Gordon Institute of Business Science
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The role of uncertainty and loss-framing in ethical decision-making by accountants

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ABSTRACT

In line with the rules applying to all directors of a company, accountants also have the fiduciary duty to act ethically in all their decision-making. However, the widely-publicised cases of accounting fraud and misrepresentation of financial information is eroding public confidence in accountants. In order to address the topic of the role of uncertainty and loss-framing in ethical decision-making by accountants, the researcher decided to apply a quantitative experimental research design in this study to collect primary data. This research design comprised three experimental groups, amounting to a total sample size of 167 accountants. The primary research was supported by secondary research, which included key literature on behavioural economics, prospect theory, various ethical decision-making frameworks, and the ethical positioning questionnaire.

The present study revealed that situations framed negatively on the actions and behaviour of accountants, and where there was a perceived likelihood of a financial loss, there was a greater likelihood among accountants to consider unethical decision-making. Conversely, uncertain situations were unlikely to induce unethical decision-making. The study also explored the personal moral philosophy construct of taxonomy to determine if it can differentiate the extent of ethical behaviour between absolutists and situationists. Although the study established that there were some differences between the ethical behaviour of those found among absolutists and those identified among situationists, the results were not conclusive enough to clearly differentiate their ethical behaviour. However, the key contribution of this research is that it identified which framed decisions are more likely to result in unethical decisions being made by accountants and which framed situations are not likely to result in unethical decision-making.

KEYWORDS

Ethical decision-making; loss-framing; gain-framing; uncertainty; accountants

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Igor Hockey 29 March 2021

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ACRONYMS/ABBREVIATIONS

Acronym/abbreviation	Meaning
GIBS	Gordon Institute of Business Science
SAICA	South African Institute of Chartered Accountants
EPQ	Ethical positioning questionnaire
SOX	Sarbanes–Oxley Act
LCCP	Lake Charles Chemicals Project
P&L	Profit and Loss Statement

CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Research Title

The role of uncertainty and loss-framing in ethical decision-making by accountants.

1.2 Introduction

In an increasingly challenging business landscape and a competitive environment where businesses are driven by profit targets which include the expected profitability returns and the increased shareholder value, companies are finding themselves being forced to implement often highly unpopular strategies. Since the ruling by the Johannesburg Stock Exchange to insist on all listed companies having to abide by the King IV Code of Conduct, and stricter governance measures being put in place in most larger companies to combat the scourge of fraud and corruption, the need for ethical decision-making has become imperative for directors, management and all professionals working in such organisations. Accountants are an integral part of this competitive and ever-changing landscape, and are also subject to the new governance rulings. Financial misstatements, omissions of vital facts in financial statements, and blatant financial fraud by accountants are increasingly being detected and seem to have become an inherent part of many businesses. In light of the drive for better governance measures being put in place to detect such criminal actions before they cause irreparable damage to the organisation and to the reputation and career of the individual, there is the need for business and accountant bodies to be able to identify the influencing factors that can potentially cause accountants to be motivated to conduct, tolerate, or perpetrate unethical actions, or even make decisions that might lead to unethical choices (Dewi & Dewi, 2018).

The term known as ethics originated from the Greek word ethos, meaning “character” or “custom” (Oseni, 2011). The literature on the topic of ethics is complex and broad, and has by no means been exhausted (Lehnert, Park, & Singh, 2015). Whether or not individuals behave ethically is subject to a range of variables (Lehnert et al., 2015). This includes an individual’s motives, emotional factors, the effect of framing, the ambiguous nature of a decision, the consequence of a decision and the individual’s moral capacity. Individuals, groups, corporations, and government institutions are continually presented with ethical dilemmas.

This empirical research was undertaken to obtain an understanding of situational factors that could influence the ethical or unethical decision-making by accountants as seen from a framing perspective. Ethics remain an increasingly relevant topic, as the number of unethical decisions, leading to unethical or even criminal actions in companies and the public sector, are being identified and publicised at a local and global level. Not only do fraud and corruption, or unethical actions or decision-making have an impact on the individual, the business, and all stakeholders, but they also reduce the level of trust in business or the public sector, and also lead to a lack of investment or even disinvestment from existing businesses. This in turn, damages the economy and perpetuates unemployment and poverty in a country that can ill-afford it. Accountants are the financial gatekeepers of transactions and are responsible for the reporting of those transactions in the public sector, the private sector, and in non-profit organisations.

Chapter 1 covers the research problem, the research objectives, aims and the key definitions that were used in the research.

1.3 Context

There have been numerous prominent financial or governance scandals over the recent years, since the year 2000. For example, in 2001, Enron overstated its earnings and concealed its bad debts. This concealment concerned its debtors (reporting on individuals and companies that owed them money, while they were not capable of paying their debts) as this would have reduced Enron's profits in those specific years. In 2003, HealthSouth inflated its earnings, and in 2008, Lehman Brothers did not reflect the company's loans on its balance sheet, meaning that their outstanding liabilities were understated, resulting in an overstatement of the company's net asset position (CFI, 2020). Despite the increase of King IV rules and other governance measures being implemented in recent years, including regulations and applied additional oversight such as the Sarbanes–Oxley Act (SOX) in America, and greater dedication and attention being given to ethics as a subject in the accounting field, there is still an increase in accountants being identified as behaving unethically (West, 2018). Recent examples of accounting fraud, misrepresentation and irregularities have made the news headlines in South Africa and internationally between the years 2015 to 2020.

South Africa

Company	Date and Reason	Source
Sasol	2019 − Not fully disclosing the true project cost of the LCCP project in America	(Business Insider SA, 2020)
VBS Bank	2017 − Fraud and financial mismanagement	(Business Insider SA, 2020)
KPMG	2017 − Lost many clients due to their links to the Gupta business and State Capture	(Business Insider SA, 2020)
Steinhoff	2017 − Inflating profits	(Business Insider SA, 2020)
Tongaat Hulett	2017 − Inflating profits	(Business Insider SA, 2020)

Internationally

Company	Date and Reason	Source
Tesco	2015 − Overstated profit by about £263m	(Awolowo, Garrow, Clark, & Chan, 2018)
Toshiba	2016 − Fraudulent financial representations	(Awolowo et al., 2018)

It could therefore be argued that while not all fraud and corruption had been identified, there may well be a perpetual nature of accounting fraud, misstatement and irregular accounting activities (Awolowo et al., 2018) as is evident from these few listed examples at a local and international level. These examples represent only some of the many companies that were exposed, flagged or where the irregular activities were becoming too big to hide in their financial statements. Commercial fraud, corruption, and unethical behaviour or activities are exacerbated by an environment of constant pressure on business to perpetually deliver growth and a positive financial performance for the company's survival as well as stakeholder/shareholder returns on their investments. While unethical behaviour can take place at all levels of an organisation, the organisational culture has a strong influence on what misdemeanours are tolerated or even endorsed by an organisation, and thus, management and leaders must comprehend the factors that can have an influence on an individual's ethical decision-making (Price, 2014) process. Therefore, this study investigated the effect of framing a situation on accountants' ability to act ethically in their decision-making process.

1.4 Academic Rationale for the Research

The research followed the empirical testing approach. There is an increased need for empirical research into the ethics topic as the already conducted quantitative studies produced inconsistent conclusions. Based on the challenge of a bounded awareness is for

researchers to develop cues that can help leaders (Bazerman & Sezer, 2016). This research is important as these cues can assist leaders, management and accountants to be aware of the potential effect that framing can have on their decision-making. Finance is perceived as a sub-field of economics; therefore, the influence that economics has on accounting theory is substantial, while accounting theory is still lacking in many aspects as it is always linked to other disciplines such as psychology or organisational behaviour (Smith, 2019).

The premise of this research study was grounded in following the academic recommendations. Authors had suggested that future research should test framing on ethical scenarios to investigate "whether a loss-frame leads to less ethical behaviour only if action is required" (Kern & Chugh, 2009, p. 838). "The effect of loss-framing on ethical decision-making" was also recommended for future study by the four-star journal *Psychological Science* (Kern & Chugh, 2009, p. 838). Thus, the present study focused on the constructs of ethical decision-making, and on loss-framing and uncertainty. However, various cautions are noted in the literature on accounting ethics, which include the fact that only limited research is available on the behaviour of accountants, and that there is a shortage of theory in the accounting environment (Christensen, Cote, & Latham, 2018). Thus, the scope of this research was narrowed to focus on accountants' behaviour through framing. Therefore, the study aimed to add to the body of knowledge for accountants and business leaders by identifying which framing scenarios might affect the likelihood to engage in unethical decision-making.

1.5 Business Rationale for the Research

The potential insights of the research will shed light on certain contributing factors that might cause an accountant to make unethical decisions. South Africa enjoyed the top spot in the world for seven consecutive years in the global competitiveness report for accounting and auditing standards up to 2016 (Schwab, 2019). However, both from an international and local perspective, stakeholder faith has shrunk in both auditors and accountants in their internal and external reporting of financial information, as evident through the decline in the global ratings for South Africa. In recent years, there has been an increased focus on ethics and good corporate governance in South Africa as the country's courts and ruling industry bodies are being inundated with cases that expose dishonest behaviour, fraud, and corruption conducted by influential individuals in

organisations (Nathan, 2015). One of the leading explanations for corporate failures and scandals, for example, in the case of Enron, is the failure of gatekeepers such as accountants to uncover, identify and objectively interrupt and stop unethical misconduct (Alzola, 2017).

Accountants, as the financial pillars in a company, supply the financial information that gets processed, collated, and distributed. Be it a listed or an unlisted company, accountants have to be able to be relied upon as supplying factual, accurate and trustworthy information at all times. They are the gatekeepers of a firm's financial health and wellbeing. Decisions that impact on the gatekeepers' ability to perform their task are most often hierarchical, being passed 'top-down' from senior managers and directors, but the individual accountant's decisions still carry the final step of actually accepting, executing and forwarding the information based on such decisions and instructions. A possible reason for the lack of accountants reporting on unethical or borderline obscure decisions could be due to the accountants' interactions with senior individuals in an organisation, and also the influence they have on management decisions (Lambert & Sponem, 2012). Management or accounting/financial information that is obtained in an organisation is confidential and cannot be disclosed due confidentiality and non-disclosure clauses in an employee's employment contract. As directors and senior management are under increasing pressure to deliver profits and a positive performance in their financial results, the consequences of framing a situation need to be explored to identify cues where accountants might deviate from their normative ethical decision-making process. It is imperative for leaders and accountants to understand what the potential effects are of framing on the outcome of their decisions and role-model behaviour.

There are many examples of companies that did not apply basic good governance principles. For example, in Sasol's American project, the LCCP, the directors and management in charge of the project were reasonably expected to have been aware of the cost overruns on this project due to their contractual terms and obligation with the construction company. However, the potential framing and non-disclosure to the holding company nearly resulted in the collapse of this blue-chip company in 2020. The accountants received and executed the billing on the project as they received the invoices from the construction company. However, somehow these costs were excluded and not reported. This example highlights that from a business perspective, the framing decision by an accountant might have irreversible negative consequences to an organisation's

survival. Updated by Sasol in 2016, the LCCP's project costs already saw a substantial rise in the initial costs. Sasol's CEO tried to reassure the market by claiming that costs were to remain within the updated target. This type of framing might have had a bearing on the "non-disclosure" aspect when costs started escalating after this market announcement.

1.6 Research Problem

The increasing number of reported business and financial scandals involving the accounting profession, and reported irregularities reflect on the failure of accountants as supposed ethical gatekeepers of the organisations' financial health and wellbeing. Failures of accountants having acted ethically often make the news headlines (Sorensen, Miller, & Cabe, 2017). When accountants do not act ethically in all their decision-making, they fail to deserve or maintain the public's trust. This often leads to investors suffering enormous financial losses (Sorensen et al., 2017) or disinvesting in time from such an organisation. A review of business and financial news over the most recent years reveals a multitude of articles having been written about organisations in crisis, where the management (and the accountants) made potentially unethical decisions. South African organisations that nearly collapsed in the years 2017 to 2019 as a result of unethical decisions having been made include Steinhoff and Tongaat Hulett (The *Citizen*, 2020; Tiisetso & Rumney, 2019). A high-level review was published of these two organisations' decision that resulted in unethical behaviour and led to legal actions.

To add to clarity, in this study, the definition of an accountant refers to someone who has control over or an influence on an organisation's profit and loss (P&L) statement. An accountant's role includes having to be independent and objective in the execution of their duties. They have a fiduciary duty to be ethical in all their dealings, as "integrity" is central to their code of professional conduct (SAICA, 2018). For accountants to be successful in business, it is essential that they make ethical decisions (Zeni, Buckley, Mumford, & Griffith, 2016) at all times. This is not only for the accountant to be successful but ultimately, for the organisation to remain in business, as it would mean companies do not have to go into liquidation, business rescue or retrench employees due to unethical decision that were made.

“While decades of research have furthered the understanding of ethical decision-making, it remains a complex topic with many areas left to explore” (Zeni, Buckley, Mumford, & Griffith, 2016, p. 840). Unethical decisions made by organisations generally involve some form of accounting fraud, irregularity, misstatement or misrepresentation (Tassadaq & Malik, 2015). Such unethical or even illegal actions can take place through various means, including intentionally entered incorrect journal entries or the non-disclosure of material financial facts and information. Such practices are potential factors that can influence stakeholders in their decisions whether to invest in a company. Transactions in financial records have to be approved and processed by accountants in the organisation. In the case of Steinhoff, both sales and asset values were overstated, effectively resulting in the net asset value per share being overstated (Tiisetso & Rumney, 2019). In the case of Tongaat Hulett, the company also inflated its sales and included the sales of land before the transactions were actually concluded (The *Citizen*, 2020). Such misrepresentation is a deliberate attempt to mislead shareholders and investors, as the accountant and/or auditor could have reasonably verified that no such sales had occurred.

Zeni et al. (2016) argue that the process of decision-making is complicated by various elements; these can include uncertainty and volatility in an ever-changing business environment, at both a macro and micro level (Maitland & Sammartino, 2015). The rate of change in the business environment is faster than ever because of the fourth industrial revolution; and the Covid-19 pandemic has increased the levels of uncertainty for both individuals and businesses. These changes affect individuals and organisations, as there will be fundamental power shifts, and the dominance of wealth, knowledge, and competitiveness (Xu, David, & Kim, 2018). The changes cause negative emotional factors such as stress, anxiety, and fear of the unknown, which have the potential to affect an individual or a team’s decision-making capabilities (Kligyte, Connelly, Thiel, & Devenport, 2013).

Framing can be defined as choosing and highlighting specific facets of a topic being considered (Eising, Rasch, & Rozbicka, 2015). The psychological effect of framing – for losses or gains – is important. It has the potential bearing on an individual’s behaviour and actions, and thereby the potential outcome of decisions they are considering. Individuals generally avoid a situation of a potential loss, as it is considered threatening, unwanted and unpleasant (Schindler & Pfattheicher, 2017). Kern and Chugh (2009) argued that an individual’s capacity for ethical decision-making is reduced once the end result is framed

as a loss as opposed to a gain, especially when there are time constraints. There are many facets to consider when deciding whether an accountant is ethical or not, and due to the limited research being published on that topic in the accounting environment, this research focused only on the effect of framing on an accountant's ethical decision-making.

As suggested by Kern and Chugh (2009) in Section 1.4, "the effect of loss-framing on ethical decision-making" was recommended for future study by the four-star journal *Psychological Science* in an article titled "Bounded ethicality: The perils of loss-framing". Thus, this research focused on loss-framing and uncertainty.

Society and organisations rely on accountants and the potential benefits they provide to all stakeholders because they are supposed to be honest, independent and objective. Therefore, the research intends to answer the question as to how likely it would be that framing would change ethical decision-making and whether there is a difference in the ethical behaviour between ethical groups.

1.7 Research Objectives and Purpose

The objectives of the research were to determine the role of uncertainty and loss-framing in ethical decision-making, and how these conditions affect the ability of accountants to make ethical decisions. The inverse situation was also tested, based on the experimental design (gain-framing and certainty). The potential situational bias by accountants can create a deficiency in their decision-making process, resulting in unethical decisions that were not intended (Rees, Tenbrunsel, & Bazerman, 2019). This potential bias was explored through the effect of framing to gain insights into the effect framing has on accountants'.

Accountants have the fiduciary duty to be ethical at all times. They receive extensive education and training in ethics, and the potential conflict of interest in their studies and the examinations they undergo. Therefore, accountants and auditors are perceived as being ethical or having a high moral standing within society (Caglio & Cameran, 2017). However, they are often reluctant to flag ethical issues, as their personal loss could be significant, for example, losing their employment, and having difficulty in securing future employment opportunities if they no longer trust an organisation's ethical processes and

procedures (Alleyne, 2016). Framing will provide the insight into the potential effect it will have on an accountant's ethical decisions.

The research's framing experiment had the following steps:

- First, it determined an individual's ethical positioning. This was done through an independent ethical positioning questionnaire.
- Second, the participants were randomly allocated to the three experimental groups.
    - Group A – Loss-framing and uncertainty scenarios;
    - Group B – Gain-framing and certainty scenarios;
    - Group C – Control group received all questions.

1.8 Research Motivations

Despite the numerous studies on ethics in management, this research study responded to "the rising importance of ethics as a topic central to management scholarship" (Rees et al., 2019, p. 1). As other studies have suggested research be conducted in both the area of uncertainty and loss-framing (Kern & Chugh, 2009; Schindler & Pfattheicher, 2017), this research has combined these two constructs for investigation.

