

**THE EFFECT OF RATIONAL CHOICE AND ANTI-INTELLECTUALISM  
ON STUDENTS' INTENTION TO CHEAT**

**Clarése Kühn (KHNCLA001)**

**Associate Professor Jeffrey Bagraim  
(Supervisor)**



A dissertation submitted in partial fulfilment of the requirements for the award of the  
Degree of Master of Social Science in Organisational Psychology

Faculty of Commerce

University of Cape Town

2011

**COMPULSORY DECLARATION:**

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, and has been cited and referenced.

Signature:  .....

Date: 15 December 2011.....

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

## **ACKNOWLEDGEMENTS**

To my supervisor, Associate Professor Jeffrey Bagraim, thank you for your support and guidance throughout this research process. I have gained valuable knowledge and insight as a result of your recommendations.

I would also like to thank all the universities for granting me permission to conduct the research at their respective institutions. This appreciation is extended to the students that took the time to complete the survey. Without their responses I would not have been able to complete my dissertation.

I would like to extend a special thank you to my family for their love, support and understanding during this demanding time.

## ABSTRACT

This study investigated the effect of rational choice and anti-intellectualism on undergraduate business students' ( $N = 485$ ) intention to cheat in their academic studies. A descriptive research design was used and data was collected by means of a self-administered, cross-sectional survey. Hierarchical multiple regression analysis showed that rational choice explains a significant proportion of the variance in cheating intention over and above that of anti-intellectualism. The regression analysis also showed a significant interaction effect between anti-intellectualism and benefits of cheating. Logistic regression was used to show the strong relationship between the rational choice dimensions and self-reported cheating behaviour. Recommendations and suggestions for future research are presented.

## TABLE OF CONTENTS

<b>ACKNOWLEDGEMENT</b> .....	<b>i</b>
<b>ABSTRACT</b> .....	<b>ii</b>
<b>LIST OF TABLES</b> .....	<b>vi</b>
<b>LIST OF FIGURES</b> .....	<b>vi</b>
<b>CHAPTER 1: INTRODUCTION</b> .....	<b>1</b>
<b>CHAPTER 2: LITERATURE REVIEW</b> .....	<b>4</b>
<b>Definition of cheating</b> .....	<b>4</b>
Students' perception of cheating .....	4
<b>Forms of cheating</b> .....	<b>5</b>
<b>Antecedents of cheating behaviour</b> .....	<b>6</b>
<b>Rational Choice Theory</b> .....	<b>12</b>
Rational choice and cheating .....	13
<i>Perceived benefits of cheating</i> .....	14
<i>Perceived cost of cheating</i> .....	14
<i>Practical implications of the cost-benefit calculation to deter cheating         behaviour</i> .....	17
Limitations of Rational Choice Theory .....	18
<b>Anti-intellectualism</b> .....	<b>18</b>
Anti-intellectualism amongst students .....	19
Anti-intellectualism and cheating .....	20
<b>Rational choice theory and anti-intellectualism</b> .....	<b>21</b>
<b>Research propositions</b> .....	<b>21</b>

<b>CHAPTER 3: METHOD .....</b>	<b>23</b>
<b>Research Design .....</b>	<b>23</b>
<b>Participants.....</b>	<b>23</b>
<b>Measures .....</b>	<b>24</b>
<b>Procedure.....</b>	<b>26</b>
<b>Statistical Analysis .....</b>	<b>27</b>
<b>CHAPTER 4: RESULTS .....</b>	<b>28</b>
<b>Exploratory Factor Analysis.....</b>	<b>28</b>
<b>Reliability Analysis .....</b>	<b>31</b>
<b>Descriptive Statistics .....</b>	<b>31</b>
<b>Correlation Analysis .....</b>	<b>33</b>
<b>Regression Analysis .....</b>	<b>34</b>
Hierarchical multiple regression .....	35
Interaction effect .....	36
Logistic regression.....	37
<b>Group differences.....</b>	<b>39</b>
<b>CHAPTER 5: DISCUSSION .....</b>	<b>40</b>
<b>Contributions of this Study .....</b>	<b>40</b>
Psychometric properties of the scales .....	42
Cheating intention and self-reported cheating behaviour .....	42
The relationship between cheating intention and anti-intellectualism.....	44
The relationship between cheating intention and rational choice .....	46
<b>Limitations of this study.....</b>	<b>47</b>
<b>Suggested future research .....</b>	<b>49</b>
<b>Conclusion .....</b>	<b>50</b>
<b>REFERENCES.....</b>	<b>51</b>

## LIST OF TABLES

<b>Table 1:</b> <i>Antecedents of cheating behaviour</i> .....	8
<b>Table 2:</b> <i>Research on cheating</i> .....	9
<b>Table 3:</b> <i>Factor analysis on the cheating intention scale</i> .....	28
<b>Table 4:</b> <i>Factor analysis on the anti-intellectualism scale</i> .....	29
<b>Table 5:</b> <i>Factor analysis on the rational choice scale</i> .....	30
<b>Table 6:</b> <i>Frequency of self-reported cheating behaviour</i> .....	32
<b>Table 7:</b> <i>Means, standard deviations, skewness, kurtosis, reliability, and inter-correlation among study variables</i> .....	34
<b>Table 8:</b> <i>Regression analysis of anti-intellectualism, benefits of cheating, cost of cheating and cheating intention</i> .....	34
<b>Table 9:</b> <i>Hierarchical Regression Summary for Dependent Variable: Cheating Intention</i> .....	35
<b>Table 10:</b> <i>Interaction effect between anti-intellectualism and benefits of cheating</i> .....	36
<b>Table 11:</b> <i>Logistic regression predicting the likelihood of copying in a test</i> .....	38
<b>Table 12:</b> <i>Logistic regression predicting the likelihood of copying in an exam</i> .....	38
<b>Table 13:</b> <i>Logistic regression predicting the likelihood of plagiarising an assignment</i> .....	39

## LIST OF FIGURES

<b>Figure 1:</b> <i>Interaction effect between benefits of cheating and anti-intellectualism</i> .....	37
--	----

## CHAPTER 1: INTRODUCTION

Cheating behaviour is a serious concern for all in higher education institutions (Michaels & Miethe, 1989) and it is a significant problem in South Africa (De Jager & Brown, 2010). Cheating behaviour among business students is of particular concern because it has been found to correlate with the propensity to commit unethical business practices in the future (Elias, 2009). Cheating behaviour at universities can only be curbed if one understands the underlying dimensions that lead to it and this study focuses on anti-intellectualism and rational choice as explanations for such behaviour.

Statistics regarding cheating in higher education institutions are alarming. While figures vary, this could be attributed to the wide range of cheating behaviours. Studies have reported students engaging in at least one form of cheating behaviour: 75% (Hutton, 2006), 80.9% (O'Rourke, Barnes, Deaton, Fulks, Ryan & Rettinger, 2010), 73% (Rettinger & Kramer, 2009), 85.7% (Michaels & Miethe, 1989) and 83% (Cochran, Chamlin, Wood & Sellers, 1999). The majority of these studies were conducted in America, but De Jager and Brown (2010) found that plagiarism in the South African context (specifically, the University of Cape Town) was also significant. Even with a high honour code and methods for detecting plagiarism, such as Turnitin, 72% of their respondents reported that they did not cite work from other authors that they had used. Cochran et al. (1999) indicated that 10% of respondents received a copy of the exam paper in advance by means of back channels, with 19% admitting to plagiarism in a term paper. In order to estimate the occurrence of cheating behaviour, one first needs to understand that it is a complex act and a reality in higher education settings.

Previous research not only investigated the incidences of cheating behaviour but also the likelihood of being exposed to a situation that could lead to cheating. Tibbetts and Myers (1999), for example, found that only one out of the 330 respondents reported never being exposed to a situation that could result in cheating. The incidences of



cheating are also increasing as students are finding more creative ways of cheating. Cheating is certainly a significant problem that warrants further investigation.

One might ask what is the harm in copying someone else's work? Why are we so concerned with understanding cheating behaviour in order to prevent it? Cheating behaviour amongst business students is particularly relevant, affecting more than merely the integrity of the grading system and the reputation of the educational institution (Ogilvie & Stewart, 2010). On an individual level, the student's understanding of the material to be studied is compromised, resulting in incomplete information for the workplace. Imagine prospective medical doctors cheating on their exams and later faced with a scenario in which they lack vital information: the consequences could be deadly. Further, cheating at university correlates with the propensity to commit unethical business practises in the future (Atmeh & Al-Khadash, 2008; Elias, 2009; Lucas & Friedrich, 2005; Sims, 1993). Employers should be attentive of these findings and they would to gain from research that investigates cheating behaviour at university level.

Sims (1993) reported that 91% of the respondents in his survey admitted to a form of cheating. From the same sample, 98% also reported engaging in illicit work behaviours. Deviant or counterproductive work behaviour (CWB) can include a variety of behaviour including, theft, fraud, property damage, absenteeism, hostility toward co-workers, undependability and even substance abuse (Lucas & Friedrich, 2005). Lucas and Friedrich (2005) found the strongest relationship between cheating and worker's compensation fraud. As with cheating for academic gain, employees are likely to engage in unethical business practices if they perceive the benefits to outweigh the cost. Hutton (2006) explained that if rule breaking leads to an increase in productivity there is a higher likelihood that cheating will occur. Hutton (2006) also reported that a strong relationship between unethical managers and employees played a significant role in establishing a shared understanding that could normalise unethical business practises.

Due to the relationship between cheating and unethical business practices, companies and academic institutes stand to benefit from understanding cheating behaviour in

order to curb it. This study attempts to understand cheating behaviour by exploring rational choice theory and anti-intellectualism

Rational choice theory is a cognitive model of human decision-making that assumes that individuals make decisions by weighing up the costs and benefits in any particular situation (Kronenberg, Hentze & Mehlkop, 2010; Ogilvie & Stewart, 2010). Research has reported that this cost benefits calculation is also used in students' decision to cheat (Michaels & Miethe, 1989; Tibbetts, 1997).

Anti-intellectualism refers to an individual's lack of respect for intellectual pursuits (Elias, 2009). There is no research on anti-intellectualism among young South Africans, but there is a widely held assumption that anti-intellectualism is prevalent in the country.

While the rational choice theory is an established method for explaining cheating behaviour (Cochran et al., 1999; Ogilvie & Stewart, 2010), no previous study has investigated whether it predicts cheating over and above a general attitude of anti-intellectualism.

The dissertation consists of five chapters. The first chapter provides an introduction to the research topic and it addresses the aim of the research. Chapter Two discusses a selection of available literature on cheating, rational choice theory and anti-intellectualism and introduces the propositions of the research. Chapter Three details the method used to investigate the research propositions. This chapter focuses on describing the research design, the sample group, the measuring scales, the process used to collect the data, and the data analysis techniques used, thus allowing the study to be replicated. Chapter Four presents the results of the statistical data analysis. Lastly, Chapter Five discusses the key results addressing the various propositions. In this chapter the South African findings are compared to those in the existing literature. Limitations and recommendations for future research are also discussed.

## CHAPTER 2: LITERATURE REVIEW

This chapter presents a review of the relevant literature found during an electronic search using PsychINFO, Academic Source Premier, and Google Scholar on cheating behaviour, forms of cheating, and antecedents of cheating, with specific focus on rational choice theory and anti-intellectualism.

### **Definitions of cheating**

A cheater, according to the *Oxford Dictionary of English* is, "... a person who behaves dishonestly in order to gain an advantage". One person's perception of what constitutes dishonest behaviour may differ from the next. In order to understand cheating in an academic context we should therefore understand what students perceive as dishonest behaviour.

### ***Students' perception of cheating***

Hutton (2006) found that 50% of surveyed students did not view cheating as wrong or unethical behaviour. The reason for this high percentage could be due to their perception of what constitutes cheating behaviour. Michaels and Miethe (1989) indicated that 67% of students viewed cheating on homework or laboratory work as "not at all" or "only slightly" wrong. So their argument was that if students clearly knew what is right and what it wrong, cheating behaviour should decrease. Semerci (2006) disagreed, stating that even if students labelled cheating as wrong it did not stop them for committing cheating behaviour. Raising awareness about cheating and the acceptance of generally-held definitions by the students will therefore not deter them from engaging in cheating behaviour.

