class (second year) was assigned to the diverse conditions as they had already been placed in such groups for a course project. By default, the other class (third year) made up the homogenous condition. The two student classes were, however, equally homogenous/diverse in their composition.

The design of the experimental tasks involved a trade-off between two possible limitations. One of the effects of possible familiarity within the members of the group, and the other of creating a group structure in which members are not actually part of a group but were

simply a grouping of people completing individual tasks without necessarily having a group identity.

As it is plausible that familiarity might affect the willingness to act ethically (irrespective of gender/racial diversity) (Weaver, 2001) this could distort the research findings. In order to mitigate this limitation, steps were taken to avoid such familiarity. As is mentioned within the discussion over the sample, once students were placed into homogenous groups in terms of both race and gender, each student was sorted alphabetically and then placed, as far as possible, into groups of 6 students. The random allocation according to the alphabetical sort mitigates the risk of familiarity. In taking such steps to avoid familiarity, it is clear that there is a limitation to the ability to infer the results of these minimal groups to actual workgroups which complete tasks together as a team. As has been presented in other research, however, despite having what might be considered minimal groups, there might still be the establishment of injunctive and descriptive norms.

Furthermore, it was noted at the outset, that this research is limited to investigating whether the introduction of diversity into a group scenario will affect the *individual's* ethical decision making within the group context and not have the effect of diversity on the *group* decisions or actions.

6 Conclusions and recommendations

In conclusion, the results of the statistical analysis of the experiments lend support to the hypothesis that diverse groups cheat less than homogenous groups.

It appears that the manipulation of the composition of a group has an effect on the social context. This change can, in turn, affect the perceived norms to which individuals ascribe. There is a motivation of individuals within a group to conform to norms of their groups – however an individual's strength of association with the group is based strongly on his categorization of himself and others within the group – either as ingroup (homogenous) or as outgroup (diverse) members. Thus, it is evident that the categorization can affect the establishment of the norms. This research does not intend to suggest that different race or gender groups have different norms, but rather that all races/genders might view cheating in this low-stakes experiment, as not being such a seriously unethical action, and when amongst those like themselves – are comfortable to admit it to one another. When in the presence of a diverse group however, they would not want to admit that cheating doesn't seem highly unethical as they would want to present themselves as moral and upright individuals.

Finally, the desire to conform to those norms is also affected by the manipulation of the group composition as it appears to create either heightened public self-consciousness (in diverse groups) or deindividuation (in homogenous groups). When group members feel as if they are being observed by others, they are more likely to act in a manner which conforms

to injunctive social norms. When a member loses his/her sense of self through strong ingroup categorization, there actions are more closely linked to the descriptive norm which is based on taking cues from what others in the group might do.

While significantly more empirical evidence is required to confirm the findings, it can be argued that despite any mandated requirements for diversity within the structures of a board of directors, or even decision making teams within organizations, it appears that there will still be significant benefits associated with more ethical decision making as a result of achieving diversity.

6.1 Future research considerations

This study used diversity (in terms of both race and gender) as an absolute measure. In other words, to be a homogenous group, that group needed to consist of the same race and gender. Any other type of group was, therefore, considered to be diverse (although effort was made to get an even split between gender and race within the diverse groups). Of interest for future research will be the extent to which diversity affects the ethical decision making of the individual in the group. A similar set of experiments to those performed in this study could be conducted, however, the diverse groups could be assigned a score, based on how diverse they are. For example, a grouping of 5 white males and 1 black male would not be as diverse as a grouping of 2 black females, 1 white female, 2 black males and 1 white male.

Furthermore, the effect of diversity for males versus females could be assessed. Are the decisions of males affected more than those of females by introducing diversity?

While it has been shown in this study that diversity does have the effect of improving ethical decision making, it will be of interest to see whether, over time, the effect of the diversity decreases or remains as strong, particularly as familiarity amongst group members sets in. It would be of interest to determine, whether familiarity, irrespective of diversity or homogeneity within groups, creates the same effect on one's self-awareness.