1.9 Definitions of Key Terms

The following key definitions were used throughout this research project:

Financial loss: A loss of resources, which includes income for professional accountants either in their individual capacity or as an anticipated financial loss for the organisation that employs them (Merolla, 2017).

Decision-making: Deciding between two competing alternatives presented to an individual considering their respective impact, and whether this impact is positive or negative (Balleine, 2007).

Loss-framing: Framing of a situation, where the outcome is not beneficial for the participant, implying that they would be in a worse position in the loss-framing situational scenario (Schindler & Pfattheicher, 2017).

Business continuity: An organisation's ability to continue operations for the short term, generally limited to the next 12 months.

Uncertainty: Potential volatility; not being able to predict the outcome with a reasonable level of accuracy or forecast the potential financial impact of an occurrence or event (Jurado, Ludvigson, & Ng, 2015).

Certainty: No volatility; being able to predict the outcome with a reasonable level of accuracy or forecast the potential financial impact of an occurrence or event (Jurado et al., 2015).

Gain-framing: The framing of a situation, where the outcome is beneficial for the participant, implying that they will be in a better position in the gain-framing situational scenario (Schindler & Pfattheicher, 2017).

Ethics: What society considers acceptable, legal and morally correct (Belle, 2017).

CHAPTER 2: THEORY AND LITERATURE REVIEW

2.1 Introduction

Chapter 2 introduces the literature and theories on which this study was based. The research objectives were to enhance the current body of academic knowledge by means of determining the effect of framing of ethical decision-making by integrating related topics to contribute to literature for accountants.

Ethical decision-making can make a person vulnerable and is often influenced by automaticity. Automaticity is an individual's ability to execute a task without consciously applying their mind to the activity. The area of ethical decision-making by individuals is considered a main sub-field for the study of ethics (Rees et al., 2019), and various authors had recommended that future studies should consider testing scenarios where they would limit conditions by framing ethical scenarios, and investigate if loss-framing would result in less ethical behaviour if a decision is required (Kern & Chugh, 2009, p. 383).

O'Fallon and Butterfield (2005) proposed that the concept of business ethics should be split into normative ethics, which deal with moral philosophy, and how people should conduct themselves; and descriptive ethics, which seek to explain and predict individual behaviour. Descriptive ethics are found mainly in business and in the management arena (Donaldson & Dunfee, 1994; Trevino & Weaver, 1994). The focus of this study is on the ethics applied by the accountants, as they fall into the descriptive category of business, and they also form part of management at various levels in an organisation. The concept of business ethics is driven by variables such management's motivation for a decision, the level of accountability, the performance of and financial wellbeing of a company, most of which are linked to the economic situation (Donaldson & Dunfee, 1994).

2.2 Ethical Decision-making

Relevant literature review reveals that there are many ethical decision models. Some models are fundamental, and some are adaptations. This research examined various ethical decision-making models, frameworks and theories that have been covered in various meta-analyses and publications, and are relevant to this research.

Zeni et al. (2016) argue that management is at the centre of decision-making in organisations, and that fundamental decisions have an important ethical component. The wrong decisions made by management can have irrevocable and detrimental effects on an organisation. Short-term, unethical decisions taken by business leaders can have irreversible long-term consequences for such organisations (Fehr et al., 2019). Management is not composed only of senior executives in a company, but exists at every organisational level, and includes junior, senior, top, and executive management. Each of these levels of management has explicit and implicit powers and authority attributed to their respective positions. They also have the ability to influence and frame decisions to achieve a specific personal, departmental, functional, or an overall company objective.

As stated by Schwartz (2016), ethical dilemmas are prevalent irrespective of the extensive training, anonymous whistle-blowing and ethical charters within organisations. This also applies to and is valid and relevant for accountants, as they have access to sensitive financial information that might involve individuals and/or the organisation. Despite having theoretical knowledge of ethical behaviours/dilemmas and the potential consequences, when accountants are challenged with an ethical dilemma, the application of this knowledge seems absent in many cases (see the examples discussed earlier). An accountant might not always make the ethically correct choice for the greater good, as they might be motivated by other factors such self-interest, fear of loss, or hoping for personal gain, or it might be a combination of these factors (West, 2018). A limitation of most theoretical models on ethics is that they cannot consider every potential ethical dilemma. Therefore, it is crucial for an accountant to be adaptable and agile when confronted with ethical dilemmas, and to consider the potential consequences, taking into account all reasonable options. Given the complexity of ethical decision-making models, even though there have been many positive contributions, the results of most studies are inconsistent for a general conclusion, for either quantitative or qualitative studies (Schwartz, 2016). Ethical decision-making models generally allow only for clear ethical or unethical behaviour, which makes it difficult to test for complex ethical dilemmas. The result of not testing complicated ethical dilemmas generally results in a consensus outcome (Schwartz, 2016). Therefore, it was important to test more complex ethical dilemmas such as framing conditions, and this research took an experimental approach to test more complicated ethical scenarios on accountants.

The Rest model is a fundamental ethics model used in ethical decision-making developed by James Rest in 1986. Since then, various improvements, adjustments and recommendations have been made to it. The model is divided into four stages (see Figure 1), with a linear progression from one stage to the next in terms of an individual's ethical behaviour when a decision is made. The four stages include the moral problem, moral decision, moral intention, and moral behaviour (Sorensen et al., 2017). According to the Rest model, these psychological processes should take place sequentially in order to arrive at an ethical decision. The individual must consider the situation and the competing alternatives, consider the impact the decision will have on them as well as on other individuals, and choose the ethically correct alternative. Ethical values should take precedence, and the behaviour should be unwavering (Hartmann, Van Valey, & Fuqua, 2017). Accountants are confronted daily with having to make decisions that have competing priorities, and beneath the decision to be made, an ethical consideration might be present.

This Rest model is a basic ethical decision-making model. It does not indicate factors influencing the respective process at each stage. Given the basic nature of the model, it is a starting point to identify the linear progression of ethical decision-making by accountants. It is potentially beneficial to identify where professional accountants typically deviate from the linear progression. Accountants generally understand the regulatory and legal environment, but improvements in the financial sector's regulatory environment have yielded little success in encouraging ethical behaviour in individuals (Lail, MacGregor, Marcum, & Stuebs, 2017). It is therefore important to understand what precludes accountants from making morally or ethically correct decisions, and whether these decisions are driven by internal or external variables.

Jones (1991) posited that the Rest model can be useful in an organisational environment. In respect to the Rest decision-making model, the two elements that are linked together are moral judgement and moral intent. Studies have been done on whether there is a relationship between an individual's moral intent and the moral judgement. The results were that the two factors or elements are indeed strongly correlated (Barnett & Valentine, 2004; Nguyen & Biderman, 2008). However, it was stated that it was as important to identify that an issue has a moral component. A moral issue is where the action of an individual, carried out independently, may result in a benefit or harm to others (Velasquez & Rostankowski, 1985). The relevance of this model stems from the view that framed

decision-making might have an impact on the individuals in organisations. The individuals will have to identify that there is a moral issue and establish what their moral intent will be. There is limited research on ethics regarding the role of accountants within an organisational setting, and there seemed to be a lack of interest from researchers in the combined perspective of ethics, behaviour within the organisational setting and the decision-making process (Jones, 1991).

Rest Model

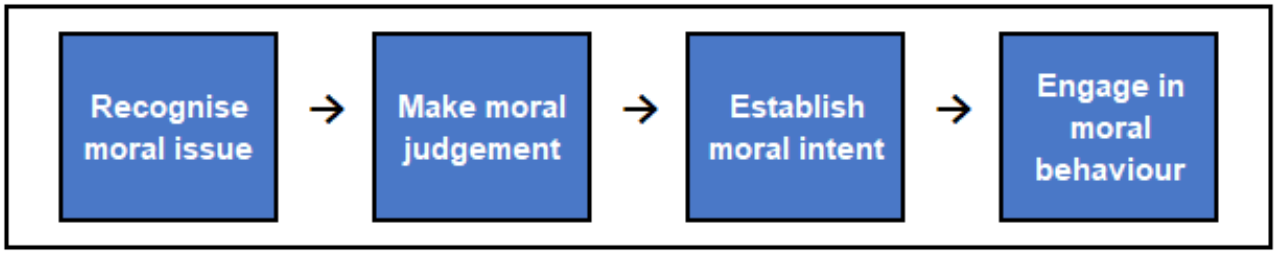

Figure 1: Ethical decision-making process
Source: (Anderson & Burchell, 2019, p. 5)

2.3 Behavioural Economics

The subject of behavioural economics is about how individuals behave in different scenarios and settings. This is tested through various psychological experiments that an individual is exposed to. In turn, it assists in the development of theory models or explanations on how individuals' choices and predispositions influence their decision-making, or whether the decision made results in an ethical decision or not. This integrated subject views the behaviour of individuals through a dual lens, from a psychological and economic perspective. Accountants work in an economic environment and therefore, it is pertinent to understand their decision-making process, whether ethical or unethical in their working environment, as they have to make decisions regularly under complex, uncertain, and sometimes unfavourable conditions. Ethical matters are an inherent part of decision-making faced by professionals and therefore, the integration of ethics by professionals and economics in the business environment are being questioned (De Graaf, 2019).

In the perfect environment, framing or anchoring scenarios or situation would have no bearing on an individual's decision-making. This includes both scenarios, where the decision is ethical or unethical (Samson, 2014). Decisions are made based on various contextual variables such as an individual's environment, personal bias, personal preferences, framing and uncertainty.

An individual can choose to either make a rational or an irrational decision. The theory that supports an individual's rational decision or choice claims that if an individual encounters different alternatives, then an individual will choose the benefit in which their interest is maximised (Mathis & Ariel, 2015). On the other hand, the theory supporting an irrational choice suggests that individuals' real interests can be different from what they are supposed to believe should be their interests; therefore, such choice is not serving their self-interest (Mathis & Ariel, 2015). The concept of rationality and irrationality cannot always be linked to an individual's decision-making process, as this can differ, given the contextual variable that individuals may find themselves in. The falsification of financial reporting can be viewed as a non-rational decision, considering the potential consequences in the long run (McManus, 2018). As accountants are part of the reporting function, this action suggests an irrational behaviour.

Bounded decision-making and choices result in a limitation of the decision-making process (Samson, 2014). Ariely (2008) argued predictable irrational choices from evidence that professional lawyers and doctors have in some form reduced their ethicality. In the case of lawyers, this was the result of the pressure driven by the economic conditions, and the author suggested that the reason for such behaviour was that the consequences for unethical behaviour were not that severe. In the case of doctors who suggested unjustifiable or unnecessary treatments or procedures in an effort to increase their income from their clients (Ariely, 2008). Ariely further argued that this was common practice in most professions, and especially relevant when rules collided with what the market expected it to be (Ariely, 2008). This statement is even more pertinent to the accounting profession, as accountants work directly with market information such as profitability, company valuations and asset value, as the financial information has a material impact on how the market might react to information or misinformation from the gatekeepers.

Unethical behaviour has become more prominent in recent years, or has been more frequently exposed and resulted in legal action against the culprits. Accountants find themselves in the midst of these scandals, sometimes being involved in explicit or implicit complicity in unethical decisions. If accountants were to be aware of framing and its potential effect on their decisions, this might provide them with a better perspective and direction, first to be more aware of the effect framing has on their decision-making, and

second to assist them in rebuilding and restoring a trustworthy image as the gatekeepers and moral pillars of society.

2.4 Bounded Ethicality

The term bounded refers to an instant when an individual is psychologically limited, restricted, or confined in a situation (Chugh & Kern, 2016). Bounded ethicality can also be found under normative ethics, as it relates to the business environments (Kim, Monge, & Strudler, 2015). Various researchers have indicated that an individual's capacity to act ethically is diminished by such psychological limitations (Kim et al., 2015). Chugh and Bazerman (2005) refuted the notions that individuals will act ethically all the time. They claim that unethical behaviour committed on an ad hoc basis is an unavoidable and is prevalent in the business/economic environment that accountants are an important part of.

Kahneman's (2011) work on system thinking argues that from a System 1 perspective, cognitive decision-making is automatic, intuitive and instinctive in contrast to an individual's System 2 thinking, which is a deliberate, slower, and rooted in some form of reasoning. Automaticity, the brain's ability to make decisions automatically, without considering whether the problem is complex or not, can be linked to bounded ethicality as this cognitive process is part of decision-making (Greene & Haidt, 2002). The process of automaticity results in a decision being made automatically without considering the full ethical implications of the decision. An individual's moral instinct paves the way for moral reasoning, where an individual has a predisposition toward using their automatic cognitive process function as opposed to the deliberate thinking process (Haith, 2001). Academics have disagreed with Greene and Haidt (2002) for placing more emphasis on automaticity and reducing the role of moral reasoning (Saltzstein & Kasachkoff, 2004). The researcher agrees with both views; however, the position taken by Greene and Haidt (2002) has been supported in various ethical studies, suggesting that automaticity is indeed a variable in the decision-making process. In addition, in a fast-paced working environment, where decisions need to be made quickly, the researcher's view is that automaticity is a contributor in the decision-making process.

In some scenarios, the bounded situation might be seen as straight forward, as there is no potential personal financial loss to the individual or the business, neither is there an underlying ethical consideration. This might be during the times when companies are

profitable and there is sufficient profitability to write down inventory or impaired assets to their respective market value, and to pay out dividends to shareholders. This can be seen to be similar to a gain-framing situation that will be discussed under the Prospect theory, as the decision of the individual would not be influenced and would likely be an ethical decision. In contrast, when times are tough, and profitability is low, this can be viewed as a loss-framing situation where direct loss or financial impact could arise for the accountant and/or the business. In this case, framing would be as follows: Because of the stock write-down or asset impairment, the consequence is that no profit sharing or bonus are going to be paid, and in this case not only to the accountant but to the entire company. The consequence of this negative framing, coupled with a loss component that the accountant and management are facing on their income potential, might likely result in unethical behaviour.

In the context of the accountants, they have the knowledge, education and therefore the deemed capability to be able to know of and be able to identify unethical behaviour. They also have the power to make the appropriate and correct decision; in addition, they have the moral obligation to their stakeholders to act ethically (Bazerman & Sezer, 2016). The systematic effect and the foreseeable mistakes or intentional unethical actions are linked to the bounded conditions, and individuals are not immune to the effect of framing (Kahneman & Tversky, 1979). This predictive nature of human bias can be linked to behavioural economics on how individuals behave under different conditions, and in different setting or situations (Bazerman & Sezer, 2016).

To further strengthen this position, this study examined the element of bounded awareness. Neisser (1979) illustrated such awareness by using a video, where students were asked to watch a video of players passing a basketball. The students were divided into two groups and had to focus on how many times their allocated group passed the ball around. The students were bounded to only focus on the ball being passed around, and they did not focus on other variables during the time of the experiment. Only 21% of the individuals noticed that a woman walked across the field with an open umbrella while the game was being played (Bazerman & Sezer, 2016). This was a visual experiment, but the importance is equally relevant when a situation is framed, or a task is given to an accountant, and their main focus is on the task in the context in which the task has been described or framed that their awareness to the potential unethical consequences is

reduced. Therefore, important information and consequences might be disregarded as the task on hand will absorb their focus and take precedence.

There are two categories of unethical behaviour or decision-making. The first category is where an individual is fully aware that their decision is unethical, and the second is where an individual is unaware that they have crossed the proverbial rubicon because of their unethical decision (Zhang, Fletcher, Gino, & Bazerman, 2015). When conditions are bounded or framed, then even individuals that have the best intentions could become restricted in their mental capability and alertness, which can result in decisions being made that might be contrary to their ethical norms (Kim et al., 2015).

Kern and Chugh (2009) in their study on bounded ethicality found that people's approach to a loss or a gain differs. They described that when a situation was framed as a gain, then the study's participants were not inclined to cheat or use information at their disposal for self-interest as opposed to when a situation was framed as a loss and this framing resulted in a higher degree of individuals cheating. They found in their experimental study on the effects of framing a situation and the effect it has on ethical decision-making that there was an increase in the decisions being made that led to unethical behaviour and decision-making (Kern & Chugh, 2009).

2.5 Prospect Theory (Loss Aversion)

Prospect theory is a part of behavioural economics, where an individual behaves differently in their decision-making when they are faced with a positive gain or a negative loss (Ganegoda & Folger, 2015). This element of behavioural economics deserved an in-depth consideration for the present study, as it is integral to understanding why individuals deviate from their so-called normal decision-making process when the decision is framed in a particular way, whether framing it as a gain or a loss, which would result in individuals behaving differently to a change in the same situation being asked or tested.

The Prospect theory has been applied for over 40 years. The theory has been developed by leading Israeli physiologists Daniel Kahneman and Amos Tversky. In the development of the theory of loss aversion, the authors provided an alternative theory to the more common Utility theory. The Utility theory argued that the individuals' choice or their decision can be ranked reliably in a numerical way, depending on the individual's

preference (Fishburn, 1968). All individuals have varying preferences on how they ought to be seen or how they would like to behave in an ideal world. However, individuals are confronted with many contextual variables that can blur this intended utopia of how a preference or perception should be. These variables can include one's current situation, a potential future situation, where the risk or uncertainty or loss can play a determining role of how individuals might deviate from their ideal and preferred behaviour.