## **Forms of cheating**

Cheating amongst students includes a variety of behaviours including, but not limited to, plagiarism, falsifying data and unauthorised collaboration (Ogilvie & Stewart, 2010). Cochran et al. (1999) investigated five forms of cheating: (1) lying to an instructor about missing an exam, (2) receiving an advance copy of an exam, (3) looking at another student's answers during an exam, (4) falsifying information for a term paper and (5) plagiarising a term paper. In their study, 83% of the respondents admitted to at least one act of these cheating behaviours.

Atmeh and Al-Khadash (2008) identified similar cheating forms but added three more: (1) allowing own coursework to be copied by another student, (2) taking an exam for someone else, or (3) having someone else take the exam for you. Given the complex nature of cheating behaviour, most studies only focus on a limited set of cheating behaviours.

Not all forms of cheating result in direct personal benefit: (1) allowing own coursework to be copied by another student, and (2) taking an exam for someone, for instance. Yet these forms of cheating will hold different to the parties involved. The outcomes of cheating to the recipient such as better grades, less time spent, while the benefits to the individual allowing the copy (and by definition also cheating) are not academic gain. This individual might be wishing to gain for social acceptance. The dynamics of society add to a culture of cheating, perceiving it as acceptable behaviour (Atmeh& Al-Khadash, 2008).

Certain forms of cheating behaviours occur more frequently than others. Michaels and Miethe (1989) found 78% of the sample cheated on homework or lab work, 41.9% reported cheating on exams, with only 22.9% cheating on term papers or projects. The disparity might be as a result of the environment, social norms or the perception held by the students. Michaels and Miethe (1989) speculate that the high percentage of students cheating on homework could be as a result of the perceived risk associated with this behaviour being low. In the case of tests, the way a test is constructed could make it easier to cheat, for instance, multiple choice questionnaires are generally

viewed as less risky to cheat on. Certain behaviours could be deemed more acceptable by the group than others and as a result would occur more frequently.

### **Antecedents of cheating behaviour**

Why do students cheat? The theory around social networking indicates that where there is a strong relationship among students in comparison to between students and the faculty and administration, cheating is more likely to occur (Hutton, 2006). Another factor influencing the growth in cheating is the fact that in the past students worked individually as opposed to in groups. By contrast, today's generation promotes the concept of group sharing and, with the boundaries being blurred, social acceptance becomes primary. Technology in the form of chat rooms, Facebook and Twitter is creating relationships that previously would not have existed. Hutton (2006) stated that the increase in social networks could result in rule breaking becoming normalised. Cheating could be normalised if a bigger proportion of the group perceives it as acceptable.

Institutions, unintentionally, have promoted this culture of group work by introducing projects that require group work as the basis of evaluating students (Hutton, 2006). Social networks are also related to students being unlikely to report fellow classmates who cheat (Hutton, 2006). Today's generation is influenced by strong peer dependence and the need to be accepted. Arhin (2009) found that the majority of the students in his sample did not perceive grading a fellow student's paper leniently as cheating.

Belonging to a club within the institution also increases the probability of cheating, and Hutton (2006) is of the opinion that this explains why cheating is lower among non-traditional students who spend less time on campus and with fewer connections to other students. Hutton completed the study in 2006; there might be an increase in the accessibility of social networks since then, but virtual groups are growing and increasing the probability of cheating even with non-traditional students.

If one observes other students cheating, it will increase the likelihood of cheating oneself as this fosters an environment that is tolerant of the behaviour (Rettinger & Kramer, 2009). O'Rourke et al. (2010) reported that 88.5% of the students had direct knowledge of others' cheating activities. They interpreted these results as suggesting that to see others cheat will have more influence over one's decision than will moral judgement. The argument holds that even if one views cheating as morally wrong, the dominant culture is one that favours cheating, thus making it justifiable for the individual to cheat. Michaels and Miethe (1989) suggested that cheating might be seen as normative behaviour due to the fact that non-cheaters were in the minority. Even though most of the students in their study viewed cheating as wrong, 40% reported that they would react in a neutral manner to their friends' cheating behaviour. This could be viewed as a passive approach to cheating, as one is neither opposed to or in favour of cheating. But by not reporting the cheating behaviour one is still contributing to the culture of cheating and by default also justifying the behaviour as acceptable.

One might argue that the students are unaware of other students' cheating behaviour. However, Rettinger and Kramer (2009) indicated that students overestimated the occurrences of cheating by others. This indicates that students view their peers as more likely to cheat, than not. Students are also more likely to know about the behaviour than to act on it. But as mentioned, seeing the behaviour makes it more acceptable and could increase the incidences of cheating, that is, creating a culture where it is acceptable and even, perhaps, sometimes expected to cheat.

The environment created by educators can also promote a culture of cheating. Evidence revealed that instructor vigilance reduces the occurrence of cheating (Hutton, 2006). The opposite result could be the case when the educator does not enforce sanctions or does not clearly communicate what these sanctions are. Another factor is the method of teaching: educators who do not promote critical thinking but merely cite the facts are unintentionally promoting a culture that minimises the value of intellectual gains. Cheating behaviour by the student will then be seen as less severe. On the other hand, cheating incidences might be fewer when an educator stimulates the class to think further and apply their minds.

There are many more theories attempting to explain cheating. Table 1 summarises the major antecedences of cheating behaviour.

**Table 1**

*Antecedents of cheating behaviour*

Theory	Description	Authors
Impulsivity	The tendency to act without considering the consequences of one's action.	Anderman, Cupp and Lane (2010)
Classroom goal structure	The decision to cheat is based on the students' perceptions regarding the goals that are important in their classroom.	Anderman et al. (2010); Tas and Tekkaya (2010)
Perceived teacher's credibility	Students are less likely to cheat if they perceive their teacher to be competent, trustworthy and caring.	Anderman et al. (2010)
Academic self-efficacy	Students with low academic self-efficacy have less confidence in their ability to perform in an academic setting and are more inclined to cheat to achieve results	Elias (2009); Tas and Tekkaya (2010)
Social bond theory	Cheating behaviour is the result of a weakening of the social bonds between students and society.	Michaels and Miethe (1989)
Religion	Religiosity leads to lower cheating rates.	Bloodgood, Turnley and Mudranck (2008); Rettinger and Jordan (2005)
Perceived social norm	Peer attitudes and behaviour influence the decision to cheat.	Jordan (2001); Semerci (2006)
Mastery and extrinsic motivation	Students who have a desire to master information are less likely to cheat than students motivated by extrinsic factors.	Jordan (2001); Rettinger and Jordan (2005)
Neutralisation	Neutralisation attitudes allow students to justify their behaviour that is contrary to their ethical code.	Davy, Kincaid, Smith and Trawick (2007); Rettinger and Kramer (2009)
Theory of planned behaviour	Behavioural achievement depends on the willingness to perform the behaviour (motivation) and the extent to which the person has the skill (ability).	Atmeh and Al-Khadash (2008); Chang (1998)
Anti-intellectualism	Students are more inclined to cheat if they hold a negative view on the value and importance of intellectual pursuits and critical thinking.	Elias (2009)
Rational choice theory	Individuals are motivated by self-interest and make decisions by calculating the cost and benefits of the situation.	Cochran et al., (1999); Hutton (2006); Ogilvie and Stewart (2010)

This literature review focuses on two antecedents of cheating behaviour, rational choice theory and anti-intellectualism. Table 2 is a summary of the key articles cited in this literature review on cheating.

**Table 2***Research on cheating*

Author and Title	Date and Place	Sample	Variables	Measures	Results
Cochran, J.K., Chamlin, M.B., Wood, P.B., & Sellers, C.S.	1999 USA	Non-random convenience sample of adult undergraduates enrolled in upper-division sociology classes.	DV: (1) lying to an instructor about missing an exam; (2) receiving an illicit, advance copy of an exam; (3) looking at another student's answers during an exam; (4) falsifying information; (5) plagiarising a term paper IV: (1) shame; (2) embarrassment; (3) formal sanctions CV: (1) level of moral disapproval of cheating; (2) socio-demographic detail, (3) GPA, (4) number of credit hours enrolled	Adapted measure from Grasmick and Bursick (1990) 4-point ordinal scale Moral condemnation = 4-item additive scale on 4-point Likert Scale	Shame significant indicator to deter cheating Formal sanctions do not deter cheating behaviour Moral condemnation = significant as reported lowest involvement in cheating behaviour
Elias, R.Z.	2008 USA	Business students in 3 AACSB-accredited universities	DV: perception of cheating IV: (1) cheating in class; (2) cheating outside class; (3) anti-intellectualism; (4) academic self-efficacy; (5) GPA CV: (1) gender, (2) age, (3) grade	Perception of cheating – Questionnaire by Allmon et al. (2000) (9 statement on 7-point scale) Anti-intellectualism – Eigengerber&Sealandar (2001) (25 statements, on 7-point scale) Academic self-efficacy – Chemers et al. (2001) (8 statements on 7-points scale)	Student with high levels of anti-intellectualism viewed cheating as less unethical
Kronenberg, C., Heintze, I., & Mehlkop, G.	2010 Germany	N = 3 500 Random selection (age 18 and older)	DV: willingness to commit particular offence in future (shoplifting and tax fraud) IV: (1) perceived benefits; (2) probability of success; (3) perceived severity of the penalty; (4) probability of detection; (5) normative attitudes	5-point Likert scales	Benefits of the act with possibility of success are not significant indicator Normative attitudes influence probability of acting



Michaels, J.W. & Miethe, T.D.	1989 USA	Undergraduate sociology classes at a large state university	DV: Academic cheating (exam cheating, paper cheating, homework cheating and future cheating) IV: the likelihood that (1) cheating would be detected, (2) detected cheating would be reported, (3) the accused students would be convicted by the honour court, and (4) the expected severity of the punishment, (5) rational choice, (6) social bond, (7) social learning CV: (1) Gender, (2) year in college, (3) extent to which the respondent had the opportunity to cheat without being detected, (4) sum motivations/pressure	Exam cheating, paper cheating, homework cheating = 4-point scale Future cheating = 6-point scale Probability measures = 6-point scale Expected severity = 5-point scale Rational choice = 7 point-scale Social bond = 5-point scale Social learning = composite scale	Motivation/pressures = responds to cheating behaviour Rational choice = perceived ratios and gains correlates with decision to cheat
Ogilvie, J.O., & Stewart, A.	2010 Australia	N = 536. Undergraduate university students non- randomly recruited across all academic disciplines	DV: probability to engage in plagiarism IV: (1) Academic self-efficacy; (2) perceived sanctions; (3) perceived benefits, (4) perceived shame, (5) prior behaviour; (6) demographics	4 Scenario design - randomly allocated to participants. (1)High certainty, high severity, (2) high certainty, low severity, (3) low certainty, high severity (4) low certainty, low severity Measure with 11-point scale Academic self-efficacy – ASES Perceived sanctions – Nagin& Paternoster (1993) index Perceived benefits – 10 point scale Perceived shame – binary indicator Prior behaviour – 18 questions, 7 point scale	Certainty of detection = not deter student's intention to cheat Benefits and shame = significant effect on intention to cheat Low academic self-efficacy = higher probability to cheat

Tibbetts, S.G.	1997 USA	N = 330 Undergraduates enrolled in 6 introductory behavioural science courses	DV: cheating intent IV: (1) perception of external sanctions; (2) experience of being formally detected while cheating in the past 5 years; (3) anticipated shame state; (4) perceived pleasure; (5) moral beliefs; (6) level of self-control. CV: (1) year in school; (2) GPA, (3) friend's cheating behaviour; (4) past test-cheating behaviour	Composite index. (1) being caught by the instructor; (2) detection by peers even if not detected by the instructor; (3) dismissal from the university; (4) diminished job prospects in the future. Response varied on an 11-point scale. Low self-control was measured on a 24-item scale (by Grasmick et al., 1993) on a 5-point Likert scale.	Mean scores of 5 variables differed by gender with anticipated shame explaining most of the difference in cheating intent between men and women. Hypothesis was supported that the variable effects differed significantly by gender.
Tibbetts, S.G. & Myers, D.L.	1999 USA	N = 330 (same sample as the 1997 article)	Same as above	Same as above	Cheating intent was positively affected by perceived pleasure, gender, past year cheating, friends' cheating, cheating in high school. Cheating intent was inhibited by moral beliefs, anticipated shame

Notes. N = size of the sample; DV = dependent variable; IV = independent variable; CV = control variable

## **Rational choice theory**

Rational choice theory is a cognitive model of human decision-making that assumes that individuals act in an outcome-orientated way (Kronenberg et al., 2010; Ogilvie & Stewart, 2010). It assumes that outcomes are the results effected by individuals (referred to as actors) when faced with two alternatives (Quackenbush, 2004). The actor will choose the alternative that will yield the best result. With rational choice, there is a system of preferences and the individual possesses certain skills to calculate which alternative will yield the highest return (Simon, 1955). The question that might come to mind is, how do we calculate which alternatives to choose? Simon (1955) stated that human beings examine these alternatives sequentially. Although not much is known about the process individuals follow to place the alternatives in order, the first satisfactory alternative is normally the one selected.