The results of this research were inferred from the outputs of the assessment, statistically analysed across the various experimental conditions. What was not considered nor measured was what exactly changed the actions of those in the homogenous groups. Student interviews could be conducted after such experiments to ascertain whether students are even consciously aware of a change in their own behaviour.

All of these questions will provide further insight to group functioning in general, and even into board representation and how we can improve ethical decision making within the corporate environment.

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8 Appendices

8.1 Experimental Task - Mathematical Competency assessment:

Student Number: _____

Objective Number	Your answer
Objective 1	
Objective 2	
Objective 3	
Objective 4	
Objective 5	
Objective 6	
Objective 7	
Objective 8	
Objective 9	
Objective 10	
Objective 11	
Objective 12	
Objective 13	
Objective 14	
Objective 15	
Objective 16	
Objective 17	
Objective 18	
Objective 19	
Objective 20	

Mathematical competency assessment:

Please complete this assessment to the best of your ability.

Students who score in the top 50% of all marks will be included in a random draw for a prize of R500 Sandton City Gift Card/Cash Prize.

You have 5 minutes to complete as many of the questions as possible.

Each correctly answered question will receive a 1 out of a possible 20.

A calculator may not be used for this assessment.

Student number: _____

Questions:

Objective 1:

Write $^{1}/_{3}$ as a percent.

Objective 2:

Simplify $4(2)^{4}$

Objective 3:

Put in order from smallest to largest:
.09, $^{5}/_{8}$, - 36, -.65

Objective 4:

Simplify 3 + 5 (4 - 2)

Objective 5:

Suppose you are given the following rules:
a) Enter a number
b) Subtract 5
c) Multiply 4
d) Divide 3
e) Add 4

Try this with the number 9. Round your answer to the nearest tenths.

Objective 6:

Fill in the blank. **1, 0, 3, 0, ____, 0, 7**

Objective 7:

The restaurant bill for your family totals R75.00. You want to leave a tip of 15%. What is the amount of the tip?

Objective 8:

You borrowed R600 at 15% for one year. How much money will you have to pay back at the end of the year?

Objective 9:

Suppose a family has a total income of R3450 each month. If they spend 45% on housing, 10% on utility bills, 28% on car expenses, and the rest on food, how much money do they spend on food?

Objective 10:

Suppose you have a choice of buying eight pens for R1.35 each or a set of eight pens for R8.10. How much can you save by buying the eight pens as a set?

Objective 11:

Write an algebraic expression for the following:
13 more than the product of a number and 7

Objective 12:

If 3 times a number is increased by 12, the result is the same as twice the number increased by 24. Write the best equation to find the number.

Objective 13:

Simplify the expression

5x - 9y - 11x - y =

Objective 14:

If W = a (b + c) , find W when a = 12, b = 4
and c = 2.

Objective 15:

Solve for X in the following proportion: $\mathbf{17/_{34}=^{x}/_{12}}$.

Objective 16:

Solve for N when 3N + 5 = 32

Objective 17:

Suppose that you have two triangles which are similar. The large one has a height of 16 and a base of 8. What is the height of the smaller one if it has a base of 5?

Objective 18:

What is the formula for the volume of a cube?

Objective 19:

What is the formula for calculating the circumference of a circle?

Objective 20:

What is the probability of throwing an odd number on a die?

8.2 Instrument 2:

Name: _____

Questionnaire

1 With which religion below do you affiliate yourself?

A. Christianity

B. Judaism

C. Islam

D. Hindu

E. Atheist

F. Other

2 On a scale of 1 - 5, with 1 being the lowest and 5 being the highest, how observant are you of your religious beliefs?

1

2

3

4

3 Have you ever been overseas?

No

Yes

4 How old are you turning this year?

5 How do you manage to pay your university fees? Choose the item below which describes how you pay the majority of your fees.

A. I work to pay for my own studies

B. My parents pay for my studies

C. I receive financial aid from the University

D. I have funding from a 3rd party in the form of a bursary or scholarship