Prospect theory is where gains and losses are evaluated inversely. Individuals will go through various decision-making processes and reasoning to avoid a potential or real loss, whereas they might be indifferent to a gain. Decisions made under these conditions affect the outcome. Prospect theory is also commonly referred to as the "loss aversion" theory. It posits that if two equivalent alternatives are placed before an individual, one presented as a gain and the other as a potential loss, the individual will select the scenario that results in a gain (Neyse et al., 2020).

The criticism raised against the Prospect theory is questioning whether this theory has the ability to explain the disposition effect. The behaviour of the disposition effect is found under behavioural finance, where individual investors have a tendency to sell shares that have gained in value and keep shares that made a loss (Meng & Weng, 2018). The researcher agrees with the disposition effect under the above conditions. The investor would have already bought the shares and it is part of their current share portfolio reflecting a loss as a result of the decline in the share price. The scenario described above is where an individual is already in the situation where the consequence of a prior decision resulted in a current loss. The disposition effect might have a future bearing on an accountant's ethical behaviour because of the sensitive information the accountants work with. The other two criticisms raised against the Prospect theory is that it lacks real-world examples and does not take into account emotions (Campos-Vazquez & Cuilty, 2014; Rossiter, 2019).

Accountants are often confronted with competing choices. When confronted with a scenario that results in a potential loss, the moral decision of being ethical competes with the individual's self-interest. The Prospect theory gives insights into understanding the tipping point between these two variables. Kahneman and Tversky (1979) argued that the Prospect theory can be used in different settings. Their initial paper focused on the financial outcome of a decision; however, the theory can be extended to areas such as

quality of life or the effect on policy decisions (Kahneman & Tversky, 1979). The extension of testing for this research included the elements of uncertainty and certainty. The hypotheses developed tested loss- and gain-framing, and uncertainty and its inverse certainty. All businesses are continually confronted with varying levels of uncertainty, and particularly during times of economic turbulence or the effect of the Covid-19 pandemic. The decisions that accountants make under conditions of uncertainty will provide further insight on whether these decisions are ethical or not.

In the Prospect theory graph depicted below (Figure 2), it is evident that loss is evaluated negatively by individuals. Tversky and Kahneman (1992) extended the Prospect theory to include uncertainty and risk, because individuals tend to have an adverse attitude towards loss. This can also be linked to uncertainty, as certain variables such as an unstable economy, high unemployment, companies on the brink of liquidation, companies being placed under business rescue, companies operating in a continual loss-making situation and not returning to profitability can result in decisions that individuals make under these uncertain scenarios to be unethical. These challenging situations can have the potential of future financial loss for the individual, which might include the individual becoming unemployed due to uncertainty of the company's future existence. This can be considered as a potential loss the accountant is facing.

However, there is no clear evidence as to how accountants will behave when faced with potential financial loss and how they would react if such situation were to be framed negatively. Therefore, the researcher propose that accountants will lean more towards the potential effect of the Prospect theory.

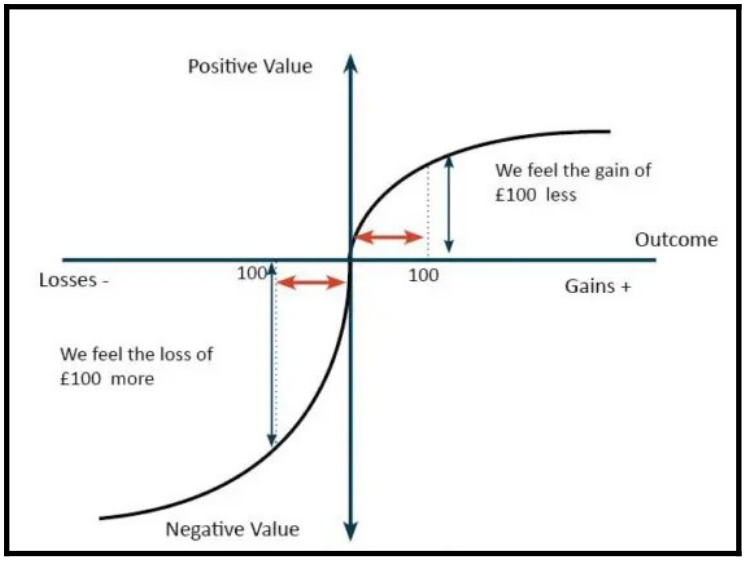

Figure 2: Prospect theory

Source: www.economicshelp.org (Pettinger, 2018)

2.6 Certainty and Uncertainty

As indicated above, uncertainty can be considered a sub-element of the Prospect theory (Tversky & Kahneman, 1992). Decisions frequently have to be made under uncertain circumstances, and understanding the role of uncertainty in individual's decision-making process is important when one tries to establish the causes for unethical behaviour. Certainty can be defined as the conviction or belief that something is going to happen and there is a reasonable level of confidence of the outcome. Uncertainty can be defined as not being sure whether something is going to happen, and where the level of doubt is elevated due to the unknown factors playing a role.

The Rational and Irrational theory debated under Section 2.3, Bounded Ethicality discussed in Section 2.4, and the Prospect theory presented in Section 2.5 are all relevant constructs for uncertainty. Bearing these constructs in mind and the literature that covered uncertainty and certainty, these elements will be explored a little further. The business landscape in which accountants operate is highly competitive, and the environment can sometimes be ambiguous and uncertain. Companies need to remain relevant and agile in an ever-changing business landscape. The pressures and expectations resting on the business leaders is to deliver solid growth, be it product volume growth or financial profitability growth. These constitute some of the key matrix that companies are measured against by their stakeholders, and especially their shareholders, who have a vested financial interest in the organisation. Therefore, the environment in which companies

operate cannot escape a high level of uncertainty, which raise the following questions: Will the company still be in operation? Will the company still be profitable? Will it be able to pay returns to shareholders in the form of dividends? Uncertainty is considered as an inherent part of life and of science, no matter the form or nature (Zadeh, 2007). This includes the business environment. Uncertainty entails the inability to predict outcomes and the potential impact these events might have, events which might include forecasting, business survival, and an economic downturn (Jurado et al., 2015). The decisions made by business leaders are quantified and processed by an accountant, taking into account the financial perspective; however, the extent or the degree of uncertainty attached to various decisions will differ.

Uncertainty is increasingly prevalent in the current environment, where the economy is in turbulence after the effects of the Covid-19 pandemic, and this has a severe impact on the business environment. Accountants are constantly confronted with this new reality. Therefore, it is important that accountants are cognisant of this inherent systematic variable within their environment, having to learn to understand the implications, and become comfortable with it. Difficult and complicated decisions have to be made regularly by employees where the employee is faced with challenges such as competing goals and objectives, high stress situations, uncertainty and vague information that is sometimes incorrect or where the true context of information is absent (Alison, Power, Van Den Heuvel, & Waring, 2015). The taxonomy of uncertainty is divided into two segments: objective and subjective uncertainty. If one examines the difference between these two constructs, then objective uncertainty can be explained as being based on knowledge or rationality, while subjective uncertainty is based on moral or rule uncertainty (Tannert, Elvers, & Jandrig, 2007). This research focused only on subjective uncertainty. Decisions made are often complex, critical to the business, made under intense pressure, high levels of uncertainty and competing objectives.

The Hofstede model measured different cultural facets for a respective country on the inhabitants of that country. The dimension this study considered was uncertainty avoidance. This dimension of the Hofstede model categorises a society on how it deals with uncertainty and the future (Jang, Shen, Allen, & Zhang, 2018). When measuring uncertainty avoidance through the Hofstede cultural dimensions model, South Africa scores relatively low at around 49% out of 100% for uncertainty avoidance. For the South African society, this means that most of South Africa's citizens do not fear or try to avoid

uncertainty. Psychologist have identified that uncertainty elevates different levels of fear and anxiety in different cultures. Therefore, from a national perspective, South Africa's citizens seem to embrace uncertainty. However, this only looks at this dimension on a national level and has not been analysed on a sub-level such as the different ethnic or culture groups within the country or even different professional groups that might deviate from the national norm.

According to Jang et al. (2018), a common feature of uncertainty avoidance is to infer an individual perspective as a societal perspective. This consideration might not be relevant to all individuals, as individual environments and situations might differ from what is reflected upon from a societal perspective. Accountants' individual perspectives might therefore differ from those of the national views, particularly in their working environment, because accountants are deemed to or "should be" acting in the interest of society and not in their self-interest. It can further be argued that most accountants are considered to be risk averse and sensitive to uncertainty (Hoitash, Hoitash, & Kurt, 2016).

In Figure 3 below, taxonomy of uncertainties in decision-making presents various types of uncertainty, which fall under either objective or subjective uncertainty. The study focused on subjective uncertainty, as accountants were assumed to be a moral compass for organisations, firms, and institutions. Accountants are the gatekeepers for businesses to behave morally (Melé, Rosanas, & Fontrodona, 2017). Therefore, the study focused on subjective uncertainty in terms of both moral and rule uncertainty. Moral uncertainty relates to moral decision-making, which can be linked to moral reasoning. Rule uncertainty, which is relevant to this study, is intuition guided, and intuitive decisions can have ethical implications. Wheatley and Haidt (2005) linked ethical decision-making and intuitive decision-making. Intuition can be defined as a form of automaticity, as reasoning is absent.

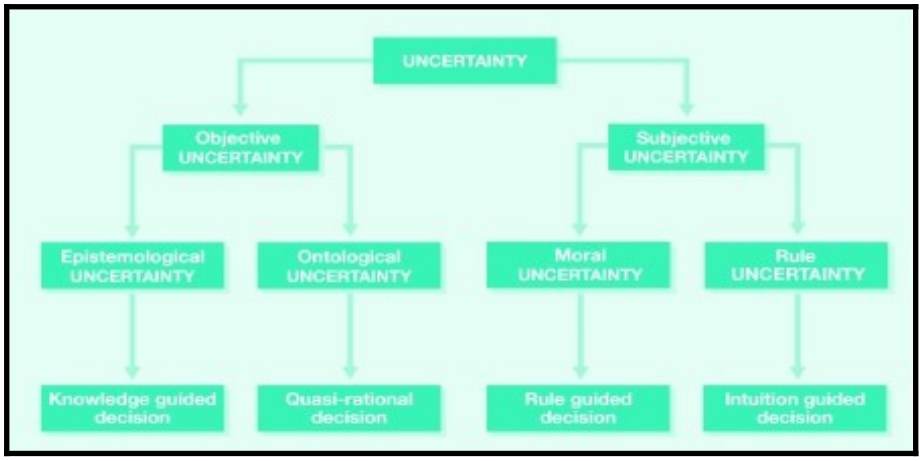

Figure 3: The taxonomy of uncertainties and decisions
Source: (Tannert et al., 2007, p. 3)

What had not yet been researched was how accountants reacted to situations that were framed as being uncertain and how it affected their ethical decision-making. This also raised other questions: How will the risk-averse nature of accountants affect their uncertainty avoidance level? Will this effect be similar to that of the total South African society who do not seem to fear uncertainty? The researcher assumed that accountants would lean more towards the Prospect theory regarding the uncertainty perspective, as uncertainty means that the likelihood of potential loss appears greater than that of gains, and accountants might be more alert or sensitised to uncertainty.

2.7 Ethical Positioning Questionnaire (EPQ)

The EPQ is an integral part of this research that aimed to determine how applicable the instrument is in the context of accountants, and its predictability or ability to differentiate ethical behaviour in framed scenarios. The differences in individual ethical philosophy were deemed as having a bearing on an individual's ethical decision-making (Davis, Andersen, & Curtis, 2001). Forsyth, the author of the EPQ instrument, argued that the concepts idealism and relativism have the capability of prudently depicting an individual's different moral viewpoint (Forsyth, 1980, 1992). This research aimed to establish if there was a difference in ethical behaviour between groups.

The EPQ is a tool that assists in understanding the differences in individuals' ethical decision-making; however, it has been critiqued for having a weak control of relativism and for validity (Davis et al., 2001). However, the instruments have been used in multiple

studies over the years and the results confirm the potential predictability of individuals' ethical taxonomy.

Table 1: Taxonomy of individuals' personal moral philosophy

Ideology	Dimension	Approach to moral judgement
Situationists	High relativism High idealism	Reject moral rules; ask if the action yielded the best possible outcome in the given situation.
Subjectivists	High relativism Low relativism	Reject moral rules; base moral judgement on personal feelings about the action and the setting.
Absolutists	Low relativism High idealism	Feel actions are moral provided they yield positive consequences through conformity to moral rules.
Exceptionists	Low relativism Low idealism	Feel conformity to moral rules is desirable, but exceptions to these rules are often permissible.

Source: Forsyth (1992, p. 462)

The ethical positioning questionnaire's two main constructs are defined as idealism at a high level, where individuals that are high on this ranking try mostly to circumvent harm by believing in a positive outcome. Relativism is inclined to reject the universal morals (Davis et al., 2001). The study incorporated the EPQ questionnaire to assist in differentiating between individuals categorised into different taxonomy of personal moral philosophy confronted with the same decisions (limited to absolutists and situationists). It aimed to determine whether a correlation existed between ethical or unethical decisions made by accountants and their taxonomy (absolutists and situationists).

The definitions of the personal moral philosophy taxonomy are shown in Table 1 above for all categories. Additional consideration was given to absolutists and situationists. Absolutists are individuals who rank low on relativism and high on idealism. These individuals favour behaviours that have a positive outcome, and moral compliance is important to them (Demirtas, 2015). Situationists score high on both relativism and idealism. These individuals tend to reject core principles depending on whether the situation will offer the best outcome (Demirtas, 2015). The rationale for adding the personal moral philosophy taxonomy and testing it on complex ethical decision-making was to investigate if accountants who adhere to a different moral philosophy will behave differently regarding ethical choices. Not many studied has been conducted on ethical dilemmas in business using the EPQ instrument (Alexander, Al-Khatib, Al-Habib, Bogari,

& Salamah, 2019). Considering the business environment and the fact that accountants are an integral part of this environment where most fraud and financial misstatements are often of an accounting nature, the researcher deemed the EQP to be an appropriate addition in this investigation.

A study conducted on ethical decision-making among marketing professionals revealed that the decisions differed according to the individuals' ethical ideology (Barnett, Bass, Brown, & Hebert, 1998). Therefore, as accountants are professionals in the field of accountancy, it is relevant to test this aspect among accountants to determine if ethical decision-making can be differentiated according to individuals' ethical ideology. So far, no research had been conducted yet that established if accountants categorised in a different moral philosophy taxonomy would yield a different ethical behaviour when confronted with ethical dilemmas. The researcher assumed that accountants are likely to have different approaches to ethical decision-making, based on their taxonomy of moral philosophy and limited to being classified as absolutists and situationists.

2.8 Kohlberg's Stages of Moral Development

The capacity for an individual to think at one level does not necessarily translate to an individual using that level of cognitive decision-making when confronted with a decision that demands ethical decision-making. Kohlberg identified three categories of ethical decision-making: pre-conventional, conventional, and post-conventional (Palmes & Demeterio, 2015). Individuals at the higher levels of ethical decision-making are able to deal with ethical dilemmas better than those at lower levels (Iqbal & Sholihin, 2019). As depicted in Figure 4 below, the pre-conventional category comprises two sub-categories, which include punishment and relativist orientation. This refers generally to the situation where an individual's behaviour is related to their own best interest or how an individual is expected to behave (Kohlberg & Hersh, 1977). The convention category also has two sub-categories, which are interpersonal, or rule or law guided, where an individual lives up to the expectation of the community and general norm, and adheres to laws and rules (Kohlberg & Hersh, 1977). The post-conventional category is seen as the higher level of cognitive moral development beyond the first layer, where an individual transcends the normative believe of what is good and bad, and views situations and challenges objectively and independently (Kohlberg & Hersh, 1977). The final stage in the post-

conventional category is where an individual moves to a universal ethical philosophy of what is good or bad (Kohlberg & Hersh, 1977).

An individual's capacity for rational decision-making and rationality is argued to be the foundation of a person's motive or intent to act ethically (Iqbal & Sholihin, 2019). However, the concept of rationality and irrationality cannot always be linked to an individual's decision-making behaviour or whether they will make an ethical decision, because contextual or other variables might influence an individual's decision-making at the time the decision has to be made. Cognitive moral development indicates people's progression to higher levels in their ethical decision-making (Sorensen et al., 2017). However, even as people move to higher cognitive moral development stages, it can be argued that they do not base all their decisions on such higher level, as an individual's situations and contexts evolve and change over time (Giammarco, 2016). It will be difficult to determine where accountants rank on the cognitive moral development levels, as the theory is based on individuals' progress on moral development over time. Even though accountants receive extensive education and training on ethics, social norms, laws, and regulations that might have a bearing on their ethical behaviour, it will be difficult to determine where the majority of accountants fall on the level of moral development stages, and this will warrant a separate future study.

Kohlberg assumed that people are fundamentally good, and does not consider other human inclinations such as self-interest, anger, deception and exploitation (Vitz, 1994). One of the biggest criticisms against the Kohlberg model is that the samples were not representative, and generalisability was not possible (Giammarco, 2016; Gilligan, 1982). Haith (2001) held a different view regarding Kohlberg's rationalist approach. His perspective was that ethical choices are based on perception and moral intuition. The Kohlberg model did not consider factors that influence decision-making, even though the theory was widely referred to, it would not provide a solid foundation for this study.