There are three approaches to rational choice; (1) non-formal theory, (2) expected-utility theory, and (3) game theory (Quackenbush, 2004, Simon 1955). Models of rational behaviour require some or all of the following elements (Simon, 1955, p 102):

1. A set of behavioural alternatives.
2. The separation of the behaviour alternatives that the individual will consider (there may be more alternatives available than the ones perceived by the individual).
3. The possible outcomes of choice.
4. The value placed by the individual on each of the possible outcomes of choice.
5. Information as to which outcome in the future will actually occur if a particular alternative is chosen.
6. Information as to the probability that a particular outcome will happen as a result of the chosen alternative.

Rational choice theory is rooted in the assumption of instrumental rationality, a concept that is concerned with action and taking direction (Ellis, 2008): in a word,

people act to satisfy their needs. Quackenbush (2004, p. 95) stated that actors should have a "...connected and transitive preference". This indicates that instrumental rationality makes no normative judgement about preferences, but is rather concerned between the desire and action. This implies that whether one's preferences are moral or not, this has no impact on one's instrumental rationality. Actors will perform certain behaviours if their expected utility exceeds their expected cost (Kronenberg et al., 2010). Instrumental rationality does not infer judgement as to whether actions are either right or wrong. Rather, it is a calculated way of making a decision, by considering all available options and choosing the best one (Quackenbush, 2004).

The context in which the action occurs is important, as the same action can lead to a different outcome should the situation in which the action occurs change (Ellis, 2008). It is therefore not enough to only view the alternatives and the associated cost and benefits.

### ***Rational choice and cheating***

Quackenbush (2004) argued that rational choice can be applied to virtually any social situation, specifically to explain various forms of deviant behaviours. These behaviours include (but are not limited to) income-tax evasion, sexual assault, domestic violence, theft and white collar crime (Tibbetts, 1997).

Tibbetts (1997) showed that the students' decisions to cheat were determined by weighing up the cost and benefits, with 25% of surveyed students reporting that the benefits of cheating outweighed the risks (Michaels & Miethe, 1989). Hutton (2006) encouraged the need for further research on this topic, especially on the calculation of the risk-benefit of cheating.

In rational choice theory decisions are made by weighing up the benefits and the cost but the influence of social actions in this cost-benefit calculation is also important (Kronenberg et al., 2010). Some of the benefits and costs are self-explanatory, others require further elaboration.

### *Perceived benefits of cheating*

Cheating is performed to obtain gains such as increased marks, less time spent completing academic tasks, avoiding work, and reducing stress (Hutton, 2006; Ogilvie & Stewart, 2010). Whitley (1998) argued that the need for approval is another benefit to consider. Tibbetts and Myers (1999) found perceived pleasures as a strong motivator to engage in illicit behaviour. Hutton (2006) reported laziness as 32% of students' primary reason for cheating, while 29% cheated to achieve higher grades and 12% due to the pressure to succeed. From the above one can see that there are different benefits for different individuals, depending also on varying situations.

Rational choice theory proposes that the individual's decision to cheat will be determined by the perceived benefits outweighing the risks. The results from the Michaels and Miethe's study (1989) is interesting, in that 60% of students reported that the gains of cheating on homework outweighed the risk, with only 27% reporting the risk beating the gains. Students' perception of cheating is thus skewed in favour of their believing that they have far more to gain than to lose.

### *Perceived costs of cheating*

The cost or risk associated with cheating will also differ depending on the situation and action. Since cheating is viewed as a form of misconduct, getting caught will also lead to certain levels of sanctions. Punishment for misconduct can be formal (such as arrest) and informal (such as social disapproval) as Wright, Caspi, Moffiti and Paternoster (2004) explained.

When will a student perceive the cost of cheating to be more than the benefits? The costs involved are the enforcement of sanctions, the severity of punishment, and degree of certainty surrounding the punishment (Hutton, 2006). Ogilvie and Stewart (2010) again found no significant effects on intention to engage in plagiarism and the certainty and severity of sanctions i.e. the cost associated with cheating. They mentioned that this could be due to the levels of severity not being clearly communicated to the participants. A sanction will carry no weight if it is severe but

there is no likelihood of being carried out. The individual will perceive the risks as low and will therefore be more inclined to cheat. It is important to note that the cost will be influenced by environmental factors such as the influence of instructors and administrative policies, and not necessarily by the student's individual characteristics (Ogilvie & Stewart, 2010).

In addition to the formal sanctions highlighted above, Cochran et al. (1999) mentioned that it is not only the enforcement of punishment but also the increase in socially imposed sanctions, which are designed to cause shame and embarrassment, that will decrease the incidence of cheating. Socially imposed sanctions can be viewed as forms of informal sanctions. Cochran et al. (1999) examined the certainty of the imposition of three forms of punishments (or cost) for cheating, namely, shame, embarrassment and formal sanctions. In Cochran's study the individual's own sense of shame associated with cheating was the only significant sanction to decrease cheating behaviour. Shame associated with cheating is a self-imposed sanction that is formed by the individual's values and beliefs gained through socialisations, that is, through effective parenting and practices within society. The conclusion one reaches is that informal sanctions have a stronger influence on the student's final decision as to whether or not to cheat than do formal sanctions.

It is critical that research understands the crucial role played by these informal sanctions as a means of curbing cheating. Most studies found that peers play an important role in creating socially accepted norms; if the majority of the group does not view cheating as unethical behaviour, it will be deemed as acceptable behaviour which will lead to an increase in incidences of cheating (Tibbetts & Myers, 1999). Tibbetts and Myers (1999) found that cheating behaviour was inhibited with higher levels of moral beliefs and anticipated shame. One of the explanations for this could lie in the nature of the sample group. Cochran et al. (1999) explained that informal sanctions have a greater deterrent effect on adolescents than on adults. Adolescents are more prone to peer pressure and the need for social acceptance; this could explain why informal sanctions have a higher degree of influence on them. Further research is necessary to investigate the influence of informal sanctions on adults.

According to rational choice theory, actors are less likely to engage in illicit behaviour when punishment is highly likely. Most students get away with cheating and this in return creates poor perceptions amongst students about the risks of cheating. Most research on rational choice and misconduct therefore focusses not only on the severity of the punishment (the cost) but on the certainty that the punishment will indeed be reinforced. Cochran et al. (1999) found the respondents reported low mean levels of perceived certainty of formal sanctions. Hutton (2006) explained that students justify cheating as being acceptable if they constantly get away with it. According to Ralph Wexler (cited in Hutton, 2006), vice-president of the non-profit Joseph and Edna Johnson Institute of Ethics, less than 2% of cheaters are ever caught. An individual will be more inclined to cheat if the risk for detection is believed to be minimal (Whitley, 1998). The perception is formed that it is acceptable to cheat, since nothing is being done about it.

The above research makes the assumption that if the sanctions are enforced and if they are severe enough, students will think twice before cheating. Ogilvie and Stewart (2010) confirmed this, as they found that students with a higher awareness of the sanctions (risks) reported lower probability of engaging in cheating behaviour. Students who perceived higher benefits were more likely to cheat. .

The sanction in itself will not deter students from cheating; it is students' perception of the costs and benefits associated with the action that will lead to cheating behaviour. These perceptions are subjective; they are based on the individual's past experiences, peer norms and need for social acceptance. This is supported by Tibbetts' (1997) research that showed that students are often not affected by formal sanctions. In some cases it could be the perceived formal sanctions in combination with the informal sanctions that will curb cheating.

It is not enough to have sanctions in place to deter cheating behaviour. Students will continue to cheat if they believe the chances of being caught are minimal. They may believe that even if they do get caught the sanction will not be enforced or the severity of the sanction will be minimal, making the benefits of cheating more attractive.

Furthermore, even if formal sanctions are severe and certain, cheating will continue if the student can justify the behaviour with acceptable social norms.

### *Practical implications of the cost-benefit calculation to deter cheating behaviour*

Different methods are used to discourage cheating behaviour. As listed by Atmeh and Al-Khadash (2008), these methods include sanctions, threats, classroom surveillance, multiple exam versions, avoiding the use of multiple-choice questions, encouraging students to report surveillance of cheating, distributing different forms of the same test, assigning seats to students, and asking students to remove all books and personal belongings before the test starts. The last method is of more importance lately due to technological advances; the devices are becoming smaller, with easier and faster utility. These methods might assist in preventing or minimise cheating, but as previously mentioned informal sanctions play a more dominant role in the students' decision to cheat.

Formal sanctions alone, as mentioned above, do not deter cheating behaviour. Tibbetts and Myers, 1999 found that perceived external sanctions and being caught cheating in the past did not limit the decision to cheat. These perceptions could, in turn, be substantiated by the degree of certainty of being caught. Of the 39% of the respondents that reported cheating, only 4% reported being caught cheating in the past (Tibbetts& Myers, 1999).

Honour codes can reduce cheating but only if there is an increase in detection and reporting, that is, certainty of the imposition of the sanction (Hutton, 2006). Increasing enforcement and the probability of being caught limit the benefits and increase the costs. Cochran et al. (1999) found no effects of threats of formal sanction in deterring illicit behaviour, but that it a formal sanction will nevertheless be instrumental in the rational decision making process. Michaels and Miethe (1989) found that such anti-cheating strategies had little influence on deterring cheating behaviour. Tibbetts and Myers (1999) stated that formal sanctions do not inhibit the decision to cheat, but that this is the effect of the internal and informal sanctions.



### ***Limitations of Rational Choice Theory***

Simon (1955) referred to three common limitations to rational choice theory: (1) the set of alternatives open to choice, (2) the relationship that determines the pay-off as a function of the alternative that is chosen, and (3) the preference-ordering among pay-offs.

The alternatives one can choose from will be different in every situation and the alternatives will also differ among individuals faced with the same situation. Furthermore, the individual might not be able to control all the alternatives available in the given situation due to available resources and skills. Little is known about the ordering process of the alternatives available in a given situation, and further research is required in order to understand the dynamics involved. For certain individuals cheating will not form part of the set of alternatives to choose from (Kronenberg et al. 2010). Research needs to consider other influences such as norms and attitudes over and above the cost-benefit calculation.

A further criticism of rational choice theory is that real decision-makers are not rational (Quackenbush, 2004). They are in fact influenced by the institution, peer-groups, cultural influences and other psychological limitations. Sullivan (2006) argued that one cannot generate hypotheses about actions taken simply on the basis of being rational without investigating the beliefs and desires held by the individual. The costs and benefits of a situation can be determined and influenced by the groups one associates with (Balough & Girvan, 2010).

### **Anti-intellectualism**

Hofstadter (1963) was the first to discuss anti-intellectualism, which refers to an individual's negative view of the value and importance of intellectual pursuits and critical thinking (Elias, 2009). It also refers to hostile attitudes towards those not opposed to critical thinking (Laverghetta & Nash, 2010). Simply put, people with high anti-intellectual attitudes are concerned with practical ways of doing rather than learning.

A major component of anti-intellectualism is that it views intellectual practice as elitist (Rigney, 1991). Laverghetta and Nash (2010) note hostility towards intellectual pursuits. As mentioned, the younger generation of today places emphasis on shared goals and group-sharing. This could explain why there is an increase in anti-intellectual attitudes. One would rather be seen as belonging to a group than being labelled an outsider.