As factors such as the effect of framing might have an influence on ethical choices made by accountants, this was the foundation for this research. Therefore, determining accountants' moral development based on the Kohlberg theory was beyond the scope of this research and the main constructs.

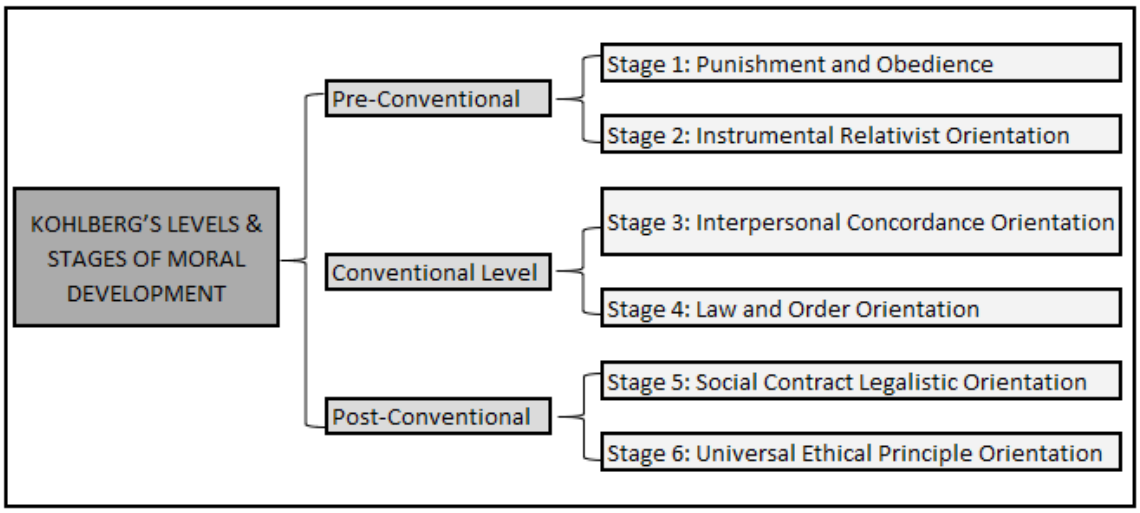

Figure 4: Kohlberg's levels and stages of moral development

Source: (Palmes & Demeterio, 2015, p. 108)

2.9 An Integrated Approach on Ethical Decision-making

The integrated decision-making model uses the Rest decision-making model as a base, and is aimed at integrating ethical consciousness with other elements that have a bearing on the ethical choices (Schwartz, 2016). By using this integrated model, this research intends to look at ethical decision-making from a broader and more holistic perspective. The two influencing aspects considered in the process of decision-making were an individual's situational context, and their ethical capacity or capability (Schwartz, 2016).

This model integrates the situational factors and an individual accountant's moral ability when they encounter loss-framing and uncertainty. These variables will have a potential bearing on the accountant's awareness, which includes their emotions, intuition and their reasoning, resulting in a potential influence on their ethical judgement and ultimately the decision that is made (Schwartz, 2016).

The study will have to establish how situational factors such as issue or problem, organisational pressure, and potential personal financial loss or negatively framed situations will have on an accountant's ethical decisions. The researcher hypothesised that situational issues could likely influence ethical decision-making by accountants.

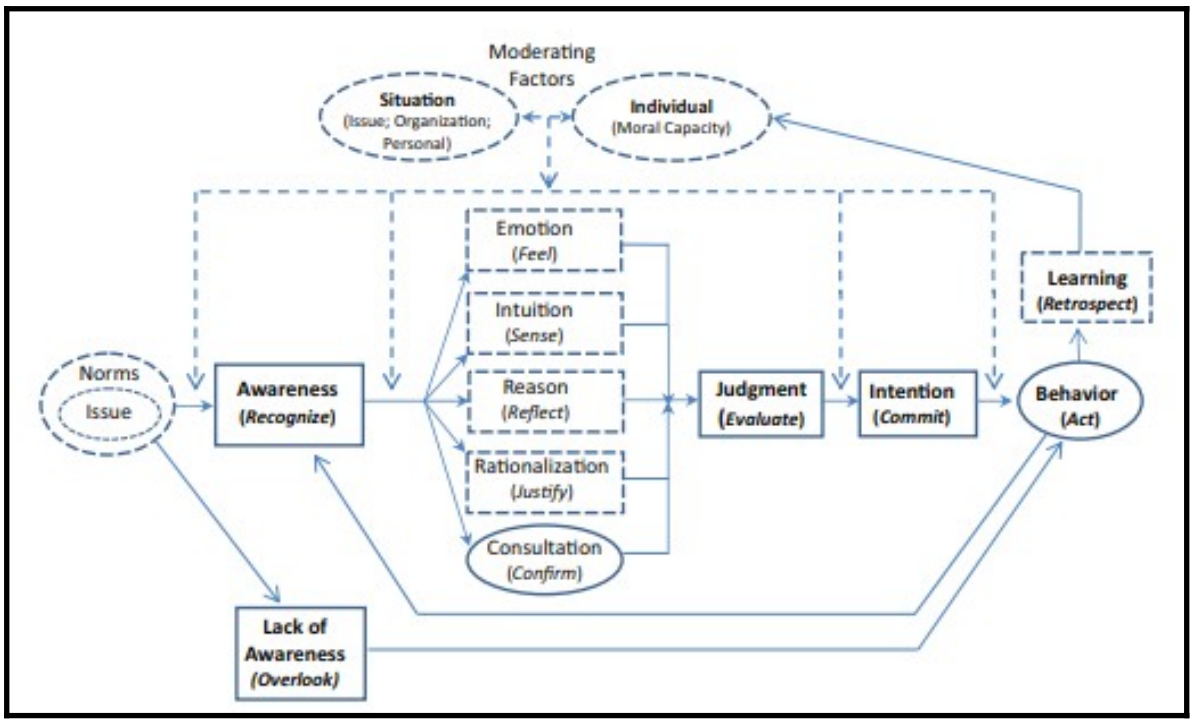

Figure 5: Ethical decision-making theory: An integrated approach

Source: (Schwartz, 2016, p. 761)

2.10 Conclusion of Literature Review

The review and discussion of literature included in this chapter provides a theoretical foundation that supports this research. The researcher reviewed the foundational thinking established in the 1980s to assess individuals' ethical choices (Sorensen et al., 2017). The review focused on an individual's ability to identify potential moral issues before moving through a linear progression to making an ethical choice. Ethical decisions are not made in isolation, as there are many internal and external variables the decision-maker has to consider that might have an influence on the outcome. This researcher used an integrated approach due to the nature of framing and considered literature that was relevant to the framing construct.

The literature supported the Prospect theory, which posited that individuals prefer gains to losses, which include uncertainty and risk. Individuals were not always seen as rational beings due to various factors, including the effect of bounding conditions and limitations in given situations. Such circumstances could reduce an individual's reasoning, rationalisation and justification of the choices made, and the final choice. Literature supported the importance of a study to be conducted on framing to investigate if an accountant's self-interest would take precedence over an ethical decision being made. The constructs of moral reasoning and automaticity were also debated and their relevance

in ethical decision-making. The literature was ambiguous regarding the impact of uncertainty in the South African context, given that the South African culture has a low level of uncertainty avoidance, which indicates that society embraces uncertainty. Examining a framing effect on uncertainty will provide a better understanding on how professional accountants make ethical decisions under conditions of uncertainty. The research was linked to an individual's taxonomy of personal moral philosophy (absolutists and situationists) to determine if ethical decision-making can differentiate between groups (absolutists and situationists) in their decisions. The literature was the foundation in determining the hypothesis that was tested in this research, which is contained in following chapter.

CHAPTER 3: HYPOTHESES

3.1 Introduction

Hypotheses has been developed for this experimental research in order to test existing literature and theories that have been covered in Chapter 2. The research aim was to test the role of framing on an accountant's ethical decision-making. The main purpose of the study was to obtain an understanding of the effect framing scenarios have on accountants, and the bearing they might have on their decision-making. The purpose was also to test whether the outcome of such decision will be ethical or unethical, and to test the EPQ taxonomy of individuals' moral philosophy, thereby determining if individuals' decision-making would differ (absolutists and situationists). To achieve the answers to the study aims and questions, a number of hypotheses were developed for this study.

3.2 Theory

Framing and its effects is traced back to Tversky and Kahneman (1981). They stated that the way in which alternatives are framed has a bearing on individuals' ethical behaviours. Therefore, the framing for the study was broadened to include the potential effect of framing that accountants can be expected to encounter in their working environment. The framing scenarios for this study therefore included loss-framing, gain-framing, uncertainty and certainty in the accountants' working environment. Uncertainty in the decision-making process has been identified as an independent subject (Alison et al., 2015). In the context of accountants, this fact is relevant, as accountants usually work in uncertain environments, and the effect that uncertainty has on their decision-making process is both relevant and needs to be understood. Therefore, these constructs were added in testing bounded ethicality in environments of uncertainty and certainty. The testing of bound conditions, and especially the effect of framing on ethical behaviour, was chosen to test whether loss-framing was likely to reduce ethical behaviour (Kern & Chugh, 2009).

The research hypotheses were formulated as follows:

H1 – Ethical decision-making is affected by framing a situation as either positive or negative.

H2 – The higher the level of uncertainty, the less ethical individuals become (the relationship is inverse).

H3 – The perceived likelihood of financial loss results in an increase in unethical decision-making (the relationship is dependent on the financial aspect).

H4 – Taxonomy of personal moral philosophy can predict an individual's ethical behaviour (limited to absolutists and situationists).

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

This chapter presents the research methodology for this study. The rationale and the foundation of the methodology are explained below. The following structure was followed for this chapter:

Section:	Title
4.1	Research Scope
4.2	Research Design
4.3	Research Methodology
4.4	Population
4.5	Unit of Analysis
4.6	Sample and Sample method
4.7	Measurement instrument
4.8	Data Collection
4.9	Data analysis
4.10	Data reliability and validity
4.11	Research Limitations

The literature review established the reason for the study and its relevance. The focal point of this study, as supported by academic literature, was the influence of loss-framing and uncertainty on ethical decision-making by accountants. This research combined various theories and models to accomplish the experimental study's aims and objectives. The premise for both the research design and the research methodology have been built on these findings. Choosing a research methodology that is most suitable for the research is crucial for a coherent research design (Saunders, Lewis, & Thornhill, 2016).

4.1 Research Scope

The research was limited to the influence of framing on ethical decisions made by accountants. The justification for the study was provided in Section 1.8.

4.2 Research Design

The previous chapters explained the main focus of this experimental research, is determining the role of framing, in this case referring to loss-framing and uncertainty, on ethical decisions made by individuals. The reason for such focus was to determine if an individual's ethical behaviour changes when conditions are framed in a certain manner. Previous research had been conducted on ethical decision-making, uncertainty and loss-

framing through various methods focusing on different components. These methods included experiments, computer simulations, and questionnaires (Kern & Chugh, 2009; Schindler & Pfattheicher, 2017; Starcke & Brand, 2016). An experimental method was considered appropriate for this research, as it addresses the research hypotheses by examining the effect of framing on an individual's decisions. Framing circumstances as positive or negative, and the higher the level of uncertainty, the less ethical individuals tend to become (the relationship is inverse), and the perceived likelihood of financial loss can result in an increase in unethical decision-making (the relationship is dependent on the financial aspect). Testing the taxonomy of personal moral philosophy can predict an individual's ethical behaviour (limited to absolutists and situationists). Assessing the effect of framing and determining if relationships exist, and if there is a likely difference in ethical behaviour was part of the research to provide insights into accountants' decision-making process. The study examined the links between variables, determining if the scenarios where manipulation took place would result in a change to the dependent variable (an ethical or unethical decision) (Saunders & Lewis, 2018). The data was gathered through the use of an experimental questionnaire (Saunders & Lewis, 2018). An online experiment was administered through a questionnaire to the selected sample population.

4.2.1 The experimental design

The study was an experiment that gathered data through an online questionnaire. The researcher split the total sample into three different experimental groups, and participants were allocated randomly. The intervention to this experimental questionnaire was the coding in the background of the questionnaire to ensure that participants were randomly allocated, to either group 1, 2 or 3. When a participant clicked on the link to the questionnaire, the computer coding generated a unique number between one and three; the participant then had to enter this number before proceeding with the questionnaire. The participants and the researcher did not know which group an individual had been assigned to.

Experimental groups

Group A – Loss-framing and uncertainty scenarios

Group B – Gain-framing and certainty scenarios

Group C – Control group received all questions (this was to add validity to the study and compare results with groups A and B)

The experiment was designed in this way to add internal validity to the experiment.

The research design was considered to be appropriate, as it allowed the researcher to achieve the following:

- Enabling the researcher to manipulate the independent variable (Saunders & Lewis, 2018). This was achieved by grouping the participants in a specific group and allowing them to answer the questions of gains-framing and certainty, and then manipulating those questions for the other groups to answer the aspects of loss-framing and uncertainty.
- The ability to envisage the possible likelihood of occurrence during this experiment (Saunders & Lewis, 2018).
- To observe the effect of the independent variable on the dependent variable (Saunders & Lewis, 2018).
- To strengthen the internal validity as the experiment was assigned randomly to participants or the experimental groups (Leighton, 2010).

4.3 Research Methodology

The study was designed with the intent to either explain links and/or the likelihood of the effect framing has on an accountant's ethical decision-making process, by focusing on a link between the independent and the dependent variable have as per the hypotheses. Positivist research involves the use of existing theories to develop hypotheses (Saunders & Lewis, 2018). This research project was classified as positivist in nature, as the researcher used a highly structured methodology, a questionnaire, to enable the study, while an interpretivist method was not used as it makes use of unstructured interview questions.

This study incorporated existing theory on ethical decision-making, loss-framing, uncertainty and the taxonomy of personal moral philosophy to assist in studying the

construct of ethical decision-making. Existing theories and models based in literature on ethical decision-making had been tested in situations of both uncertainty and certainty. The research also tested the impact of framing either as a loss or a gain scenario on ethical decision-making, and searched for relationships between the constructs.

The research approach was a deductive approach. This comprised of testing various academic/theoretical propositions by making theory the base to test the hypotheses (Locke, 2007). The gathering of data through the empirical approach was executed through a quantitative method, which meant that it tested theory based on the literature, by using statistical methods to explain the differences or relationships (Warner & Allen, 2018). Thus, positivist research was appropriate for this experimental quantitative study (Burton-Jones & Lee, 2017).

Explanatory research refers to a research design that uses data to explain relationships between variables (Petzer, 2020). Research pursuing different insights, asking new or different questions', and evaluating a topic or several topics from a different viewpoint (Saunders & Lewis, 2018) is also referred to as explanatory research. The researcher developed new scenario-based questions, specifically focusing on framing and uncertainty in accountants' working environment, which will have a hypothetical financial implication on the accountants' organisation or on the individual accountant.

According to Lee, Inceoglu, Hauser, and Greene (2020), the rationale for experimental research is the researcher wanting to investigate if causal relationships or a correlation exist. The difference between the two is that causation is due to or the result of either directly or indirectly, in contrast correlation, determines a relationship, and the direction and strength of a relationship (Liebetrau, 2015). This study focused only on correlations to determine relationships between the constructs. The quantitative research used only one data gathering technique, which was a questionnaire in a mono-method quantitative study (Saunders & Lewis, 2018). The questionnaire was scenario-based, and was completed once by the participants. Each participant only completed the randomly allocated questionnaire that appeared when they entered the link with their respective unique number of one, two or three. Given the limitations caused by the constraint on time and resources, this was the most pragmatic approach for this study.

In using a cross-sectional research method, the researcher gathered data from individuals once-off, referred to as a ‘snapshot’ (Saunders & Lewis, 2018). The questionnaire was designed to prove or disprove the research hypotheses, keeping in mind the method in which the data was gathered, presented, and evaluated. The experimental questionnaires were staggered. For example, questions on ethics positioning through the EPQ were asked to determine whether an individual should be classified as being either absolutists or situationists, before continuing to the situational ethics questions, where the hypotheses were tested.

4.4 Population

Accountants, working in any sector or industry, made up the population for this research. The focus was on this homogeneous group as accountants have a fiduciary duty to the companies or organisations they serve, as well as all their stakeholders, and they are frequently confronted with difficult, ambiguous, and uncertain situations when making specific decisions, including how situations are framed.

4.5 Unit of Analysis

The person, object, or element the researcher used to collect data from is described as the unit of analysis (Kumar, 2018). The unit that was examined for this study consisted of accountants with work experience, those who have or are still controlling a P&L statement. Various framing situational scenarios were asked in the questionnaire to determine the effect on the participants’ ethical decisions.

4.6 Sample and Sampling Method

Non-probability sampling was appropriate of this experiment, due to it being impracticable to obtain and draw a random sample of all accountants working in South Africa, given the scope and resources allocated to this project. The data was gathered from this sample of the population of accountants, and the results were extrapolated to determine the decision-making behaviour of accountants (Saunders & Lewis, 2018). The participants were approached via personalised email to the participants; through social media platforms such as LinkedIn and through WhatsApp as this increased the ease of completion of the questionnaire.

Studies using similar methodologies were considered to provide guidance on an appropriate sample size for the experimental study. “Research on ethical decision-making in the face of temptation by Cianci, Hannah, Roberts, and Tsakumis (2014)”, used a sample of 118 participants. Another study on the “perceived crowding and non-crowding behavioural intention of restaurant customers” used a sample size of 120 participants, 60 individuals for two groups, where each participant was exposed to different conditions (Pather, 2018, p. 1). A further study on the ethical standards of judgement, conducted by a three-star journal, sampled 301 individuals (Love, Salinas, & Rotman, 2020).