In his book *Anti-Intellectualism in American Life*, which was published in 1963, Hofstadter argued that anti-intellectualism is a pattern embedded in American cultural history and that it will endure. This view is also supported by Rigney (1991). It appears then that anti-intellectualism is effected by the group culture. There is no research on anti-intellectualism in South Africa and little research outside of the United States of America.

### ***Anti-intellectualism amongst students***

Thus far, anti-intellectualism has been explained in terms of the general environment. The study focuses on anti-intellectualism as a predictor of cheating behaviour amongst students. What are the characteristics of students that are regarded as having anti-intellectual attitudes? Anti-intellectual students prefer study material that they can recite, as opposed to work that requires understanding. Academic study is considered to be a means to an end, such as obtaining a degree to eventually get a job that in the end will lead to a better lifestyle. Students with high anti-intellectualism display a lack of interest in classroom discussions, debates, critical thinking and institutions of higher education (Elias, 2009). Higher education may have an instrumental purpose for the anti-intellectual student but the students have no respect for higher education per se (Elias, 2009).

Laverghetta and Nash (2010) found that students' level of anti-intellectualism differed depending on their major subject. Students enrolled in more practically orientated majors (for instance, business administration) scored higher on anti-intellectualism than theory driven majors (for example, psychology). This is in line with anti-

intellectuals' favouring of practical outcomes above learning. Future studies should investigate whether the same results will be achieved consistently. This could have implications for the future of a specific industry.

With the increased production of technological devices, entertainment has become available more regularly and is frequently relatively free of cost, so minimising the need for critical thinking. People with a high level of anti-intellectualism also believe that practical knowledge is superior to theory (Laverghetta & Nash, 2010). Further, much that formerly involved some effort is now available at the touch of a button. In the past one had to go to the library, ask for assistance, or explore by means of experimentation. Search engines have replaced the need for exploration, as information is available in less than five seconds. Instant gratification has for many become the norm. May (1955) states that anti-intellectualism will remain in society due to the disintegration of and changes in our society.

### ***Anti-intellectualism and cheating***

There is currently limited research available on the relationship between anti-intellectualism and cheating amongst students. Elias (2009) investigated this relationship to explain the intention to cheat. The study was conducted with a sample of students from three universities, with the students scoring average on their anti-intellectualism. On face value this might seem acceptable. However, Elias (2009) argued that these results are worrying as the assumption would be that people entering higher education would have an interest in learning and mastering concepts, compared to the general population. Yet the sample scored average in their level of anti-intellectual attitudes, implying that even in an institution that promotes critical thinking, a large part of the population favours uncritical learning. Even more worrying is the fact that these students might have a total disrespect for intellectual pursuits and are using the system as a means to an end.

Elias (2009) found that students with high anti-intellectual attitudes perceived cheating as less unethical than student with low anti-intellectual attitudes. These

students merely wanted a qualification as a means to a job and did not view the cheating behaviour as wrong. This way of thinking could be viewed as consistent with the need for instant gratification. As mentioned, there is limited research and literature on the relationship of anti-intellectualism and cheating behaviour. The current research identifies this gap and anticipates contributing the findings to get a better understanding on the relationship between anti-intellectualism and cheating.

### **Rational choice theory and anti-intellectualism**

An electronic search using PsychINFO, Academic Source Premier, and Google Scholar every month between February and November 2011 yielded no results for published research that included rational choice theory and anti-intellectualism in a single study. It is therefore reasonable to assert that this study is the first examination of the combined effects of both rational choice theory and anti-intellectualism on cheating intention. There is a great deal of literature on rational choice theory and its effect on cheating intention but none of these studies have controlled for anti-intellectualism.

### **Research propositions**

Proposition 1. Anti-intellectualism correlates positively with cheating intention

Proposition 2. Anti-intellectualism helps explain significant variance in cheating intention

Proposition 3. Rational Choice theory helps explain significant variance in academic cheating intention

Proposition 4. Perceived costs of cheating correlate negatively with academic cheating intention

Proposition 5. Perceived benefits of cheatings correlates positively with academic cheating intention

Proposition 6. Rational choice theory explains significant variance in cheating intention over and above that explained by anti-intellectualism

## CHAPTER 3: METHOD

This research examined the relationship between cheating intention, anti-intellectualism and rational choice. This chapter is divided into five sections, explaining the research design, participants, measures, procedure and statistical analysis techniques used.

### **Research design**

A descriptive research design was used to explore rational choice and anti-intellectualism as explanations of cheating behaviour. A self-administered, cross-sectional survey method was viewed as the best approach to obtain data.

### **Participants**

Participants were undergraduate commerce students between the ages of 17 to 49. Of the 589 students that opted to take part in the survey only 485 (82.34%) students completed the questionnaire. There was a fairly equal representation of gender in the sample with 260 (53.60%) men and 225 (46.60%) women. Participants ranged from students in their 1<sup>st</sup> year through to students in their 6<sup>th</sup> year of studies (median year of studies = 3<sup>rd</sup> year). It was not possible to report on the response rate of the survey since the identities of the three universities partaking in the study were not revealed in the responses.

The external validity of the study was increased by inviting students from three universities located in the Western Cape to participate in the survey. Since cheating at university has been found to be a predictor of unethical business practices (Elias, 2009), this study only focused on business students.

## Measures

*Intention to cheat.* Intention to cheat was measured by using an existing questionnaire used by Anitsal, Antisal and Elmore (2009) to measure the participants' self-report on their intention to cheat in the future. Participants had to indicate on a five-point scale ranging from "very unlikely" (code 1) to "very likely" (code 5) the chances of them engaging in cheating behaviour in the future. The scale consisted of four questions such as: "How likely are you to consider turning in another's work done as your own" and "How likely are you to consider copying from someone else during a test".

*Anti-intellectualism.* Anti-intellectual attitudes were measured using a modified scale developed by Eigenberger and Sealander (2001). The original scale consisted of 25 statements, for this study it was reduced to 10 statements. The participants were asked to what extent they agree with statements such as "problems require direct answers" and "I am in a hurry to get my university degree over with". Responses were recorded on a seven-point scale ranging from 1 (strongly agree) to 7 (strongly disagree). Higher scores indicate higher anti-intellectual attitudes.

*Rational choice.* Rational choice was measured by looking at two components, (1) predicted decision to cheat in situations when the benefits outweigh the cost, and (2) the perceived cost associated with cheating specifically the certainty of shame, embarrassment and formal sanction. Rational choice was measured against five different scenarios of cheating i.e. (1) lying to a lecturer about missing an exam, (2) receiving an illicit, advance copy of an exam, (3) looking at another student's answers during an exam, (4) falsifying information in an assignment, and (5) plagiarising an assignment.

*Predicted decision to cheat in situations when the benefits outweigh the cost.* The scale from Passow, Mayhew, Finelli, Harding and Carpenter (2006) was replicated to

measure predicted decision to cheating in situation when the benefits outweigh the cost. The participants were asked to indicate to which degree they approved of cheating if it (1) helped them retain financial assistance, (2) avoided them letting their family down, (3) avoided poor or failing grades, (4) if it seemed that everyone else was cheating, and (5) if there was no way to get caught. Responses ranged on a five-point scale from “strongly disagree” (code 1) to “strongly agree” (code 5).

*Perceive cost (shame, embarrassment and formal sanctions) when involved in academic cheating.* Participants were asked questions pertaining to five different forms of cheating (as per Cochran et al.,1999): (1) lying to an instructor about missing an exam, (2) receiving an illicit, advance copy of an exam, (3) looking at another student’s answers during an exam, (4) falsifying information for a term paper, and (5) plagiarising a term paper. Participants were asked to indicate the chances of (1) getting caught, (2) getting punished if caught, (3) feeling ashamed of self if caught and (4) losing the respect of people if caught cheating in the above cheating situations. Responses ranged on a seven-point scale from “no chance” (code 1) to “certain” (code 7).

*Self-reported cheating behaviour.* Questions from the study by O’Rourke et al. (2010) were adapted for this study to obtain data on past cheating behaviours. Participants had to answer “yes” or “no” to a set of questions relating to past behaviour. “I copied from someone during an exam”, “I copied from someone during a test”, and “I turned in an assignment or hand-in tutorial written by someone else” are examples of the questions asked in the survey.

*Demographic data.* Demographic data i.e. age (actual age), gender (1=male: 2=female), academic performance and current residence were also collected to serve as control variables in an attempt to account for any internal differences between the respondents.



## **Procedure**

Ethical clearance was obtained from all three universities' Research Ethics Committees before the commencement of the research. A link to the survey was posted on one of the universities' intranet. For the other two universities the faculties sent an email with the link to the commerce students' email addresses. Students willing to participate had to follow the link that took them to a secure and anonymous site to complete the survey. The survey took approximately twenty-five to thirty minutes to complete.

All IP-addresses were stripped prior to receiving the data, thus guaranteeing anonymity to the respondents. The participating universities were also guaranteed anonymity in that responses could not be trailed back to a specific university. The aim of this study was to explore the levels of anti-intellectualism and the students' decision to cheat based on the perceived cost and benefits across different universities and not to explore differences between universities.

One of the limitations of self-report data are low response rates as identified by Ogilvie and Stewart (2010). To increase the response rate the participants that completed the survey were given a new, unrelated link to enter a lucky draw. Participants chose their own username to enter into the lucky draw. In no way could the lucky draw usernames be linked to the survey responses, guaranteed further anonymity to the respondents.

The questionnaire was voluntary to counter the tendency of respondents to answer dishonestly or in a manner that is deemed as socially desirable (Kronenberg et al., 2010). A further attempt to reduce the bias caused by socially desirable answers was to assure the participants that there would be no way to identify them.

It was compulsory to answer some of the questions in the survey to prevent participants' from not answering important questions. Some participants however did not complete the survey and this could either be due to the length of the questionnaire or because they did not want to answer certain questions. Of the students that took part in the survey, 17.66% student (N=104) opted to exit early. Ogilvie and Stewart

(2010) mentioned that it would have been interesting to measure the differences in their study between those that completed the survey and those that opted out.

### **Statistical analysis**

Statistica (version 10) was used to reduce and analyse the data to obtain reliable findings (StatSoft, Inc., 2011). Factor and reliability analysis were conducted to assess the psychometric properties of the scales. Thereafter the results were statistically analysed using descriptive statistics, correlation analysis, multiple regression analysis (hierarchical and logistic) and t-tests (for differences between groups). The findings are recorded in the following chapter.

## CHAPTER 4: RESULTS

This chapter reports the findings in six sections based on the statistical analysis performed.

### Exploratory Factor Analysis

Exploratory factor analysis was used to identify the underlying latent variables of three scales; *cheating intention*, *anti-intellectualism* and *rational choice*. Principal axis factor analysis was conducted and the items for *rational choice* were rotated with varimax normalised rotation. Factor analysis for the scales *cheating intention* and *anti-intellectualism* were unrotated. Factor loadings can vary from +1.0 to -1.0 and factor loadings of .30 or higher are considered acceptable (Hair, Babin, Money & Samouel, 2003).

*Cheating intention*. Extraction using principal-axis factoring with factor loadings yielded one factor with an Eigenvalue greater than 1.00. Factor 1 had loadings ranging from .53 to .68 with an Eigenvalue of 1.50, accounting for 37.54% of the total variance (refer to table 3).

**Table 3**

*Factor analysis of the cheating intention scale*

	<u>Cheating Intention</u>
1. Likelihood to consider turning in another's work done as own	<b>-.63</b>
2. Likelihood to consider copying from someone else during a test	<b>-.68</b>
3. Likelihood to consider using unapproved materials	<b>-.61</b>
4. Likelihood to consider plagiarising to complete an assignment	<b>-.53</b>
Eigenvalues	1.50
% of variance	37.54

Note. N= 483 (after casewise deletion of missing data).

*Anti-intellectualism.* Extraction using principal-axis factoring with factor loadings yielded one factor with an Eigenvalue greater than 1.00. Factor 1 had loadings ranging from .33 to .78 with an Eigenvalue of 2.83, accounting for 28.3% of the total variance. Table 4 illustrates the factor loading onto one factor.