Based on these studies, and given the limited resources and time constraints, the researcher achieved an overall sample size of 167 participants, which is considered sufficient, with the lowest number of participants of 54 in the gain-framing group. As the sample consisted of a homogeneous group of accountants, and various statistical analyses were possible to be conducted, the sample size per group of 54 was considered to be large enough. A related study on bounded ethicality performed by *Business Ethics Quarterly* used a sample of 100 participants, which further supported the sample size selection (Kim et al., 2015). Although there are more complex formulae available for calculating optimal sample sizes, the rule generally states that a minimum of 50 participants is required to perform correlations. This number should increase proportionately with the number of independent variables present (VanVoorhis & Morgan, 2007). The present study tested whether a correlation exists between ethical decision-making under conditions of certainty, uncertainty, loss-framing, gain-framing and an individual’s taxonomy of personal moral philosophy.

4.7 Measurement Instrument

This study made use of a self-administered online questionnaire. The participants in this study completed the questionnaire, comprising situational questions, on their own (Petzer, 2020). An introduction to the questionnaire was provided, explaining the aim and purpose of the research project. The introduction clarified that participation was voluntary, and that responses were treated with confidentiality and anonymity, since this was a quantitative study and anonymity was provided to the participants through not requesting participants’ names or any other personal details that could have linked the individual to the experimental questionnaire. In addition, all data are reported and presented in aggregated format; therefore, there were no individual identifiers of any participants. Finally, the data

was protected through password control, and stored in the researcher's digital safety vault, where the McAfee security software allowed individuals to create a safety vault to store sensitive information.

The introduction set out the duration of the questionnaire completion, and information on how to reach the supervisor or the researcher was provided. The consent selection was also completed by participants, as this was mandatory before participants proceeded to complete the experimental questionnaire. There were seven and nine sections to the questionnaire, depending on which experimental group the participant participated in, while the control group had to complete all the questions, and therefore the longer experiment.

Section A contained the qualifying questions to determine whether the individual belongs to the homogenous group. The qualifying question was: Are you an accountant?

Section B collected the demographic information from the participants. This included age, gender, race, educational level, and work experience.

Section C determined the participants' ethical positioning, through the Ethical Positioning Questionnaire (Forsyth, 1980).

Section D comprised the various situational scenarios (ethical scenarios under conditions of uncertainty). The scenarios were designed specifically for accountants and were explained in the introduction to the questions. For example:

> "You are the Chief Financial Officer/Finance Manager. Imagine that your company is currently experiencing extremely volatile times, the financial position is weak and there is high level of uncertainty that the company will be in operation in the next 6 months. To compound the already dire situation, one of the subsidiaries has seen a material decline in demand for its products and requires an impairment to reflect the true asset value of its operation.
>
> *Your analysis suggests that should the impairment be posted, there is a 90% chance that the business will go into business rescue. How likely are you to process the journal? (1 very unlikely, 5 very likely)*

Section E contained the loss-framing ethical questions. The format is similar to section D above.

Section F tested the basic Prospect theory.

Section G tested the individuals' response to a real simulated situation to see what the majority of the individuals would recommend under this scenario.

Section H and I tested the inverse certainty and gain-framing scenarios.

4.8 Data Collection

A pilot study was conducted among 10 selected participants. The pilot questionnaire data was excluded from the final sample. After the pilot experimental dry-run was completed, the data from the pilot study was deleted and cleared. Pilot testing ensured that the questionnaire was complete (free of error and in working condition) and questions were tested for their ease of comprehension before the final questionnaire was distributed. During the pilot, the issues that were identified were that the questionnaire was not properly copied into the Consulta online platform. The researcher used an external service provider, Consulta, due to their flexibility and ability to code the questionnaire in the background to ensure random allocation of the questionnaire and validity through randomness. This was not possible with Google Forms or SurveyMonkey. Various sections also did not pull through correctly for the respective experimental groups A, B, C (loss-framing, gain-framing and the control group). After receiving the data and the feedback, the researcher and Consulta checked and validated that all errors were corrected and cleared before publishing the questionnaire.

The experimental questionnaire was distributed electronically via WhatsApp, email, and LinkedIn. The questionnaire was distributed and completed through Consulta's online web-based platform, which made it easy to share the link to the questionnaire on various platforms. When participants clicked on the link, they were taken to the introduction to the questionnaire. This was followed by a qualifying question to determine whether they met the criteria to proceed with the questionnaire. The questionnaire comprised pre-coded, closed questions, with drop-down options.

4.9 Data Analysis

The following section introduces the analysis and various techniques used in the experiment. Version 26 of the Statistical Package for Social Sciences (SPSS) was the primary tool used, which is an IBM application. The researcher also used the multivariate software in testing the factor structure of an existing EPQ instrument used in the study. Excel was utilised in cleaning the raw information and for coding all data before importing it into SPSS.

Wegner (2016) describes four different scales of measurement: ratio, interval, nominal and ordinal. The Likert scale was mostly used in the questionnaire, with a few questions using a nominal scale (in this case yes or no), which includes the ethical scenario questions (1 = very unlikely to 5 = very likely) and ethical positioning questions (1 = disagree strongly to 5 = agree strongly). Interval data was generated when using a rating scale to answer questions (Wegner, 2016). Questionnaire responses received were either ordinal or nominal data. Ordinal data have inherent numerical properties as opposed to nominal data (Wegner, 2016). Numerical order was assigned for data analysis. Coding was performed on both ordinal and nominal data before conducting statistical analysis.

4.9.1 Manipulation check

A manipulation check was conducted on the scenarios the participant received, and using a Likert-type scale, where 1 = uncertain and 5 = very certain. According to Hauser, Ellsworth, and Gonzalez (2018), manipulation assessments is a mandatory step to confirm that the independent variables have been sufficiently changed. It also assists in surveys and experiments to filter out participants who completed the experiment without properly reading the questions (Kung, Kwok, & Brown, 2018). This was an important addition for this experiment, because it asked lengthy scenario-based questions.

4.9.2 Descriptive statistics

A description of various basic features was provided from summarising the data such as valid responses, nationality, gender, age, race, managerial level, education, work experience, and the experimental groups (loss-framing, gain-framing, and the control group).

4.9.3 Test for normality

The Kolmogorov-Smirnov[a] test and the Shapiro-Wilk test were used to test if the data in the questionnaire was normally distributed. The two tests are appropriate if data is not

normally distributed and is referred to as a non-parametric test. The Kolmogorov-Smirnov[a] is appropriate for samples sizes greater than 50, and this was done per experimental group, while the Shapiro-Wilk is appropriate for a sample of less than 50 participants, which is for results within an experimental group (Rani Das, 2016).

4.9.4 Means and mode test

An interval/scale measure, using an arbitrary scale, was used to calculate a mean in order to measure abstract properties (Petzer, 2020). In the various ethical scenarios, the loss-framing, gain-framing, certainty, uncertainty, and in the EPQ the researcher was able to determine whether the mean answers were likely to differ in the different scenarios and between different groups on the EPQ (absolutists vs. situationists). The mode was also used to determine the most common answers that appeared the most in a set of data.

4.9.5 Mann Whitney U test

The Mann Whitney U test was done to test for differences in the data sets in the experiment study (MacFarland & Yates, 2016). This is a non-parametric test. The test was applicable in testing the dependent variable (loss-framing or uncertainty) from the independent variable taxonomy of moral philosophy (absolutists and situationists). It was executed to determine if there was any difference between the ethical behaviour between accountants in these groupings.

4.9.6 Bivariate correlation

Correlations involve the determining of a relationship between variables. Steffen's (2018) study used a bivariate correlation in analysing relationships. This correlation was used in assessing the strength in addition to the direction of the relationships amongst variables, such as the Pearson’s and Spearman’s rho correlation. The aims were to model the relationship between variables (outcome variable grounded in the independent variable), and to establish if there was a difference in individuals’ taxonomy and their decision-making process. The Spearman correlation is referred to as non-parametric, while Pearson’s correlation is a parametric test measuring the level of relationships/association between two variables. This can occur between two ordinal variables, or one ordinal and one continuous variable (Wegner, 2016).

The Fisher's exact test was used for questions where there were a yes or no answer in a 2x2 matrix. The test was conducted to determine if there was an association or a relationship between two categorical variables, generally used in smaller sample sizes (Routledge, 1992).

4.9.7 Independent t-test

The independent t-test was used to compare data between related and unrelated groups (Gerald, 2018). The t-test compared the means of the two independent experimental groups and was conducted to establish if they were statistically associated between the means of those respective population groups. In the study, loss-framing and gain-framing were compared with the control group, as the control group was an independent group who answered all questions. The sample size between the groups were similar.

4.10 Data Reliability and Validity

Validity of a study refers to the degree to which the data gathering approach correctly measures the planned outcome, and that the research results are truly what they profess (Saunders & Lewis, 2018). Reliability refers to data gathering and analysing procedures that generate coherent results. The consistency is a measure one applies to produce the same result if used on other occasions (Saunders & Lewis, 2018). For this research to be considered valid, it was crucial that the data collected were reliable and correctly determined what they planned to measure.

In order to ensure internal validity for this study, participants were randomly assigned to each experimental group based on a coding done in the background of the questionnaire. This ensured that a blinding experiment took place as the participants did not know which set of questions they were given to answer. The two-test done in this research to determine validity was the Cronbach's alpha and the confirmatory factor analysis (CFA). The Cronbach's alpha measures internal consistency (Bonett & Wright, 2015). The researcher used the CFA to test validity and the internal structure of the existing instrument (EPQ) used in the research. The CFA confirms the factor structure and is a very strict measure to determine validity (Williams & O'Boyle, 2015).

To provide additional validity to the study's experiment, a control group was added. Groups A (loss-framing) and B (gain-framing) were the primary groups, with Group C being the control group. This ensured internal validity for this study. Group A tested conditions under loss-framing scenarios and uncertainty. Group B tested gain-framing scenarios and certainty. Group C received all questions.

4.11 Potential Research Limitations

A limitation to this study's experiment was that one will not be able to draw inferences on the entire population of accountants. Probability sampling was not used due to the difficulty in obtaining a complete list of all accountants and getting access to their contact details, and the cost and time constraints of the research. The total spectrum of accountants is very large and diverse, and this includes both professional accountants who have obtained additional certification with different professional bodies; accountants who have only obtained an undergraduate qualification; and lastly accountants who have obtained their title through on-the-job training, but did not complete any relevant tertiary education. Therefore, the study used non-probability sampling to obtain an appropriate sample size.

The experiment took the form of an online questionnaire. Therefore, a limitation of the study was that the participants were required to have access to the internet and a computer or a smartphone for them to be able to complete the questionnaire. Technical difficulty was also encountered by some of the participants, as this was an inherent part of technology and in some instances, participants were not able to access the questionnaire due to internet site restrictions within the organisation, which was confirmed by two participants.

The study's experiment could not be conducted in a controlled environment, which would have been the preferred method. There were three different scenarios that had an impact on the experiment. Due to social distancing, the experiment could not be controlled by the researcher per individual group. This might also have resulted in bias due to the setting and environment in which the participants completed the experiment. An experiment is highly unlikely to capture the full extent of a real-world scenario, as individuals might answer questions to create a perception of themselves that does not accurately reflect what they would do if the situation were to arise. This reflects a revealed preferred approach as opposed to what would happen in reality (Dohmen, Falk, Huffman, & Sunde, 2018). However, it was still worth conducting the experimental study as experiments have been proven to be valid in numerous studies; for example, the Prospect theory by Kahneman and Tversky in 1980, where gains and losses were considered inversely, and this is still valid today. Accountants might also be forced to give theoretical answers, as they might not have been exposed to such situations in their work environment or they might have minimal work experience.

CHAPTER 5: DATA ANALYSIS AND RESEARCH RESULTS

5.1 Introduction

In this chapter, the results will be set out and presented. The descriptive statistics will highlight key demographics of the participants as well as the various experimental groups. The experimental groups are important for the statistical analysis that will follow. Thereafter, the reliability and validity tests on the instruments will be covered. Data will be analysed from a descriptive perspective to determine the likely differences and frequencies in responses on ethical decision-making resulting from framing. In addition, inferential statistics will be performed to determine if there are differences in ethical decision-making between the taxonomy of individuals (absolutists and situationists). Finally, correlations and comparisons will be presented. Parametric statistics are generally dependent on the shape of the distribution when the distribution is normal. Non-parametric tests such as the Spearman's rho are mainly used if data is not normally distributed (Hoskin, 2012). The significance level of a non-parametric test Spearman's rho Sig 2 tailed is the p-value of less than 0.05 ($p < 0.05$), and the strength of the relationship is as follows: small for $r = 0.1$ to 0.29; medium $r = 0.3$ to 0.49; and larger $r = 0.5$ to 1 (Pallant, 2020).

5.2 Demographic Descriptive Statistics

The experimental questionnaire was distributed to a population of approximately 400 potential participants. Some participants forwarded the questionnaire to other individuals as well, and therefore the researcher cannot determine the exact number. The 178 participants shown in Table 2 below attempted to complete the questionnaire. Due to the qualifying question that participants had to complete before commencing the questionnaire (Are you an accountant?), 11 participants were eliminated during this process. The valid responses to the questionnaire are made by 167 participants, resulting in a valid response rate of 94% and a 42% valid completion to approximate distributed participants of 400. From the valid participants, 130 (79%) have control/influence in their current or previous role over an income statement.

The tables and figure below depict the demographics of the participants. Figure 6 refers to their nationality, which indicates that the vast majority of the participants are South Africans (134 or 80%), and 33 (20%) are non-South Africans. Figure 7 refers to participants' gender, and indicates that participants are fairly represented between males (89 or 53%) and females 78 (47%). Table 3 refers to the participants' age, where the age range of participants is between a minimum of 21 and a maximum of 72 years, with a

mode of 37 years old. In Table 4, the majority of the participants are Black (61 or 37%), followed by white (44 or 26%), coloured (33 or 20%), Indian (27 or 16%) and other (2 or 1%). Table 5 refers to their managerial levels, with junior management (19 or 11%), supervisors (16 or 10%), middle management (57 or 34%), senior management (43 or 26%), and director, executive and vice president (32 or 19%) being represented. The managerial level was designed to get a fair distribution of accountants across various levels of organisations. In Table 6, which refers to the participants' education, the lowest level of education is matric, this is only one individual. The majority of the participants have a degree, honours degree or a master's degree, which represents 160 (96%) of the participants. Table 7 presents the participants' work experience, where 84, half of the participants, have more than 11 years of work experience (50%). Only one participant has no work experience yet, and 3 participants did not complete the work experiences question.

Finally, Table 8 represents the experimental groups. The experimental groups are fairly distributed with a minimum of 54 (32%) in the gain-framing group, followed by the control group of 56 (34%) and with the remainder being in the loss-framing group (57 or 34%).

Table 2: Valid Participants

Valid	Frequency	Percentage [%]
Yes	167	94%
No	11	6%
Total	**178**	**100%**

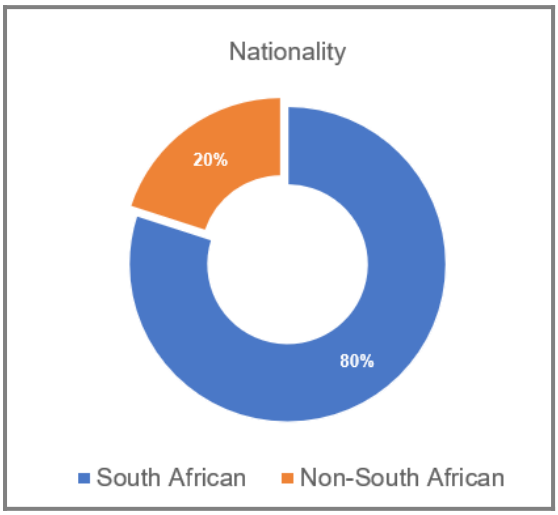

Figure 6: Nationality

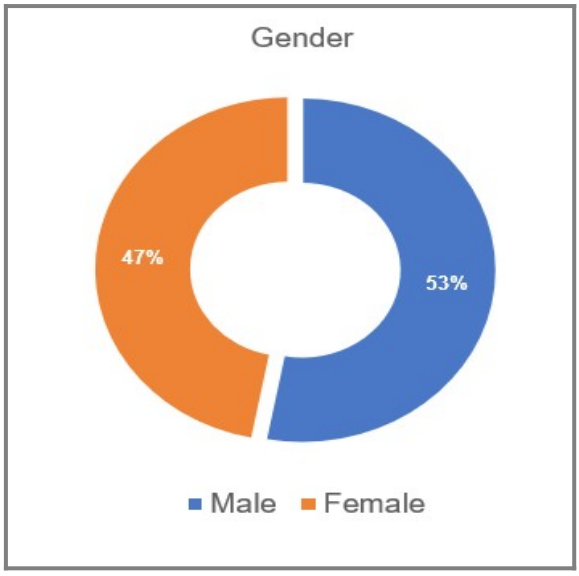

Figure 7: Gender

Table 3: Age

Frequency	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
167	35.98	36.00	37	6.89	21	72

Table 4: Race

Race	Frequency	Percentage [%]
Black	61	37%
White	44	26%
Coloured	33	20%
Indian	27	16%
Other	2	1%
Total	**167**	**100%**

Table 5: Managerial level

Managerial level	Frequency	Percentage [%]
Junior	19	11%
Supervisor	16	10%
Middle-Manager	57	34%
Senior Manager	43	26%
Director /Executive /VP	32	19%
Total	**167**	**100%**

Table 6: Education level

Education	Frequency	Percentage [%]
Grade 12 -Matric	1	1%
College Diploma	5	3%
Bachelors / Honours Degree	115	69%
Master's degree	45	27%
Certificate	1	1%
Total	**167**	**100%**

Table 7: Work experience

Work experience - Years	Frequency	Percentage [%]
None	1	1%
‹ 2	5	3%
3-5	20	12%
6-10	54	32%
11+	84	50%
Missing data	3	2%
Total	**167**	**100%**

Table 8: Experimental groups

Experimental groups	Frequency	Percentage [%]
Loss-framing	57	34%
Gain-framing	54	32%
Control-group	56	34%
Total	**167**	**100%**

The experiment's questionnaire consisted of 35 questions, excluding the qualifying question and the demographic information. When a participant selected the link to the questionnaire, the questionnaire opened in a web browser, prompting the participant to enter a randomly assigned number (1, 2, or 3) generated by the program in the background before they could proceed with the questionnaire. This automatic number generator allocated the participants to the respective experimental group (loss-framing, gain-framing or control group). The control group answered all the questions.

The questionnaire starts off with all participants answering the ethical positioning questionnaire, and then either the loss-framing questionnaire, the gain-framing questionnaire or the control group questionnaire. The loss-framing questions tested situations of uncertainty, loss-framing, the Prospect theory and real scenario. The gain-framing tested certainty and gain-framing.

5.3 Scale Developing and Testing

Prior to reporting the results and testing the developed hypotheses, the reliability and validity were confirmed and tested on the instrument. This was to confirm validity and reliability on the existing instrument used, the EPQ, and to test validity on the experimental questions for this research where it was considered appropriate due to the nature of this being an experiment.

5.4 Reliability

The Cronbach's alpha measures can be found in Table 9 below. The Cronbach's alpha was executed on all items where reliability was expected. For the gain-framing, loss-framing, Prospect theory and real scenario, constructs were not expected to yield reliability and they have therefore been excluded from the table below. As the questions are situation-dependent with an underlying ethical element − for example, loss-framing − participants might identify the ethical element in one question and not the other, or may deem one question more unethical than the other, and therefore, the researcher expected that the responses might be inconsistent. Furthermore, these questions asked individuals lengthy scenario-based questions, as the study was an experimental design, therefore question loading is not deemed appropriate for Cronbach's alpha. The Cronbach's alpha is extremely sensitive and therefore items fewer than 10 might have low alphas (Pallant, 2011). The questions in these categories had either one, two or three questions and are well below the minimum threshold of 10. The categories where the Cronbach's alpha were not calculated were analysed on an individual/itemised level.

A confirmatory factor analysis was only performed on the EPQ questionnaire. This was not suitable for the experimental questions as item loading was either 1, 2 or 3 per category. The lowest Cronbach's alpha is 0.67 and the highest is 0.751 (after the EPQ adjustment, see below CFA). Gliem and Gliem (2003) provide the following guidance on interpreting the Cronbach's alpha: "_ > .9 = excellent; _ > .8 = good; _ > .7 = acceptable; _ > .6 = questionable; _ > .5 = poor; and _ < .5 = unacceptable" (p. 87). The reliability in the EPQ, uncertainty and certainty categories range between questionable and acceptable. Therefore, internal consistency of the scales is accepted for this research as none was unacceptable.

Table 9: Cronbach's alpha

Scale Description	Cronbach's Alpha	N	Cronbach's Alpha after items removed C7,9,10,14	N after adjustment
EPQ	0.765	20	0.751	16
Uncertainty	0.75	3	0.75	3
Certainty	0.67[a]	3	0.67	3

[a] The means is 0.478

5.5 Confirmatory Factor Analysis (CFA)

The CFA was used to further analyse the EPQ to assess the suitability for use among accountants and to optimise the reliability of this instrument on idealism and relativism. Confirmatory factor analysis was done on the EPQ in previous studies, and the conclusion was that it was acceptable in idealism but weaker on relativism (Davis et al., 2001). Therefore, the predictability on relativism is not as reliable.

The confirmatory factor analysis (CFA) was done on the EPQ, as this questionnaire contains 20 questions, and as it is an existing instrument, the purpose of the CFA was to determine the factor structure of the instrument. A CFA is a powerful statistical tool and is more stringent, testing the relationship among constructs in an instrument (Jackson, Gillaspy, & Purc-Stephenson, 2009). The CFA can be used to refine existing instruments and to determine the validity of an instrument (Brown & Moore, 2012). It is important for the instrument to be multi-variant normal, through testing the normalised estimate. Therefore, the researcher has to determine an acceptable fit for the instrument. This was supported by the caution that the “coromega may be singular” when the researcher ran the first CFA test on the instrument. This warning indicated multi-collinearity issues, items correlating highly between relativism or idealism. For the instrument to be usable, the coromega error had to be resolved.

The weak items identified in the EPQ instrument are where the root square on the maximum likelihood scale is generally below 0.3 on each individual question. There are four items that have a root square of below 0.2 and they were removed to see if the coromega error could be resolved; these were questions c7, c9, c10, and c14. After the removal of the four questions, the error cleared and there was no need to remove additional questions. A summary of both results can be seen in Table 10 below. An

acceptable fit was achieved after the adjustment with the results as follows (x^2/df = 1.57, CFI = 0.929, RMR = 0.06, RMSEA = 0.059, 90% confidence 0.040: 0,075). A CFI of 0.91 was reported by Davis et al. (2001) on their CFA on the EPQ.

Table 10: Confirmatory Factor Analysis

CFA - Test	All EPQ questions	Robust estimates Yuan Bentler	Adjusted EPQ - removed Q7,9,10,14	Adjusted Robust estimate Yuan Bentler
Mardia-based Kappa	10.62		12.89	
Chi-Square	293.85	260.844	161.618	138.789
Degree of freedom	169	169	103	103
x^2/df	1.74	1.54	1.57	1.35
Comparative fit index (CFI)	0.874	0.894	0.929	0.95
Standardise RMR	0.069		0.06	
Root means-square error of approximation (RMSEA)	0.067	0.057	0.059	0.046
90% confidence interval RMSEA	0.054; 0.079	0.043; 0.070	0.040;0.075	0.023;0.064

5.6 EPQ – Analysis

Table 11 below presents the EPQ questions before the removal of questions c7, c9, c10, and c14. The split between idealism and relativism ranks from highest to lowest mean for each section. Questions C1 to C10 rank a participant's idealism, with question C4 having the highest M = 4.6 and SD = 0.6; and question C7 ranks lowest M = 3, SD = 1.2. On the relativism questions, questions C11 to C20, question C14 ranks the highest M = 3.6 and SD = 1.0; and question C11 ranks lowest M = 2.3 and SD = 1.1.

Table 11: Ethical positioning questionnaire all participants

EPQ Questions (Don Forsyth)	N	Min	Max	Mean	Median	Mode	Std. Deviation
Idealism - Q1 to 10 - Ranked by highest mean							
C4 One should never psychologically or physically harm another person	167	1	5	4.6	5.0	5.0	0.6
C5 One should not perform an action that might in any way threaten the dignity and welfare of another individual	167	1	5	4.5	5.0	5.0	0.8
C1 People should make certain that their actions never intentionally harm another even to a small degree	167	1	5	4.4	5.0	5.0	0.8
C6 If an action could harm an innocent other, then it should not be done.	167	2	5	4.4	5.0	5.0	0.8
C8 The dignity and welfare of the people should be the most important concern in any society.	167	1	5	4.2	4.0	5.0	0.8
C3 The existence of potential harm to others is always wrong, irrespective of the benefits to be gained	167	1	5	4.1	4.0	5.0	1.0
C2 Risks to another should never be tolerated, irrespective of how small the risks might be.	167	1	5	3.8	4.0	4.0	1.1
C10 Moral behaviours are actions that closely match ideals of the most "perfect" action.	167	1	5	3.8	4.0	4.0	1.0
C9 It is never necessary to sacrifice the welfare of others.	167	1	5	3.7	4.0	4[a]	1.2
C7 Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences of the act is immoral.	167	1	5	3.0	3.0	2.0	1.2
Relavitism - Q11 to 20 Ranked by highest mean							
C14 Different types of morality cannot be compared as to "rightness."	167	1	5	3.6	4.0	4.0	1.0
C12 It is acceptable for ethical perspectives to vary from one situation and society to another.	167	1	5	3.3	4.0	4.0	1.3
C18 Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment.	167	1	5	3.1	3.0	4.0	1.1
C13 Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.	167	1	5	3.0	3.0	2.0	1.2
C15 Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.	167	1	5	2.9	2.0	2.0	1.2
C16 Moral standards are simply personal rules that indicate how a person should behave, and are not to be applied in making judgments of others.	167	1	5	2.7	2.0	2.0	1.2
C17 Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.	167	1	5	2.6	2.0	2.0	1.2
C20 Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.	167	1	5	2.4	2.0	2.0	1.2
C19 No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends upon the situation.	167	1	5	2.4	2.0	2.0	1.2
C11 There are no ethical principles that are so important that they should be a part of any code of ethics.	167	1	5	2.3	2.0	2.0	1.1

Source: EPQ (Forsyth, 1992), data collected independently

Table 12 shows the mean scores for the overall groups. Idealism M = 4.3, SD = 0.59 and relativism M = 2.8, SD = 0.079.

Table 12: Idealism vs Relativism all participants

EPQ	N	Min	Max	Mean	Median	Mode	Std. Deviation
Idealism	167	2.29	5	4.3	4.4	5	0.59
Relativism	167	1	5	2.8	2.7	2.4	0.079

Table 13 further splits the participants' ethical taxonomy. There are103 absolutists (62%) and 59 situationists (35%). Due to the exceptionists and subjectivists having a small population (below 3 participants each), the researcher excluded them when reporting ethical taxonomy. Taxonomy was linking the constructs tested to determine if the absolutists and situationists would act differently to the same experimental question.

Table 13: Taxonomy – Division of Participants

EPQ - categories	Frequency	Percentage [%]
Absolutists	103	62%
Situationists	59	35%
Exceptionists	2	1%
Subjectivists	3	2%
Total	**167**	**100%**

A score was calculated for each individual response through assigning a mean score per individual question. The scores were then plotted on a Cartesian plane in Figure 8, indicating where each individual is categorised on the Forsyth's ethical taxonomy. There are four quadrants on the scale showing the different categories: absolutists, situationists, exceptionists, and subjectivists (refer to Chapter 2 Table 1), based on individuals' responses to the ethical positioning questionnaire.

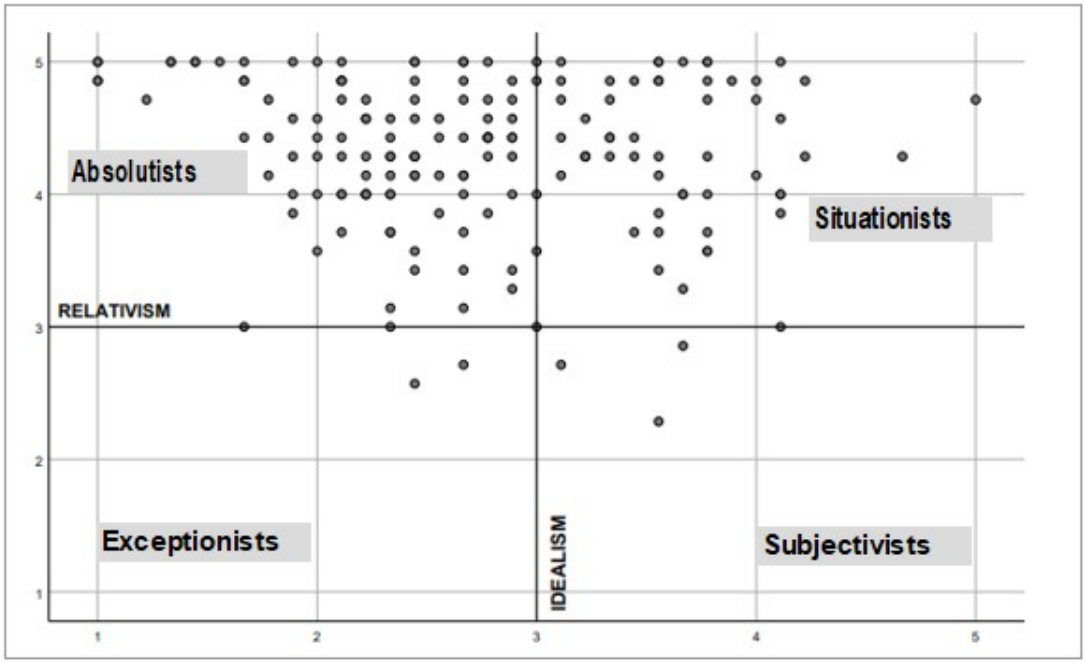

Figure 8: Cartesian plane, all participants

5.7 Descriptive Statistics on Experimental Instrument

This section summarises the descriptive statistics of the experimental questionnaire. The experiment comprises three groups: loss-framing, gain-framing and the control group (which answered all the questions). These descriptive statistics are divided into the two groups reporting the combined result of either the loss-framing and control group, or the gain-framing group and control group. The two groups tested the following:

- Loss-framing – uncertainty, loss-framing, prospect-framing and real scenario
- Gain-framing – certainty and gain-framing

Table 14 presents the descriptive statistics for the loss-framing experiment (loss-framing and control group). The loss-framing group comprises 57 participants and the control group has 56 participants, thus the total number of participants for these questions is 113.

Uncertainty (Table 14): Questions D1, D2, and D3 tested the environments uncertainty and being negatively framed. Question D1 has an M = 4.2 and the SD = 1.0; Question D2 measures M = 4.0, SD = 1.0; and Question D3 (inverse question) measures M = 2.4 and SD = 1.4.

Loss-framing (Table 14): Questions E1, E2, and E3 tested loss-framing from an individual financial loss perspective and being negatively framed. Question E1 measures M = 3.6, SD = 1.3; Question E2 (inverse question) measures M = 2.2 and SD = 1.1; and Question E3 measures M = 3.1, SD =1.2.

Prospect-framing (Table 14): Questions F1 and F2. For question F1, 87 (77%) participants prefer a sure gain, and for question F2, 78 (69%) participants avoid a sure loss.

Real scenario (Table 14): For question G1, 87 (77%) participants would not sign a document if an error was picked up during the final review of a business disposal.

Table 14: Loss-framing and control group

Uncertainty - You are the CFO/Finance manager, your company is currently experiencing extremely volatile times, the financial position is weak and there is high level of uncertainty that the company will be in operation in the next 6 months. To compound the already dire situation one of the subsidiaries has seen a material decline in demand for its product and requires an impairment to reflect the true asset value of its operation.	N	Min	Max	Mean	Median	Mode	Std. Deviation
D1 Your analysis suggests that should the impairment be posted there is a 90% chance that the business will go into business rescue. How likely are you to process the journal?	113	1	5	4.2	4.0	5.0	1.0
D2 Your analysis also suggests that should the impairment be posted, there is a 90% chance that the business will retrench employees which includes you. How likely are you to process the journal?	113	1	5	4.0	4.0	4.0	1.0
D3 Would your decision be any different if the company were not facing uncertain times?	113	1	5	2.4	2.0	1.0	1.4

Loss Framing - You are the Finance manager and you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware of massive earning shortfall and potential write-downs that is on the horizon for this financial year which might cause the share price to fall by 50%.	N	Min	Max	Mean	Median	Mode	Std. Deviation
E1 As of now, your analysis suggests that you have a 90% chance of losing 50% of the value and a 10 % chance of the share price remaining at current levels. How likely are you to sell your share in the company?	113	1	5	3.6	4.0	4[a]	1.3
E2 If you expected the share price to increase by 50%, would you still sell your shares?	113	1	5	2.2	2.0	2.0	1.1
E3 You are the CFO and are busy reviewing the annual bonus calculation. The calculation seems reasonable; however, you notice that the shortfall for the firm to qualifying for E3 the bonus is missed by 0.5%. This mean that no one would be entitled to receive a bonus for this financial year. The bonus for yourself as CFO is equivalent to 100% of your annual salary. There is one provision that has been raised for this financial year, however it could be delayed to the next financial year. The deferral of this provision will result in the firm being able to pay out bonuses. How likely are you to approve the deferral of this provision?	113	1	5	3.1	3.0	4.0	1.2

[a] Multiple modes exist. The smallest value is shown

Prospect Framing	Frequency	Percentage [%]
F1 - A = Which of the following would you choose? A = a sure gain of R240 000	87.0	77.0
B = a 25% chance to gain R1 000 000 and a 75% chance to gain nothing	26.0	23.0
Total	**113.0**	**100.0**

Prospect Framing	Frequency	Percentage [%]
F2 A = Which of the following would you choose? A = a sure loss of R750 000	35.0	31.0
B = 75% chance to lose R1 000 000 and 25% chance to lose nothing	78.0	69.0
Total	**113.0**	**100.0**

Real Scenario - Based on the majority of the response the following company will implement the decision. The company is the final stage of its negotiations, for the disposal of one of its subsidiaries. The company really needs the disposal to be signed off within the next week as they are reliant on the cash inflow from this disposal to ensure that the whole company is not placed under business rescue. The decision is crucial as time is of the essence. During the final review, a reporting error has been identified. What would your recommendation be: to sign the document to ensure the company's viability or not to sign the document?	Frequency	Percentage [%]
G1 - Yes?	26.0	23.0
No?	87.0	77.0
Total	**113.0**	**100.0**

Table 15 below depicts the gain-framing experiment (gain-framing and control group). The gain-framing group has 54 participants, and the control group has 56 participants out of a total of 110 participants for these questions.