**Table 4**  
*Factor analysis of the anti-intellectualism scale*

	Anti-intellectualism
1. Don't like taking courses at university	-.33
2. Don't enjoy researching new topic	-.48
3. Waste of time to study Philosophy	-.69
4. Learning should be career focussed	-.46
5. Some professors are too intellectual	-.44
6. Problems require direct answers	-.38
7. Reduce required social science courses	-.64
8. Prefer classes without critical thinking	-.51
9. Not interested in philosophical issues	-.78
10. In a hurry to get degree	-.45
Eigenvalues	2.83
% of variance	28.3%

Note. N= 483 (after casewise deletion of missing data)

*Rational Choice.* Extraction using principal-axis factoring with varimax rotation showed five significant factors with Eigenvalues greater than 1.0, accounting for 31.04%, 12.72%, 9.62%, 5.51% and 4.17% of the total variance. Collectively these factors explained 63.6% of the total variance. Table 5 represents the factor loading onto five factors. The item intended to measure *embarrassment* if caught cheating loaded highest on Factor 1 (factor loadings ranged from .74 to .87). The item intended to measure *Benefits of cheating* loaded highest onto Factor 2 (factor loadings ranged from .68 to .85). The item intended to measure *cost of being caught cheating* (formal sanction) loaded highest on Factor 3 (factor loadings ranged from .42 to .79). The item intended to measure *Shame* associated with being caught if cheating loaded highest on Factor 4 (factor loadings ranged from .73 to .77) and the item intended to

measure *being punished if caught cheating* (formal sanction) loaded highest on Factor 5 (factor loadings ranged from .59 to .77).

**Table 5**  
*Factor analysis of the rational choice scale*

	Embarrassment	Benefits of Cheating	Caught Cheating	Shame	Punished if caught
1. Cheat to retain financial assistance	-.12	<b>-.78</b>	-.02	-.02	-.02
2. Cheat to avoid family disappointment	-.05	<b>-.85</b>	.02	-.03	.02
3. Cheat to avoid failing grade	-.08	<b>-.85</b>	.02	-.10	-.01
4. Cheat if everyone else did it	-.04	<b>-.68</b>	-.03	-.11	-.03
5. Cheat if no chance of being caught	-.02	<b>-.78</b>	.01	-.13	-.03
6. Caught lying to a lecturer	-.01	-.05	<b>.42</b>	.09	.20
7. Caught receiving an advance copy of exam	.02	.05	<b>.48</b>	.11	.12
8. Caught looking at another student's answers	.05	-.00	<b>.68</b>	.04	.18
9. Caught falsifying information in an assignment	.13	.01	<b>.79</b>	.03	.12
10. Caught plagiarising an assignment	.05	.00	<b>.77</b>	.10	.18
11. Punished lying to a lecturer	.16	-.02	.18	.17	<b>.59</b>
12. Punished receiving an advance copy of exam	.05	-.02	.14	.23	<b>.68</b>
13. Punished looking at another student's answers	.11	.06	.25	.18	<b>.77</b>
14. Punished falsifying information in an assignment	.19	.04	.22	.15	<b>.74</b>
15. Punished plagiarising an assignment	.11	.04	.27	.18	<b>.71</b>
16. Ashamed lying to a lecturer	.28	.09	.12	<b>.73</b>	.19
17. Ashamed receiving an advance copy of exam	.21	.12	.12	<b>.74</b>	.25
18. Ashamed looking at another student's answers	.29	.11	.10	<b>.76</b>	.26
19. Ashamed falsifying information in an assignment	.37	.09	.12	<b>.74</b>	.20
20. Ashamed plagiarising an assignment	.30	.16	.13	<b>.77</b>	.22
21. Lose respect lying to a lecturer	<b>.80</b>	.07	.07	.21	.12
22. Lose respect receiving an advance copy of exam	<b>.74</b>	.09	.04	.27	.15
23. Lose respect looking at another student's answers	<b>.81</b>	.07	.05	.27	.13
24. Lose respect falsifying information in an assignment	<b>.87</b>	.04	.07	.20	.11
25. Lose respect plagiarising an assignment	<b>.84</b>	.11	.07	.22	.11
Eigenvalues	7.76	3.18	2.40	1.38	1.04
Individual total variance (percent)	31.04%	12.72%	9.62%	5.51%	4.17%
Cumulative total variance (percent)	31.04%	43.76%	53.38%	58.89%	63.06%

Note. N = 488 (after casewise deletion of missing data) Principal factor analysis with varimax normalised data; each item's significant loadings are presented in bold

## Reliability Analysis

Reliability analysis of the scales was assessed using Cronbach's coefficient alpha (refer to table 6); *anti-intellectualism* ( $\alpha = .78$ ; mean inter-item correlation  $r = .27$ ), *benefits of cheating* ( $\alpha = .89$ ; mean inter-item correlation  $r = .64$ ), *formal sanctions* ( $\alpha = .85$ ; mean inter-item correlation  $r = .38$ ), *shame* ( $\alpha = .92$ ; mean inter-item correlation  $r = .70$ ), *embarrassment* ( $\alpha = .93$ ; mean inter-item correlation  $r = .74$ ), and *cheating intention* ( $\alpha = .70$ ; mean inter-item correlation  $r = .37$ ).

All scales had alpha coefficients of .70 and above and were found to have high internal consistency as alpha values greater than .70 are considered to be acceptable (Hair et al., 2003). This indicated adequate internal consistency amongst the items in each scale.

## Descriptive Statistics

Descriptive statistics were conducted for all the summary variables. The mean, standard deviation, skewness and kurtosis of the variables are reported in Table 7.

The mean measures the central tendency of the sample and the standard deviation describes the level of dispersion in the responses (Hair et al., 2003). The shape of the distribution was also explored by means of the skewness and kurtosis. According to Hair et al. (2003) a skewness value larger than +1 or smaller than -1 indicates a substantially skewed distribution. Kurtosis measures the peakedness of the distribution and for a desired distribution the curve should not exceed +3 or be as flat as -3 (Hair et al., 2003). *Age*, *cheating intention* and *shame* in this sample is thus skewed and the distribution of *age* is peaked. All the other variables displayed an acceptable distribution.

The mean response on *cheating intention* was 1.64 on a 5-point Likert Scale ( $N = 426$ ,  $SD = 0.66$ ), with the median response of 1.50. Out of all the participants 48.90% indicated that it is "very unlikely" or "unlikely" for them to engage in cheating behaviour. Only 3 participants (less than 1% of the participants) reported a "likely" to

“very likely” intention to cheat in the future, with 50.00% of the participants being unsure if they would engage in future cheating behaviour.

Only 3.26% of the respondents reported copying from someone in an exam with 5.67% reporting to have copied from someone in a test. The highest self-report on cheating was *plagiarising an assignment* with 61.90% respondents reported that they have plagiarised an assignment in the past. *Plagiarising an assignment* in the study included a variety of activities as illustrated in table 6. It is alarming to note that 44.43% of participants admitted that they have copied all or part of someone else’s assignment or hand-in tutorial. The lowest occurrence of plagiarism was turning in an assignment that was completed for another course (4.46%).

**Table 6**  
*Frequency of self-reported cheating behaviour*

Cheating behaviour	Yes	No
<b>1. Plagiarism</b>		
a. Turning in an assignment or hand-in tutorial written by someone else	14.07%	79.59%
b. Turning in an assignment or hand-in tutorial that was submitted for another course	4.46%	89.19%
c. Using exact words or ideas from a WWW source without acknowledging the source	17.67%	75.99%
d. Using exact words or ideas for a book or other printed publication with acknowledging the source	15.95%	77.70%
e. Copying all or part of someone’s assignment or hand-in tutorial	44.43%	49.22%
f. Getting someone else to do the assignment or hand-in tutorial	9.78%	83.88%
<b>2. Copying from someone during a test</b>	5.56%	88.00%
<b>3. Copying from someone during an exam</b>	3.26%	90.40%

Note. N = 485. 6.35% of the sample did not indicate “yes” or “no” to the questions and indicated “n/a”

The certainty of the cost of cheating (*formal sanctions, shame and embarrassment*) was high with copying in an exam ( $M = 5.33, SD = 1.06$ ) as well as plagiarising an assignment ( $M = 5.42, SD = 1.13.$ ). Even though respondents reported high certainty on the cost of cheating, cheating activities are still taking place at universities.

The mean response on *anti-intellectualism* was 3.52 out of 7.00 ( $N = 426$ ,  $SD = 1.01$ ). The median response was 3.60. Of all the participants 7.58% reported anti-intellectual levels of 5 and higher (agree somewhat to strongly agree) with 8.00% of the respondents reported anti-intellectual levels below 3.

The mean response on the *benefits of cheating* was 2.20 out of 5.00 ( $N = 426$ ,  $SD = 1.02$ ), with the median at 2.20. Out of all the respondents 48.82% reported that the benefits presented in the survey would not cause them to cheat, with 5.88% admitting that they would cheat based on the benefits. There were 45.30% participants that were neutral in their response regarding the benefits of cheating.

Reported levels on the *cost of cheating* were high with mean scores 5.21 out of 7.00 ( $N = 426$ ,  $SD = 0.94$ ), with the median 5.30. Cost of cheating included three distinct scales, *formal sanction* ( $M = 4.92$ ,  $SD = 0.97$ ), *shame* ( $M = 5.89$ ,  $SD = 1.24$ ) and *embarrassment* ( $M = 5.14$ ,  $SD = 1.47$ ).

### **Correlation Analysis**

Table 7 represents the correlations matrix of all the variables highlighting vales at the significance level \* $p < .05$ ; \*\* $p < 01$ ; \*\*\* $p < 001$ . The variable most strongly associated with the dependent variable, *cheating intention*, was the perceived *benefits of cheating* ( $r = .51$ ,  $p \leq 0.0005$ ). This positive correlation indicated that high self-reported intentions to cheat were associated with high perceptions on the benefits of cheating.

There was also a significant negative correlation between the participants' *cheating intention* and the perceived *shame* ( $r = -.36$ ,  $n = 426$ ,  $p \leq 0.0005$ ) and *embarrassment* ( $r = -.26$ ,  $n = 426$ ,  $p \leq 0.0005$ ) association with cheating. There is an association that the intention to cheat will decrease as the costs of cheating increase. There was a strong positive correlation between *shame* and *embarrassment* ( $r = -.60$ ,  $n = 426$ ,  $p \leq 0.0005$ ); these results imply a high likelihood that students who are will feel embarrassed if caught cheating will also be ashamed if they are caught. There was also a significant negative correlation between age and the participants' *cheating*



intention ( $r = -.14, n = 426; p = 0.04$ ); intention to cheat is less with older students. The positive correlation between *anti-intellectualism* and the *benefits of cheating* was also significant ( $r = .16, n = 426, p = 0.002$ ). As the perceived benefits of cheating increases so too does the levels of anti-intellectualism. The pre-assumption that students with high levels of anti-intellectualism would be more inclined to cheat was not supported as there was no significant correlation between *anti-intellectualism* and *cheating intention* ( $r = .07, n = 426, p = .15$ ).

**Table 7**

*Means, standard deviations, skewness, kurtosis, reliability, and inter-correlations among study variables*

Variable	M	SD	Skew	K	1	2	3	4	5	6	7
1. Age	21.53	3.48	3.61	19.33							
2. Benefits of cheating	2.20	1.02	0.51	-0.57	-.13**	(.89)					
3. Anti-intellectualism	3.52	1.01	-0.06	-0.53	-.08	.16**	(.78)				
4. Cheating Intention	1.64	0.66	1.32	1.71	-.14*	.51***	.07	(.70)			
5. Formal Sanctions	4.92	0.97	-0.81	1.32	-.05	-.08	.03	-.19***	(.85)		
6. Shame	5.89	1.24	-1.20	1.27	.07	-.27***	-.04	-.36***	.42***	(.92)	
7. Embarrassment	5.14	1.47	-0.55	-0.18	.05	-.21***	-.03	-.26***	.28***	.60***	(.93)

Note.  $N = 426$  (after casewise deletion of missing data) \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ; Cronbach's Alpha reflected on the diagonal,  $M$  = mean;  $SD$  = standard deviation;  $Skew$  = skewness;  $K$  = kurtosis.