Certainty (Table 15): Questions H1, H2 and H3 tested the environments certainty and positively framed. Question H1 measures M = 4.4 and SD = 0.8; Question H2 measures M = 4.5, SD = 0.8; and Question H3 (inverse question) measures M = 2.3 and SD = 1.2.

Gain-framing (Table 15): Questions I1 and I2 tested how participants would respond to a gain-framed scenario and positively framed. Question I1 measures M = 2.4 and SD = 1.2; and Question I2 (inverse question) measures M = 2.8 and SD = 1.3.

Table 15: Gain-framing and control group

Certainty -You are the CFO/Finance manager and of a company operating in a stable environment. The financial position is good and there is a high level of certainty that the company will be in operation in the next 2 Years. One of the subsidiaries has seen a decline in the demand for its product and requires an impairment to reflect the true asset value of its operation.	N	Min	Max	Mean	Median	Mode	Std. Deviation
H1 Your analysis suggests that should the impairment be posted there will be an insignificant impact on the Group results. How likely are you to process the journal?	110	1	5	4.4	5.0	5.0	0.8
H2 Your analysis also suggests that even if the impairment is posted there is a no chance that the business will retrench employees. How likely are you to process the journal?	110	1	5	4.5	5.0	5.0	0.8
H3 Would your decision be any different if the company were facing severe uncertainty and closure?	110	1	5	2.3	2.0	2.0	1.2

Gain-framing - You are a Finance manager; you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware that the company is currently doing very well, and this might cause the share price to increase by 50% in the near future.	N	Min	Max	Mean	Median	Mode	Std. Deviation
I1 As of now, your analysis suggests that there is 90% chance of a 50% gain in the share price. How likely are you to sell your share in the company?	110	1	5	2.4	2.0	2.0	1.2
I2 Would your decision be the same if there was a 90% chance the share price would reduce by 50%?	110	1	5	2.8	2.0	2.0	1.3

5.8 Testing for Normality in the Overall Experimental Groups

The Kolmogorov-Smirnov[a] test was performed to test the overall sample sizes per experimental group, testing if data in the experiment is normally distributed. This test is appropriate for sample sizes in excess of 50 participants, and each experimental group has more than 50 participants (Shapiro & Francia, 1972). The Kolmogorov-Smirnov[a] test is applicable for the distribution of a selected sample size with 50 as a minimum (Massey Jr, 1951) if the p-value is greater ($p > 0.05$) than the data is distributed normally. The results are depicted in Table 16 below, where the p-values for relativism in all groups are

greater than 0.05 and are therefore normally distributed. The remaining data is skewed and does not have a normal distribution. Therefore, for correlations, the use of a non-parametric test is appropriate.

Table 16: Test for normality – per group

Tests of Normality				
Kolmogorov-Smirnov[a]				
Group		Statistic	df	Sig.
Loss-framing	Idealism	0.174	57	0.000
	Relativism	**0.076**	**57**	**.200***
	Uncertainty	0.154	57	0.002
	E1 - loss-framing	0.185	57	0.000
	E2 - loss-framing	0.288	57	0.000
	E3 - loss-framing	0.241	57	0.000
Gain-framing	Idealism	0.126	54	0.033
	Relativism	**0.100**	**54**	**.200***
	Certainty	0.195	54	0.000
	I1 - gain-framing	0.242	54	0.000
	I2 - gain-framing	0.208	54	0.000
Control-group	Idealism	0.158	56	0.001
	Relativism	**0.085**	**56**	**.200***
	Uncertainty	0.215	56	0.000
	E1 - loss-framing	0.292	56	0.000
	E2 - loss-framing	0.313	56	0.000
	E3 - loss-framing	0.251	56	0.000
	Certainty	0.222	56	0.000
	I1 - gain-framing	0.318	56	0.000
	I2 - gain-framing	0.312	56	0.000

*Normally distributed

5.9 Testing for Normality Within Each Experimental Group

The Shapiro-Wilk test was performed to test smaller sample sizes for normal distribution within a specific experimental group. This test is suitable for sample sizes where the group is less than 50 participants (Shapiro & Francia, 1972). Data is normally distributed if the value is greater than $p > 0.05$. The results are shown in Table 17 below, where the p-values in the control group, uncertainty for situationists and certainty for situationists, are greater than $p > 0.05$. The rest of the p-values are skewed and therefore not normally distributed as they are below $p < 0.05$. Therefore, non-parametric correlations are appropriate.

Table 17: Test for normality with a group

Tests of Normality					
Shapiro-Wilk					
Group			Statistic	df	Sig.
Loss-framing	**Uncertainty**	Absolutists	1	29.000	0.010
		Situationists	1	25	0.032
	E1 - loss-framing	Absolutists	1	29.000	0.011
		Situationists	1	25.000	0.000
	E2 - loss-framing	Absolutists	1	29.000	0.001
		Situationists	1	25.000	0.001
	E3 - loss-framing	Absolutists	1	29.000	0.001
		Situationists	1	25	0.015
Gain-framing	**Certainty**	Absolutists	1	34.000	0.000
		Situationists	1	20.000	0.031
	I1 - gain-framing	Absolutists	1	34.000	0.000
		Situationists	1	20.000	0.029
	I2 - gain-framing	Absolutists	1	34	0.001
		Situationists	1	20.000	0.040
Control-group	**Uncertainty**	Absolutists	1	40.000	0.000
		Situationists	**1**	**14.000**	**0.730***
	E1 - loss-framing	Absolutists	1	40.000	0.000
		Situationist	1	14.000	0.023
	E2 - loss-framing	Absolutists	1	40.000	0.000
		Situationists	1	14.000	0.011
	E3 - loss-framing	Absolutists	1	40.000	0.000
		Situationists	1	14.000	0.005
	Certainty	Absolutists	1	40.000	0.000
		Situationists	**1**	**14.000**	**0.276***
	I1 - gain-framing	Absolutists	1	40.000	0.000
		Situationists	1	14.000	0.010
	I2 - gain-framing	Absolutists	1	40.000	0.000
		Situationists	1	14.000	0.007

*Normally distributed

5.10 Results – Loss-framing Experiment: Loss-framing vs Control Group

5.10.1 Uncertainty and Loss-framing questions D and E

The results for linking the loss-framing experimental questions to ethical taxonomy ideology to determine if absolutists and situationists would act differently to the same question are shown in Table 18 for both loss-framing and the control group. For question E1, in the loss-framing group for financial loss on accountants that was negatively framed, absolutists have M = 2.97 and SD = 1.26; and the situationists have M = 3.79 and SD = 1.422. The remaining results do not display any mean where one group leans more towards a different category (1 = very unlikely to 5 = very likely) between absolutists and situationists.

Table 18: Absolutists vs. Situationists

Loss-framing Group					
GroupEPQ		N	Mean	Std. Deviation	Std. Error Mean
Uncertainty	Absolutists	29	3.95	0.894	0.166
	Situationists	25	3.84	0.972	0.194
E1 - loss-framing	Absolutists	29	2.97	1.267	0.235
	Situationists	25	3.76	1.422	0.284
E2 - loss-framing	Absolutists	29	2.14	0.915	0.170
	Situationists	25	2.28	1.173	0.235
E3 - loss-framing	Absolutists	29	2.76	1.405	0.261
	Situationists	25	3.48	1.194	0.239

control-group					
GroupEPQ		N	Mean	Std. Deviation	Std. Error Mean
Uncertainty	Absolutists	40	4.12	0.908	0.143
	Situationists	14	3.64	0.779	0.208
E1 - loss-framing	Absolutists	40	3.88	1.285	0.203
	Situationists	14	3.79	0.975	0.261
E2 - loss-framing	Absolutists	40	2.03	1.143	0.181
	Situationists	14	2.29	0.914	0.244
E3 - loss-framing	Absolutists	40	2.95	1.197	0.189
	Situationists	14	3.21	0.802	0.214

The Mann Whitney U test tests for differences in sets of data, and is a non-parametric test. In this case, it tests if there is a difference between the responses by absolutists and situationists to the same questions. This test is suitable for a data set when the distribution of data is not normal. This is an alternative test to the t-test that is a parametric test

(Pallant, 2011). If a p-value is less than $p < 0.05$, then the difference is significant. The results are presented in Table 19 below, where it shows that in the loss-framing group on question E1, the $Z = -2.241$ and $p = 0.025$. This question tested potential financial loss, framed negatively on shares owned by the accountant due to the company's massive earning decline, and the result is considered significant. The control group uncertainty is also considered significant with $p = 0.035$ and $Z = -2.109$. The remaining results are not significant, as the p-value is in excess of 0.05.

Table 19: Non-Parametric test

Test Statistics[a]

	Loss-framing Group					Control-Group			
	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)		Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Uncertainty	335.000	660.000	-0.484	0.628		**175.000**	**280.000**	**-2.109**	**0.035**
E1 - Loss framing	**236.500**	**671.500**	**-2.241**	**0.025**		244.000	349.000	-0.751	0.453
E2 - Loss framing	352.500	787.500	-0.186	0.853		219.000	1039.000	-1.292	0.196
E3 - Loss framing	258.000	693.000	-1.866	0.062		244.500	1064.500	-0.734	0.463

5.10.2 Prospect-framing Question F

For the Prospect theory depicted below, loss-framing and control groups are shown. The population of exceptionists and subjectivists has been excluded, as there are 3 or less participants in these categories.

Which of the following would you choose?
A = A sure gain of R240 000
B = A 25% chance to gain R1 000 000 and a 75% chance to gain nothing.

The results for question F1 are depicted in Figure 9, where the loss-framing and control group answer directionally the same. In the loss-framing group, the majority of the participants choose option A, 22 absolutists (75.9%) and 18 situationists (72%). In the control group, the results are even slightly more pronounced, with the majority of the participants also choosing option A, 33 absolutists (82.5%) and 11 situationists (78.6%).

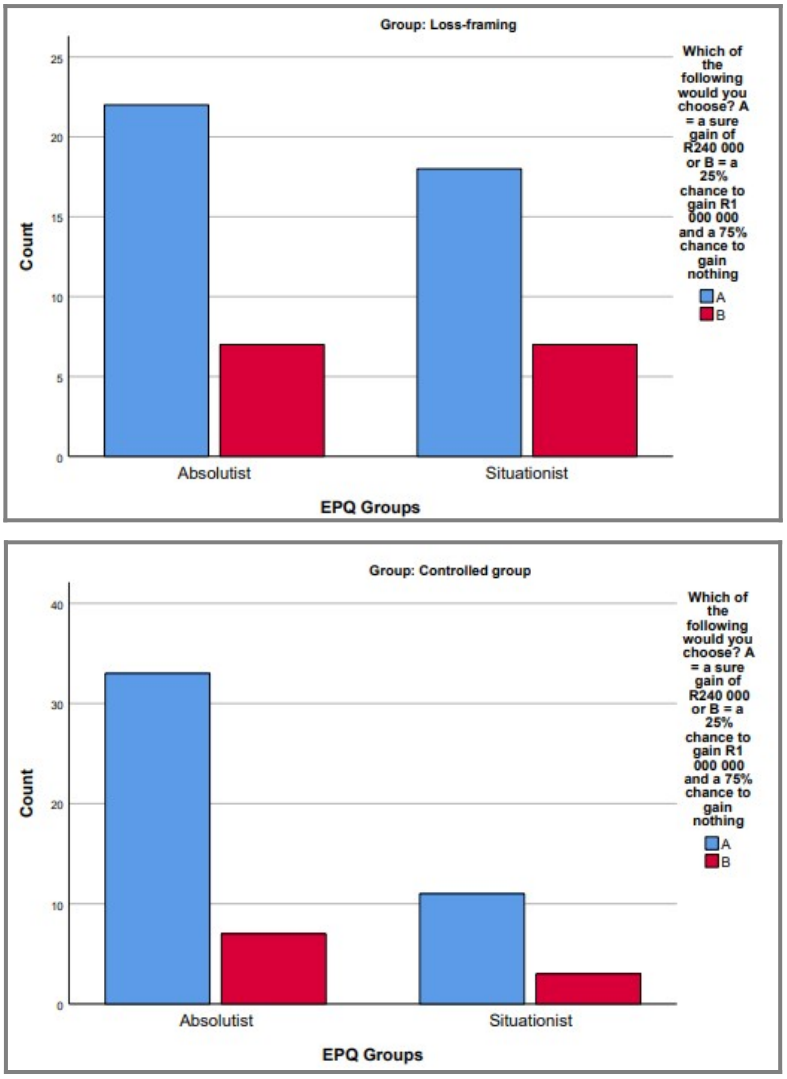

Figure 9: Loss-framing scenario 1

Table 20: Prospect-framing scenario 1

Which of the following would you choose? A = a sure gain of R240 000 B = a 25% chance to gain R1 000 000 and a 75% chance to gain nothing.						Total
				A	B	
Loss-framing	GroupEPQ	Absolutists	Count	22	7	29
			% within GroupEPQ	75.9%	24.1%	100.0%
		Situationists	Count	18	7	25
			% within GroupEPQ	72.0%	28.0%	100.0%
	Total		Count	40	14	54
			% within GroupEPQ	74.1%	25.9%	100.0%
Control-group	GroupEPQ	Absolutists	Count	33	7	40
			% within GroupEPQ	82.5%	17.5%	100.0%
		Situationists	Count	11	3	14
			% within GroupEPQ	78.6%	21.4%	100.0%
	Total		Count	44	10	54
			% within GroupEPQ	81.5%	18.5%	100.0%

The Fisher's exact test is used to determine if a relationship exists between variables (Pallant, 2011). The results should be $p < 0.05$ for the relationship to be significant. The results are shown below in Table 21 for the loss-framing group 0.766 and for the control group 0.708.

Table 21: Chi-Square test & Fisher's exact test

Chi-Square Tests & Fisher's Exact Test					
Group		Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Loss-framing	Pearson Chi-Square	.104[a]	1	0.747	
	Continuity Correction[b]	0.000	1	0.991	
	Likelihood Ratio	0.104	1	0.747	
	Fisher's Exact Test				**0.766**
	Linear-by-Linear Association	0.102	1	0.749	
	N of Valid Cases	54			
Control-group	Pearson Chi-Square	.106[c]	1	0.745	
	Continuity Correction[b]	0.000	1	1.000	
	Likelihood Ratio	0.104	1	0.748	
	Fisher's Exact Test				**0.708**
	Linear-by-Linear Association	0.104	1	0.747	
	N of Valid Cases	54			

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 6,48.
b. Computed only for a 2x2 table
c. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 2,59.

Question F2

Which of the following would you choose?

A = A sure loss of R750 000

B = 75% chance to lose R1 000 000 and 25% chance to lose nothing.

The results in Figure 10 depict that the loss-framing and the control group answer directionally in the same manner. In the loss-framing group, the majority of the participants would choose option B, 21 of the absolutists (72.4%) and 15 of the situationists (60%). In the control group, the majority of the participants also choose option B, 28 of the absolutists (70%) and 9 of the situationists (64.3%).