### Regression Analysis

Table 8 shows the standard multiple regression analysis of *anti-intellectualism*, *benefits of cheating*, and *cost of cheating* as predictors of *cheating intention*. *Benefits of cheating* ( $Beta = .47, p = < .0001$ ) and *shame* ( $Beta = -.20, p = < .0001$ ) were significant predictors of the participants' intention to cheat.

**Table 8**

*Regression analysis of Anti-Intellectualism, Benefits of Cheating, and Cost of Cheating as predictors of cheating intention*

Independent Variables	$\beta$	SE B*	Score	
			$t(455)$	$P$
Anti-Intellectualism	-.00	.04	-0.10	0.94
Benefits of Cheating	.47	.04	11.92	0.00
Formal Sanction	-.08	.04	-1.90	0.06
Shame	-.20	.05	-3.80	0.00
Embarrassment	-.02	.05	-0.40	0.68

Notes.  $N = 459$  (after casewise deletion of missing data)  $R = .579$   $R^2 = .335$  Adjusted  $R^2 = .328$   $F(5,453) = 45.666$   $p < 0.0000$   $SE = 0.551$

### **Hierarchical multiple regression**

Hierarchical multiple regression analysis was used to test Proposition 6. Table 9 is a summary of the hierarchical regression analysis. The first step included two control variables; *age* and *gender*. The second step included *anti-intellectualism* and the last step included the four distinct dimensions of *rational choice* (*benefits of cheating*, *formal sanctions*, *shame* and *embarrassment*). *Cheating intention* was the dependent variable.

**Table 9**

*Hierarchical Regression for Dependent Variable: Cheating Intention*

<b>Variable</b>	<b>Step 1</b>	<b>Step 2</b>	<b>Step 3</b>
<b>Control variables</b>			
<i>Gender</i>	-.05***	-.15**	-.02
<i>Age</i>	-.11***	-.11**	-.05
<b>Anti-intellectualism</b>			
<i>Anti-intellectualism</i>		.07	-.01
<b>Rational Choice</b>			
<i>Benefits of Cheating</i>			.44***
<i>Formal Sanctions</i>			-.06
<i>Shame</i>			-.22***
<i>Embarrassment</i>			-.02
<b>R<sup>2</sup></b>	.03	.04	.33***
<b>Adjusted R<sup>2</sup></b>	.03	.03	.32***
<b>Change in R<sup>2</sup></b>		.00	.29***

Note. N = 441 (after casewise deletion of missing data); \*p < .05, \*\*p < .01, \*\*\*p < .001

The regression model accounted 3.4% of the variance in *cheating intention* with both *gender* (*Beta* = -.05, *p* = < .0001) and *age* (*Beta* = -.11, *p* = < .0001) as statistically significant predictors in Step 1. In Step 2 the addition of *anti-intellectualism* (*Beta* = .07, *p* = .17) did not make a significant difference in explaining *cheating intention* ( $\Delta R^2 = .004$ , *p* = .17). *Age* (*Beta* = -.11, *p* < .01) and *gender* (*Beta* = -.15, *p* < .01) remained significant predictors of *cheating intention*.

The *rational choice* dimensions were added in step 3, *benefits of cheating*, *formal sanctions*, *shame* and *embarrassment*. After Step 3 the regression model explained a statistically significant additional 29% of the variance in *cheating intention* ( $\Delta R^2 = .290$ , *p* < .001). Both *benefits of cheating* (*Beta* = .44, *p* < .001) and *shame* (*Beta* = -

.22,  $p < .001$ ) were statistically significant predictors. *Age* ( $Beta = -.05, p = .25$ ) and *gender* ( $Beta = -.02, p = .63$ ) were not significant predictors in Step 3. *Anti-intellectualism* was also not a significant predictor of *cheating intention* ( $Beta = -.01, p = .72$ ).

### ***Interaction effect***

Variables were centered prior to examining interaction between *anti-intellectualism* and *benefits of cheating* to reduce the chances of multi-collinearity (Aiken & West, 1999). The results from the interaction analysis are reported in Table 10.

The interaction term in the regression equation was significant ( $Beta = -.13, p = .001$ ). This result suggests a significant interaction effect between *anti-intellectualism* and *benefits of cheating* in predicting *cheating intention*.

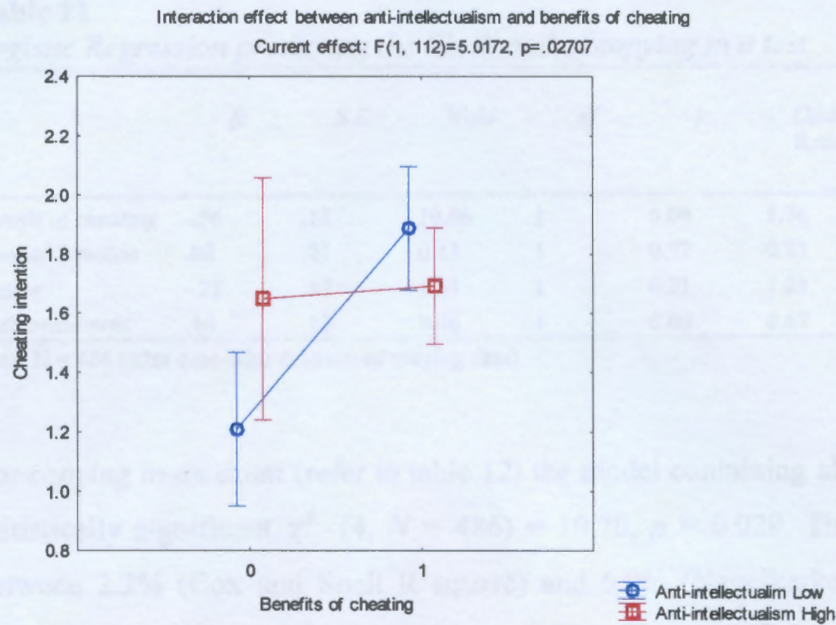
To facilitate meaningful interpretation of the findings, the sample was divided into high and low anti-intellectual groups that were plus and minus one standard deviation from the mean and plotted the relationships of *benefits of cheating* and the outcome variables *cheating intention* accordingly. Figure 1 clearly shows that for people with low levels of *anti-intellectualism*, *benefits of cheating* has a greater effect on *cheating intention* in comparison with people with high levels of *anti-intellectualism*.

**Table 10**

*Interaction effect between anti-intellectualism and benefits of cheating*

<b>Variable</b>	<b>Step 1</b>	<b>Step 2</b>
<b><i>Main Effect</i></b>		
<i>AI<sub>c</sub></i>	.00	
<i>BOC<sub>c</sub></i>	.51***	
<b><i>Interaction effect</i></b>		
<i>AI<sub>c</sub> X BOC<sub>c</sub></i>		-.13***
<b>R<sup>2</sup></b>	.26	.28
<b>Adjusted R<sup>2</sup></b>	.26	.27
<b>Change in R<sup>2</sup></b>		.02***

Note. N = 441 (after casewise deletion of missing data); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; *AI<sub>c</sub>* = anti-intellectualism centered; *BOC<sub>c</sub>* = benefits of cheating centered.



**Figure 1.** Interaction effect between *benefits of cheating* and *anti-intellectualism*

### **Logistic regression**

Logistic regression was used as it is a useful method to test propositions about the relationships between the three dichotomous outcome variables (*copying in a test*, *copying in an exam*, *plagiarising an assignment*) and the continuous independent variables (*benefits of cheating*, *formal sanctions*, *shame* and *embarrassment*) (Peng, Lee & Ingersoll, 2002).

For *copying in a test* (refer to table 11) the model containing all the predictors was statistically significant,  $\chi^2(4, N = 486) = 21.17, p = 0.0002$ . The model explained between 4.3% (Cox and Snell R square) and 10.9% (Nagelkerke R squared) of the variance. Only two of the independent variables (*benefits of cheating* and *embarrassment*) made a unique statistically significant contribution to the model. The strongest predictor of *copying in a test* was *benefits of cheating* with an odds ratio of 1.77. This indicated that respondents who perceived the benefits of cheating were 1.77 times more likely to copy in a test than those that did not perceive the benefits of cheating.

**Table 11***Logistic Regression predicting the likelihood of copying in a test*

	$\beta$	S.E.	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							Lower	Upper
<i>Benefit of cheating</i>	<b>-.56</b>	<b>.18</b>	<b>10.06</b>	<b>1</b>	<b>0.00</b>	<b>1.76</b>	<b>1.24</b>	<b>2.49</b>
<i>Formal Sanction</i>	.08	.21	0.13	1	0.72	0.93	0.61	1.40
<i>Shame</i>	-.21	.17	1.54	1	0.21	1.23	0.89	1.71
<i>Embarrassment</i>	<b>.40</b>	<b>.13</b>	<b>9.46</b>	<b>1</b>	<b>0.00</b>	<b>0.67</b>	<b>0.52</b>	<b>0.86</b>

Note. N = 486 (after case-wise deletion of missing data)

For *copying in an exam* (refer to table 12) the model containing all the predictors was statistically significant  $\chi^2$  (4,  $N = 486$ ) = 10.70,  $p = 0.029$ . This model explained between 2.2% (Cox and Snell R square) and 6.9% (Nagelkerke R squared) of the variance. Only one of the independent variables (*benefits of cheating*) made a unique statistically significant contribution to the model. The strongest predictor of *copying in an exam* was *shame* with an odds ratio of 1.40. This indicated that respondents who reported a likelihood of shame associated with cheating were 1.4 times less likely to cheat than those that did not report feeling shame when cheating.

**Table 12***Logistic Regression predicting the likelihood of copying in an exam*

	$\beta$	S.E.	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							Lower	Upper
<i>Benefits of Cheating</i>	<b>-.51</b>	<b>.20</b>	<b>6.20</b>	<b>1</b>	<b>0.01</b>	<b>1.66</b>	<b>1.11</b>	<b>2.48</b>
<i>Shame</i>	-.34	.21	2.61	1	0.11	1.41	0.93	2.13
<i>Embarrassment</i>	.25	.15	2.52	1	0.11	0.78	0.58	1.06
<i>Formal Sanction</i>	.34	.23	2.27	1	0.13	0.71	0.45	1.11

Note. N = 481 (after case wise deletion of missing data)

For *plagiarising an assignment* (refer to table 13) the model containing all the predictors was statistically significant  $\chi^2$  (4,  $N = 488$ ) = 45.99,  $p \leq 0.00005$ . This explained between 9.00% (Cox and Snell R square) and 12.30% (Nagelkerke R squared) of the variance. Only one of the variables (*benefits of cheating*) made a unique statistically significant contribution to the model. The strongest predictor of

*plagiarising in an assignment* was *benefits of cheating* with an odds ratio of 1.80. This indicated that respondents who perceived the benefits of plagiarising an assignment were 1.80 times more likely to plagiarise than those that did not perceive the benefits of plagiarising an assignment.

**Table 13**  
*Logistic Regression predicting the likelihood of plagiarising an assignment*

	$\beta$	S.E.	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							Lower	Upper
<i>Benefits of cheating</i>	<b>-.59</b>	<b>.11</b>	<b>30.21</b>	<b>1</b>	<b>0.00</b>	<b>1.80</b>	<b>1.46</b>	<b>2.23</b>
<i>Formal Sanction</i>	.17	.11	2.24	1	0.14	0.85	0.68	1.05
<i>Shame</i>	-.08	.11	0.51	1	0.48	1.08	0.87	1.33
<i>Embarrassment</i>	.15	.08	3.13	1	0.08	0.86	0.73	1.02

Note. N = 488 (after casewise deletion of missing data)

### Group differences

A condition from one institution was that the results from the different universities surveyed should not be compared. As a result group differences at institutional level cannot be reported. A consideration for future research is to explore differences across institution.

The researcher was permitted to analyse group differences across *gender*. Men had a higher self-reported on cheating intention ( $N = 173$ ,  $M = 1.88$ ,  $SD = 0.73$ ) compared to women ( $N = 131$ ,  $M = 1.71$ ,  $SD = 0.59$ ).

## CHAPTER 5: DISCUSSION

The aim of the current research was to investigate the relationship between *cheating intention* and *rational choice* and *anti-intellectualism* in an attempt to explain cheating behaviour. This chapter presents a discussion of the results with specific reference to the propositions of the study and the available literature on anti-intellectualism and rational choice in relation to cheating. Suggestions for future research as well as limitations of the current research will be discussed.

### **Contributions of this study**

This research contributed to knowledge by investigating anti-intellectualism and rational choice as predictors of cheating behaviour. Furthermore, this research obtained data from three South African higher educational institutions, increasing the external validity of the results to the South African context.

Cheating behaviour extends to the workplace: in a survey sample 91% of participants admitted to cheating and 98% of the same sample also engaged in illicit work behaviour (Sims, 1993). There is thus a definite link between academic cheating and corrupt workplace behaviour. Therefore by gaining an understanding of cheating behaviour in sites of learning it is assumed that the theory can be extended to gain an understanding of unethical workplace behaviours.

Limited research exists on the relationship between cheating and rational choice and/or cheating and anti-intellectualism within the South African context. There is also a great deal of research available on the relationship between rational choice and cheating, but little on anti-intellectualism and cheating, and no research investigating both variables in relation to cheating. The current research investigated anti-intellectualism and rational choice theory specific to the South African context and the contribution of this study is as follows:

1. The study developed scales adapted from previous research that can be applied to the South African context. These scales reported good factorial validity with Eigenvalues greater than 1.00 and high internal reliability i.e. anti-intellectual scale ( $\alpha = .78$ ), benefits of cheating scale= ( $\alpha = .89$ ), and cost of cheating scale ( $\alpha = .91$ )
2. Students' cheating intentions were investigated with 48.90% participants indicating that it is "very unlikely" or "unlikely" for them to engage in cheating behaviour.
3. The extent of cheating depends on the situation, as 61.90% of students reported to have plagiarised in the past, but only 3.62% reporting copying from someone in an exam and 5.67% reporting to have copied from someone in a test.
4. There is no established relationship between students in South Africa having high levels of anti-intellectualism and cheating intentions.
5. The most significant predictor of students' decision to cheat was the perceived benefit of cheating.
6. There is a significant interaction effect between *anti-intellectualism* and *benefits of cheating* as predictors of *cheating intention*.
7. *Shame* had a significant inverse effect on *cheating intention*. This finding holds practical implications for higher institutions on how to formulate their sanctions and honour codes.
8. Students who perceive the benefits of cheating are 1.77 times more likely to copy in a test than those who do not perceive any benefits of cheating.
9. Students who report a likelihood of shame associated with cheating are 1.4 times less likely to cheat than those that do not report feeling shame when cheating.
10. Students who perceive the benefits of plagiarising an assignment are 1.80 times more likely to plagiarise than those that do not perceive the benefits of plagiarising an assignment.

These contributions will be discussed in more detail below.



### ***Psychometric properties of the scales***

The factorial validity for all the scales was high with Eigenvalues greater than 1.00. The *cheating intention* scale loaded on one factor as did the *anti-intellectualism* scale. As expected, exploratory factor analysis indicated that *rational choice* had four underlying dimensions, *benefits of cheating*, *formal sanctions (i.e. being caught cheating and punished if caught cheating)*, *shame* and *embarrassment*. These results suggest that the scales adapted are well-developed to measure for *anti-intellectualism* (Eigenberger & Seilander, 2001), *benefits of cheating* (Passow et al., 2006) and *cost of cheating* (Cochran et al., 1999) within the South African context.

The internal consistency of the scales was in line with that of the original scales with high alpha coefficients; *anti-intellectualism* ( $\alpha = .78$ ) compared to Eigenberger and Seilander's study (2001) ( $\alpha = .91$ ), *cost of cheating* ( $\alpha = .91$ ) compared to Cochran et al. (1999) ( $\alpha = .84$ ) and *benefits of cheating* ( $\alpha = .89$ ) compared to Passow et al. (2006) ( $\alpha = .87$ ). This confirmed that the adapted scales were highly reliable measures for this sample.

This study therefore contributes to the limited research available on rational choice and anti-intellectualism in South African by adapting scales and verifying that it can be applied to the South African context.

### ***Cheating intention and self-reported cheating behaviour***

The summary variable for *cheating intention* was compared to the outcome variables, (1) *copying from someone in a test*, (2) *copying from someone in an exam*, and (3) *plagiarising an assignment*, in an attempt to establish the self-report on actual versus intended cheating behaviour. These cheating behaviours were selected as they are perceived as the most common types of cheating behaviour at universities (De Jager & Brown, 2010; Ogilvie & Stewart, 2010; Rettinger & Kramer, 2009).

Of the sample, 48.90% participants indicated that it is "very unlikely" to "unlikely" for them to engage in future cheating behaviour, with 50.00% of the participants

unsure if they would cheat in the future; yet when asked about actual cheating behaviour 61.90% of the participants admitted to plagiarising an assignment. These findings, even though still troubling, are slightly lower than the results of De Jager and Brown (2010) reporting 72% of the participants within the South African context admitting to plagiarising.

The self-reported cheating measured in this study is also lower than results in other countries. In America, self-reporting of cheating (including plagiarism) ranged from 73% (Rettinger & Kramer, 2009), 75% (Hutton, 2006) to 83% (Cochran et al., 1999). In Australia 86.9% of students admitted to either minor or serious plagiarism transgressions (Ogilvie & Stewart, 2010).

Different forms of plagiarism were included in the current study. Students had to report on activities such as “I turned in an assignment or hand-in tutorial written by someone else”; “I turned in an assignment or hand-in tutorial that I had submitted for another course”; “I used exact words or ideas from a book/WWW source without acknowledging the source”; and “I copied all or part of someone’s assignment or hand-in tutorial work.” The results ranged from 4.46% (students admitting turning in an assignment or hand-in tutorial that was submitted for another course) to 44.43% (students admitting to copying all or part of someone’s assignment or hand-in tutorial). A suggestion for future research is to investigate the frequency of the different forms of plagiarism and possible reasons for these differences. It might be that the cost of certain plagiarism activities is higher, deterring students from plagiarising and vice versa.

There was a significant drop in the participants’ self-report on cheating in an exam and cheating in a test. Only 3.26% of the respondents admitted to copying from someone in an exam and 5.67% admitted to copying from someone in a test. It seems that there is a perception amongst students that minor forms of plagiarism (such as copying a couple of words without citing or copying from a friend) do not constitute cheating. The participants admitted to the above plagiarism transgressions but did not view the activity in the same way as other cheating behaviour when asked about their intention to cheat in the future. Similarly Michaels and Miethe (1989) reported that

67% of the participants viewed cheating on homework or lab work as “not at all” or “only slightly” wrong.

The notion of group work is also strongly reflected in the current findings, with 44.43% of the respondents admitting to copying an assignment from someone else. The assumption is that the risk of feeling shame if caught is less prominent with this form of cheating since the behaviour has been normalised by the group. These results are troubling as they imply that students do not define all forms of plagiarism as cheating behaviour.

*Age* also negatively correlated with *cheating intention*. This is consistent with a finding by Elias (2009) that older students are less inclined to cheat than younger students. Hutton (2006) also reported that cheating was lower among non-traditional, older students who spend less time on campus and have fewer connections with other students.

### ***The relationship between cheating intention and anti-intellectualism***

No information in the South African literature could be found on the correlation between anti-intellectualism and cheating behaviour. The assumption at the onset of this study was that students in South Africa would be no different to students in America. As expected the participants scored average in their anti-intellectual attitudes, similar to the findings in the study by Elias (2009).

Elias (2009) also proposed that students with high levels of anti-intellectualism were more likely to view cheating as less unethical. The second assumption of the current study is that if students view cheating as less unethical they will be more inclined to have intentions to cheat in the future. However, the correlation between *cheating intention* and *anti-intellectualism* was not significant, thus failing to confirm proposition 1 that *anti-intellectualism correlates positively with cheating intention*.

There is thus no support that students with high levels of anti-intellectualism within the South African context are more inclined to cheat as a means of completing their

degrees. Those students that are more concerned with practical ways of doing rather than learning and in a hurry to complete their degree are not necessarily the students that will engage in cheating behaviour. Other factors are influencing the students' decision to cheat.

*Anti-intellectualism* only correlated with one variable, *benefits of cheating*. Results from the regression analysis indicated an interaction effect between *anti-intellectualism* and *benefits of cheating*. The interaction explained a significant variance in the students' intention to cheat over and above the two variables separately. *Anti-intellectualism* one standard deviation below the mean also played a significant role in moderating the relationship between *benefits of cheating* and *cheating intention*.

However *anti-intellectualism* did not significantly change the explained variance in *cheating intention* during the hierarchical multiple regression analysis, thus yielding no support for proposition 2 suggesting that *anti-intellectualism helps explain significant variance in cheating intention*. The results did, however, confirm proposition 6 that *rational choice theory explains significant variance in cheating intention over and above that explained by anti-intellectualism*. Although the surveyed students reported average levels of anti-intellectualism ( $M = 3.53$ ), their intention to cheat was not as a result of their disrespect for higher education. Students will cheat based on the cost-benefit calculation as proposed by rational choice theory.

Interesting results were that *gender* and *age* explained a significant variance in cheating intention, accounting for 3.40% of the variance in the first step of the hierarchical regression. *Anti-intellectualism* did not make a significant difference to *cheating intention* when it was added in step 2, however *age* and *gender* remained significant with *age* ( $Beta = -.11, p < .01$ ) and *gender* ( $Beta = -.05, p < .01$ ). As soon as the rational choice variables (*benefits of cheating, formal sanctions, shame* and *embarrassment*) were added to the hierarchical multiple regression, *age* and *gender* no longer explained a significant amount of the variance of *cheating intention*.

### ***The relationship between cheating intention and rational choice***

Rational choice consisted out of *benefits of cheating* and *cost of cheating*. *Cost of cheating* in turn consisted out of three distinct variables: *formal sanction*, *shame*, and *embarrassment*.

Of all the rational choice variables, *benefits of cheating* had the strongest positive correlation with *cheating intention*, thus confirming proposition 5 that the *perceived benefits of cheating correlate positively with cheating intention*. This positive correlation implies that students base their decision to cheat on the perceived benefits to be gained.

This is in line with results from the Michaels and Miethe's (1989) study with undergraduate sociology students in America, where 60% of students reported that the gains of cheating outweighed the risk. Only 27% of the surveyed students reported the risk being more than the gains. There was also a significant negative correlation between participants' *cheating intention* and the *cost of cheating*, thus confirming proposition 4 that the *perceived costs of cheating correlate negatively with cheating intention*.

This negative correlation suggests that either formal or informal sanctions (the latter including *shame* and *embarrassment*) could discourage students from cheating. These findings are similar to those of Ogilvie and Stewart (2010), who reported that students who perceived greater shame reported lower probabilities of engaging in cheating activities. Tibbetts (1997) also reported that shame inhibited cheating intentions. These results suggests that within the South African context cheating behaviour has not reach the same extent of normalisation than it has in other countries like America. The risk of feeling ashamed and rejected by one's peer group if caught cheating is the greatest inhibitor of cheating behaviour. Students will, however, cheat in situations (such as plagiarising a few words from a www. Source) where they know the chances of being caught are minimal

The findings of this study are also consistent with that of Tibbetts (1997). In support of Rational Choice Theory, regression analysis by Tibbetts (1997) showed that

students' intention to cheat was determined by weighing up the cost (specifically shame) with the benefits of cheating. The other costs associated with cheating (that is, formal sanction and embarrassment) did not account for the same level in explaining cheating intention. In the current study, *rational choice* explained a significant variance of 29% in *cheating intention*, thus confirming proposition 3 that *rational choice theory helps explain significant variance in cheating intention*. The results from the hierarchical multiple regression confirmed proposition 6, that *rational choice theory explains significant variance in cheating intention over and above that explained by anti-intellectualism*. Consistent with Tibbetts (1997), the *benefits of cheating* and *shame* made the biggest contribution to this variance.

This implies that students' intention to cheat is dependent on the associated benefits and the possible shame if caught. These findings around the cost of cheating are also similar to that of Cochran et al. (1999), which reported shame as the only significant variable over *formal sanctions* and *embarrassment*.

Based on the logistic regression analysis, the *benefits of cheating* increased the likelihood of *copying in a test* 1.76 times, the likelihood of *copying in an exam* 1.66 times, and the likelihood of *plagiarising an assignment* by 1.80 times.

### **Limitations of this study**

Past research has commented on the limitations of and threats to the internal validity caused by using surveys to collect data (Anderman et al., 2010; Kronenberg et al., 2010; Ogilvie & Stewart, 2010). Some of limitations mentioned in these studies are also relevant to the current study and will be explored below.

*Low response rate.* It was not possible to establish the response rate for the current research as the population samples were not known. This was due to the distribution of the survey throughout a large number of students at three different universities. De Jager and Brown (2010) stated that online response rates over the last 15 years have dropped from 61% to 24%. This decline in response over the years could be due to the saturation of the market. An online survey also implies that the sample has no

previous interaction with the researcher, so there is no obligation to complete the survey. Despite this limitation, the number of respondents (N= 589) willing to participate was substantial enough to make statistical inferences.

*Non-response bias.* A possible limitation with the current research is in the non-response bias. Many respondents may have chosen not to participate based on the objective of the study (understanding about cheating behaviour). The reasons for some of those approached choosing not to respond or to opt out during the survey could have added valuable insights to the research. Ogilvie and Stewart (2010) identified this as a potential limitation to their research, in that there could be systematic differences between those that choose to respond and those that opted out. Kronenberg et al. (2010) argued that there could be a higher willingness to commit the offence amongst those that chose not to respond.

*Social bias.* Self-report is the most controversial topic when using surveys to collect data. Self-report instruments have been reported as a potential limitation to successful and accurate research, due to the risk that respondents might not report accurate data (Anderman et al., 2010; Ogilvie & Stewart, 2010; Tas & Tekkaya, 2010; Tibbetts, 1997). It has been reported that the best way to counterbalance the effect of social desirability, is to reassure the participants of their anonymity (Kronenberg et al., 2010; Tas & Tekkaya, 2010). The current research reported similar findings to those of Ogilvie and Stewart (2010) in that, despite the assurance of anonymity, cheating intention was still being under-reported with the self-report surveys. Another limitation is that the intention to cheat does not necessarily imply cheating. Given enough time and budget a longitudinal study, as opposed to cross-sectional studies, would have been a better measure of the correlation between intended and actual cheating behaviour.

*Common method variance.* Another limitation with self-report questionnaires in social and behavioural sciences is common method variance. This is the variance resulting from the measurement method rather than from the constructs represented by the measurement, and the result might be an incorrect correlation amongst the variables (Reio, 2010). There are various ways in which one can control common method

variance. Some of the methods that were applied in this study included the guarantee of the anonymity of respondents as well as ensuring that the survey provided clear questions and instructions (Reio, 2010).

### **Suggested future research**

The aim of the study was not to explore differences among students at different universities. However it would be interesting for future research to investigate any possible differences in the level of anti-intellectualism of the students and the possible impact on cheating behaviour. The honour codes and the enforcement of these codes also differ at the various universities and this could have an impact on the cost-benefit calculation (rational choice theory) when making a decision to engage in cheating behaviour. The cost of cheating within certain universities might be higher, thus reducing the students' intention to engage in cheating behaviour.

Research should also explore the differences on the effects of the sanctions (formal and informal) across a variety of samples compared to the types of offences (Cochran et al, 1999). This study showed that students were more inclined to engage in certain cheating behaviour than others, and it would be interesting to investigate the effects of the relationship between the type of offence and the level of the sanction.

Future research should focus on the design of the cheating intention scale, as 50% of the respondents in this study were unsure if they would cheat in the future. These results suggest that the respondents felt threatened by the question and opted to answer in a neutral manner. One of the limitations of this study was the loss of data from the non-respondents. Future studies should plan for this and set time aside to follow up on those that did not respond. Even if the respondents still do not wish to participate, the researcher should be able to gain insight into their reasons for not completing the survey. This will assist future studies immensely with the research design.

Variables such as attitudes and personality traits could influence students' intention to cheat, as there could be a relationship between personality and the perceived costs and



benefits of cheating. According to Elias (2009), personality variables have not received enough attention in relation to cheating behaviour. Whitley (1998) pointed out that personality traits are uncontrollable variables and cannot be manipulated to prevent or control cheating behaviour. It would therefore be valuable to gain a theoretical understanding of personality traits and cheating but this could not be extended to applied research.

## **Conclusion**

Cheating is a reality at universities. Past research has explored different methods and theories in an attempt to understand the reasons why students engage in cheating behaviour. Rational choice theory as a construct has received a great deal of attention in relation to cheating behaviour (Cochran et al., 1999; Ogilvie & Stewart, 2010; Tibbetts, 1997; Tibbetts & Myers, 1999; Wright et al., 2004). Recently, Elias (2009) examined anti-intellectualism in relation to cheating behaviour amongst business students in America. This study has expanded on this research by also investigating the relationship between both these constructs with specific focus to the South African context.

The findings of this study are contrary to those of Elias (2009) as no significant correlation was found between levels of anti-intellectualism and respondents' intention to cheat in the future. This finding suggests that even though South African students may have high levels of anti-intellectualism these do not lead to an increase in cheating intention.

This study indicates that the decision to cheat is largely influenced by the perceived benefits weighed up against costs incurred. This study holds important implications for academic institutions in that it gives insight into how to structure the university's honour codes and the necessity to make students more aware of the informal sanctions against cheating.

## REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage
- Anderman, E., Cupp, P., & Lane, D. (2010). Impulsivity and academic cheating. *The Journal of Experimental Education*, 78(1), 135 - 150.
- Anitsal, I., Anitsal, M., & Elmore, R. (2009). Academic dishonesty and intention to cheat: A model on active versus passive academic dishonesty as perceived by business students. *Academy of Educational Leadership Journal*, 13(2), 17-26.
- Arhin, A. O. (2009). A pilot study of nursing student's perception of academic dishonesty: A generation Y perspective. *The ABNF Journal*, 20 (1), 17-21.
- Atmeh, M., & Al-Khadash, H. (2008). Factors affecting cheating behavior among accounting students (using the theory of planned behavior). *Journal of Accounting - Business & Management*, 15, 109-125.
- Balough, R. S., & Girvan, R. B. (2010). Examining the existence and extent of anti-intellectual attitudes and behaviors among university students. *Sociological Viewpoints*, Spring, 5-17.
- Bloodgood, J. M., Turnley, W. H., & Mudrack, P. (2008). The influence of ethic instruction, religion, and intelligence on cheating behavior. *Journal of Business Ethics*, 82, 557-571.
- Chang, M. K. (1998). Predicting unethical behaviour: A comparison of the theory of reasoned action and the theory of planned behaviour. *Journal of Business Ethics*, 17, 1825-1834.
- Cochran, J. K., Chamlin, M. B., Wood, P. B., & Sellers, C. S. (1999). Shame, embarrassment, and formal sanction threats: Extending the deterrence/rational choice model to academic dishonesty. *Sociological Inquiry*, 69(1), 91-105.

- Davy, J. A., Kincaid, J. F., Smith, K. J., & Trawick, M. A. (2007). An examination of the role of attitudinal characteristics and motivation on the cheating behavior of business students. *Ethics & Behavior, 17*(3), 281-302.
- De Jager, K., & Brown, C. (2010). The tangled web: Investigating academics' view of plagiarism at the University of Cape Town. *Studies in Higher Education, 35*(5), 513-528.
- Eigenberger, M. E., & Sealander, K. A. (2001). A scale for measuring students' anti-intellectualism. *Psychological Reports, 89*, 387-402.
- Elias, R. Z. (2009). The impact of anti-intellectualism attitudes and academic self-efficacy in business students' perceptions of cheating. *Journal of Business Ethics, 86*, 199-209.
- Ellis, S. (2008). The varieties of instrumental rationality. *The Southern Journal of Philosophy, 46*, 199-220.
- Hair, J. F., Babin, B., Money, A. H., & Samouel, P. (2003). *Essentials of business research methods*. Hoboken, NJ: Wiley.
- Hofstadter, R. (1963). *Anti-intellectualism in American life*. New York: Knopf.
- Hutton, P. A. (2006). Understanding student cheating and what educators can do about it. *College Teaching, 54*(1), 171-176.
- Jordan, A. E. (2001). College student cheating: The role of motivation, perceived norms, attitudes, and knowledge of institutional policy. *Ethics & Behavior, 11*(3), 233-247.
- Kronenberg, C., Heintze, I., & Mehlkop, G. (2010). The interplay of moral norms and instrumental incentives in crime causation. *Criminology, 48*(1), 259-294.
- Laverghetta, A., & Nash, J. (2010). Student anti-intellectualism and college major. *College Students Journal, 44*(2), 528-532.

- Lucas, G. M., & Friederich, J. (2005). Individual differences in workplace deviances and integrity as predictors of academic dishonesty. *Ethics & Behavior*, 15(1), 15-35.
- May, R. (1955). A psychological approach to anti-intellectualism. *Journal of Social Issues*, 11(3), 41-47.
- Michaels, J. W., & Miethe, T. D. (1989). Applying theories of deviance to academic cheating. *Social Science Quarterly*, 70(4), 870-885.
- Ogilvie, J., & Stewart, A. (2010). The integration of rational choice and self-efficacy theories: A situational analysis of student misconduct. *The Australian and New Zealand Journal of Criminology*, 43(1), 130-155.
- O'Rourke, J., Barnes, J., Deaton, A., Fulks, K., Ryan, K., & Rettinger, D. A. (2010). Imitation is the sincerest form of cheating: The influence of direct knowledge and attitudes on academic dishonesty. *Ethics & Behaviour*, 20(1), 47-64.
- Oxford Dictionaries. *Oxford dictionaries*. Retrieved from <http://oxforddictionaries.com/>
- Passow, H. J., Mayhew, M. J., Finelli, C. J., Harding, T. S., & Carpenter, D. D. (2006). Factors influencing engineering students' decision to cheat by type of assessment. *Research in Higher Education*, 47(6), 643-684.
- Peng, C. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research*, 96(1), 3-14.
- Quackenbush, S. T. (2004). The rationality of rational choice theory. *International Interactions*, 30, 87-107.
- Reio, T. G. (2010). The threat of common method variance bias to theory building. *Human Resource Development Review*, 9, 405-411.
- Rettinger, D. A., & Jordan, A. E. (2005). The relations among religion, motivation, and college cheating: A natural experiment. *Ethics & Behaviour*, 15(2), 107-129.

- Rettinger, D., & Kramer, Y. (2009). Situational and personal causes of student cheating. *Research in Higher Education*, 50(3), 293 - 313.
- Rigney, D. (1991). Three kinds of anti-intellectualism: Rethinking Hofstadter. *Sociological Inquiry*, 61(4), 434-451.
- Semerci, C. (2006). The opinions of medicine faculty students regarding cheating in relation to Kohlberg's moral development concept. *Social Behaviour and Personality*, 34(1), 41-50.
- Simon, H. A. (1955). A behavioural model of rational choice. *The Quarterly Journal of Economics*, 69(1), 99-118.
- Sims, R. L. (1993). The relationship between academic dishonesty and unethical business practices. *Journal of Education for Business*, 68(4), 207-211.
- StatSoft, Inc. (2011). *Electronic statistics textbook*. Tulsa, OK: StatSoft. Retrieved from <http://www.statsoft.com/textbook/>
- Sullivan, A. (2006). Students as rational decision-makers: The question of beliefs and attitudes. *London Review of Education*, 4(3), 271-290.
- Tas, Y., & Tekkaya, C. (2010). Personal and contextual factors associated with students' cheating in science. *The Journal of Experimental Education*, 78(4), 440.
- Tibbetts, S. G. (1997). Gender differences in students' rational decision to cheat. *Deviant Behavior*, 18(4), 393-414.
- Tibbetts, S. G., & Myers, D. L. (1999). Low self-control, rational choice, and student test cheating. *American Journal of Criminal Justice*, 23(2), 179-200.
- Whitley, B. E. (1998). Factors associated with cheating among college students: A review. *Research in Higher Education*, 39(3), 235-274.

Wright, B. R. E., Caspi, A., Moffit, T. E., & Paternoster, R. (2004). Does the perceived risk of punishment deter criminally prone individuals? Rational choice, self-control, and crime. *Journal of Research in Crime and Delinquency*, 41, 180-213.