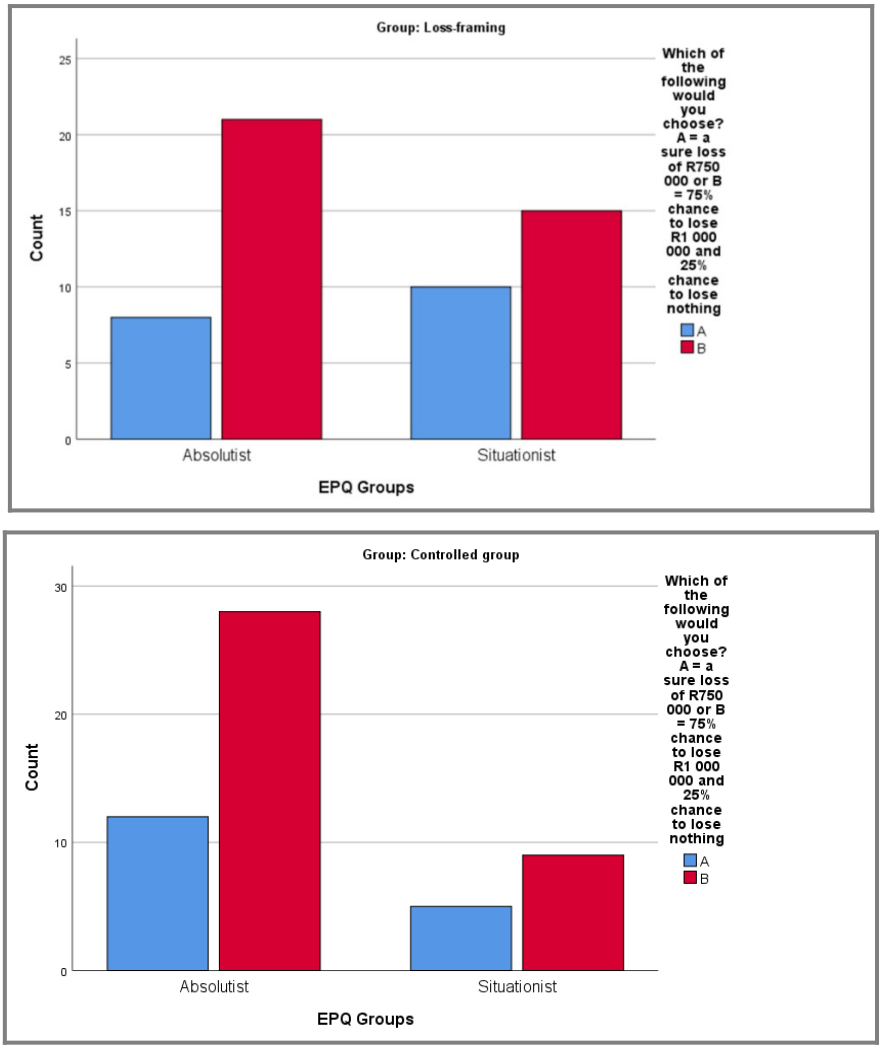

Figure 10: loss-framing scenario 2

Table 22: Prospect-framing scenario 2

Which of the following would you choose? A = a sure loss of R750 000 B = 75% chance to lose R1 000 000 and 25% chance to lose nothing.						Total
				A	B	
Loss-framing	GroupEPQ	Absolutists	Count	8	21	29
			% within GroupEPQ	27.6%	72.4%	100.0%
		Situationists	Count	10	15	25
			% within GroupEPQ	40.0%	60.0%	100.0%
	Total		Count	18	36	54
			% within GroupEPQ	33.3%	66.7%	100.0%
Control-group	GroupEPQ	Absolutists	Count	12	28	40
			% within GroupEPQ	30.0%	70.0%	100.0%
		Situationists	Count	5	9	14
			% within GroupEPQ	35.7%	64.3%	100.0%
	Total		Count	17	37	54
			% within GroupEPQ	31.5%	68.5%	100.0%

The results are shown below in Table 23 for Fisher's exact test for loss-framing, 0.394 and for the control group 0.745. There is no significant relationship between absolutists and situationists.

Table 23: Chi-Square test & Fisher's exact test - Scenario 2

Chi-Square Tests & Fisher's Exact Test					
Group		Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Loss-framing	Pearson Chi-Square	.931[a]	1	0.335	
	Continuity Correction[b]	0.456	1	0.499	
	Likelihood Ratio	0.931	1	0.335	
	Fisher's Exact Test				0.394
	Linear-by-Linear Association	0.914	1	0.339	
	N of Valid Cases	54			
Control-group	Pearson Chi-Square	.157[c]	1	0.692	
	Continuity Correction[b]	0.004	1	0.951	
	Likelihood Ratio	0.155	1	0.694	
	Fisher's Exact Test				0.745
	Linear-by-Linear Association	0.154	1	0.695	
	N of Valid Cases	54			

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,33.

b. Computed only for a 2x2 table

c. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 4,41.

5.10.3 Real scenario – question G

Based on the majority of the response, the following company will implement the decision. The company is in the final stage of its negotiations, for the disposal of one of its subsidiaries. The company really needs the disposal to be signed off within the next week, as they are reliant on the cash inflow from this disposal to ensure that the whole company is not placed under business rescue. The decision is crucial, as time is of the essence. During the final review, a reporting error has been identified.

> *What would your recommendation be: to sign the document to ensure the company's viability or not to sign the document?*

The results in Figure 11 for the loss-framing and control group show that the answers are directionally the same. In the loss-framing group, the majority of the participants would

choose not to sign for both absolutists (22 or 75.9%) and situationists (21 or 84%). In the control group, the majority of the participants choose not to sign, 33 of the absolutists (82.5%) and 9 of the situationists (64.3%).

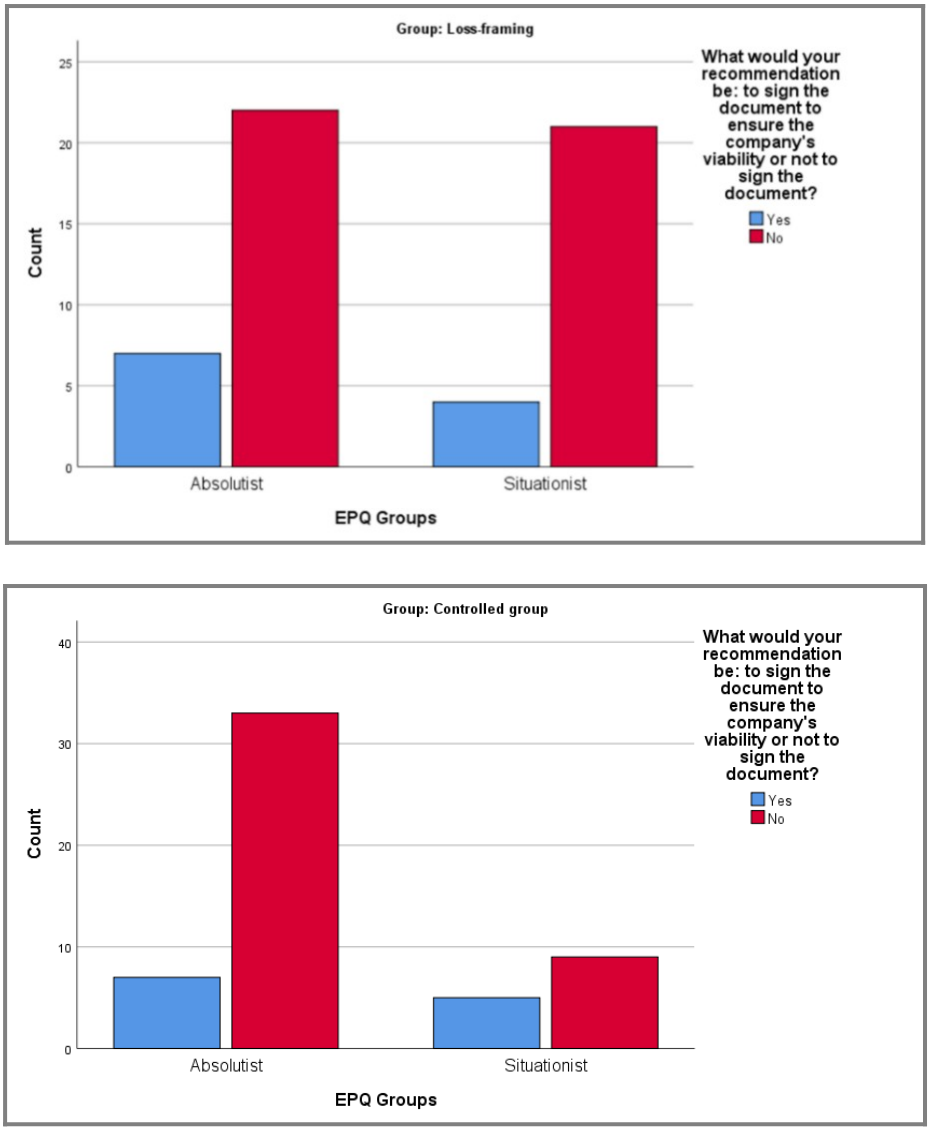

Figure 11: Real Scenario

Table 23: Real Scenario

Based on the majority of the response the following company will implement the decision. The company is the final stage of its negotiations, for the disposal of one of its subsidiaries. The company really needs the disposal to be signed off within the next week as they are reliant on the cash inflow from this disposal to ensure that the whole company is not placed under business rescue. The decision is crucial as time is of the essence. During the final review, a reporting error has been identified.						Total
				Yes	No	
Loss-framing	GroupEPQ	Absolutists	Count	7	22	29
			% within GroupEPQ	24.1%	75.9%	100.0%
		Situationists	Count	4	21	25
			% within GroupEPQ	16.0%	84.0%	100.0%
	Total		Count	11	43	54
			% within GroupEPQ	20.4%	79.6%	100.0%
Control-group	GroupEPQ	Absolutists	Count	7	33	40
			% within GroupEPQ	17.5%	82.5%	100.0%
		Situationists	Count	5	9	14
			% within GroupEPQ	35.7%	64.3%	100.0%
	Total		Count	12	42	54
			% within GroupEPQ	22.2%	77.8%	100.0%

The results are shown below in Table 24, where the Fisher's exact test is 0.517 for the loss-framing group and the control group 0.261. There is no significant relationship between absolutists and situationists.

Table 24: Chi-Square test & Fisher's exact test

Chi-Square Tests & Fisher's Exact test					
Group		Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Loss-framing	Pearson Chi-Square	.548a	1	0.459	
	Continuity Correction[b]	0.161	1	0.688	
	Likelihood Ratio	0.555	1	0.456	
	Fisher's Exact Test				0.517
	Linear-by-Linear Association	0.538	1	0.463	
	N of Valid Cases	54			
Control-group	Pearson Chi-Square	1.991c	1	0.158	
	Continuity Correctionb	1.076	1	0.300	
	Likelihood Ratio	1.861	1	0.173	
	Fisher's Exact Test				0.261
	Linear-by-Linear Association	1.954	1	0.162	
	N of Valid Cases	54			

5.11 Results – Gain-framing Experiment: Gain-framing vs Control Group

5.11.1 Certainty and gain-framing questions H and I

Linking the gain-framing experiment to the ethical taxonomy ideology to determine if the absolutists and the situationists would act differently, Table 25 below for certainty shows that the results are similar between absolutists and situationists in both the gain-framing and the control group. However, on Question I1, there is a difference in the gain-framing group between the absolutists M = 2.0, SD = 1.073 and the situationists M = 3.0, SD = 1.414; and in the control group for the absolutists M = 2.1, SD = 1.057 and the situationists M= 3.14, SD = 1.167.

Table 25: Absolutists vs. Situationists

Gain-framing					
GroupEPQ		N	Mean	Std. Deviation	Std. Error Mean
Certainty	Absolutists	34	4.18	0.989	0.170
	Situationists	20	4.15	0.705	0.158
I1 - gain-framing	Absolutists	34	2.00	1.073	0.184
	Situationists	20	3.00	1.414	0.316
I2 - gain-framing	Absolutists	34	2.88	1.472	0.252
	Situationists	20	2.75	1.251	0.280

Control-group					
GroupEPQ		N	Mean	Std. Deviation	Std. Error Mean
Certainty	Absolutists	40	4.41	0.562	0.089
	Situationists	14	3.83	0.566	0.151
I1 - Gain framing	Absolutists	40	2.10	1.057	0.167
	Situationists	14	3.14	1.167	0.312
I2 - Gain framing	Absolutists	40	2.73	1.339	0.212
	Situationists	14	2.64	1.151	0.308

The p-value should be less than $p < 0.05$ for it to be significant. The results in Table 26 show that in the control group on certainty, Z = -3.012 and p = 0.003, which is considered to be significant. In the gain-framing group, the results are Z = -2.553 and p = 0.01, and in the control group Z = -2.917 and p = 0.004). Question I1 tested participants' response to a potential financial gain are found to be significant. The remaining results are not significant, as the p-value is more than 0.05.

Table 26: Non-Parametric test

Test Statistics[a]

	Gain-framing				Control-Group			
	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Certainty	295.000	505.000	-0.825	0.41	133	238	-3.012772801	**0.003**
I1 - Gain framing	202.500	797.500	-2.553	**0.01**	141	961	-2.917291408	**0.004**
I2 - Gain framing	324.500	534.500	-0.284	0.78	277	382	-0.0632115	0.950

5.12 Correlations – for each Experimental Group

The Spearman's correlations test was deemed the most appropriate test for this experimental study. The Spearman's test is a non-parametric test and is used if the distribution of data is not normal. It tests the relationship and the strength of a relationship between two variables (Pallant, 2020). In addition, the sample size is not above 100 participants per group and therefore, the Spearman's test is more appropriate. The first step is to interpret the p-value, which needs to be less than 0.05 to be significant. If the p-value is found to be significant, then one interprets the strength of the relationship "weak: r = 0.10 to 0.29; moderate: r = 0.30 to 0.49; and strong: r = 0.5 to 1" (Cohen, 2003, pp. 79-81). Table 27 below for the loss-framing group depicts that there is a correlation between uncertainty and E2 - loss-framing (Question: If you expect the share price to increase, would you sell your shares?), most participants indicate that they are unlikely to sell, as p = 0.032 and has a weak negative correlation = -0.285. No other significant correlations are noted in this group.

Table 27: Correlations in the loss-framing group

Correlations							
Group: Loss-framing							
Spearman's rho		Idealism	Relativism	Uncertainty	E1 loss-framing	E2 loss-framing	E3 loss-framing
Idealism	Correlation Coefficient	1	-0.141	0.193	-0.032	-0.061	0.002
	Sig. (2-tailed)		0.294	0.151	0.814	0.652	0.988
	N	57	57	57	57	57	57
Relativism	Correlation Coefficient	-0.141	1	-0.090	0.205	-0.068	0.217
	Sig. (2-tailed)	0.294		0.506	0.126	0.615	0.106
	N	57	57	57	57	57	57
Uncertainty	Correlation Coefficient	0.193	-0.090	1	-0.210	-.285*	-0.156
	Sig. (2-tailed)	0.151	0.506		0.117	**0.032**	0.247
	N	57	57	57	57	57	57
E1 - Loss-framing	Correlation Coefficient	-0.032	0.205	-0.210	1	0.099	0.106
	Sig. (2-tailed)	0.814	0.126	0.117		0.465	0.432
	N	57	57	57	57	57	57
E2 - Loss-framing	Correlation Coefficient	-0.061	-0.068	-.285*	0.099	1	-0.109
	Sig. (2-tailed)	0.652	0.615	**0.032**	0.465		0.419
	N	57	57	57	57	57	57
E3 - Loss-framing	Correlation Coefficient	0.002	0.217	-0.156	0.106	-0.109	1
	Sig. (2-tailed)	0.988	0.106	0.247	0.432	0.419	
	N	57	57	57	57	57	57
*** Correlation is significant at the 0.05 level (2-tailed)** **p = significant**							

In the gain-framing goup depicted in Table 28 below, a significant correlation exists between I1 (if participants would sell their share, should they expect an increase in the share price) and relavitism. As the p = 0.012 and the correlation is 0.338, this indicates a moderate positive correlation.

Table 28: Correlations in the gain-framing group

Correlations						
Group: Gain-framing						
Spearman's rho		Idealism	Relativism	Certainty	I1 Gain-framing	I2 Gain-framing
Idealism	Correlation Coefficient	1	-0.017668558	0.21482101	-0.230166551	-0.123364455
	Sig. (2-tailed)		0.899	0.119	0.094	0.374
	N	54	54.000	54.000	54.000	54.000
Relativism	Correlation Coefficient	0	1	0	.338*	0
	Sig. (2-tailed)	0.899		0.054	**0.012**	0.415
	N	54.000	54	54.000	54.000	54.000
Certainty	Correlation Coefficient	0	0	1	0	0
	Sig. (2-tailed)	0.119	0.054		0.091	0.058
	N	54.000	54.000	54	54.000	54.000
I1 - Gain-framing	Correlation Coefficient	0	.338*	0	1	0
	Sig. (2-tailed)	0.094	**0.012**	0.091		0.236
	N	54.000	54.000	54.000	54	54.000
I2 - Gain-framing	Correlation Coefficient	0	0	0	0	1
	Sig. (2-tailed)	0.374	0.415	0.058	0.236	
	N	54.000	54.000	54.000	54.000	54
* Correlation is significant at the 0.05 level (2-tailed) p = significant						

In the control-goup presented in Table 29 below, a significant correlation exists between the following items:

- Idealism and uncertainty: p = 0.014 with a moderate postive correlation of 0.325;
- Idealism and certainty: p = 0.050 with a weak positive correlation of 0.263;
- Relativism and certainty: p = 0.000 with a moderate negative correlation of -0.479;
- Relativism and I1 (gain-framing): p = 0.000 with a strong positive correlation of 0.550;
- Uncertainty and E3 (loss-framing): p = 0.033 with a weak negative correlation of -0.285;
- Uncertainty and certainty: p = 0.000 with a strong positive correlation of 0.671;
- Uncertainty and I1 (gain-framing): p-value = 0.041 and a weak negative correlation of -0.274;
- E2 (loss-framing) and certainty: p-value = 0.015 with a moderate negative correlation of -0.324;
- E2 (loss-framing) and I1: p-value = 0.027 with a weak positive correlation of 0.295;
- I1 (gain-framing) and certainty: p-value = 0.000 with a moderate negative correlation of -0.482.

Table 29: Correlations in the control group

Correlations Group: Control group										
Spearman's rho		Idealism	Relativism	Uncertainty	E1 Loss-framing	E2 Loss-framing	E3 Loss-framing	Certainty	I1 Gain-framing	I2 Gain-framing
Idealism	Correlation Coefficient	1.000	-0.231	.325*	0.252	-0.092	-0.046	.263*	-0.078	0.179
	Sig. (2-tailed)		0.087	**0.014**	0.061	0.498	0.735	**0.050**	0.568	0.187
	N	56	56	56	56	56	56	56	56	56
Relativism	Correlation Coefficient	-0.231	1.000	-0.244	-0.028	0.183	0.238	-.479**	.550**	-0.048
	Sig. (2-tailed)	0.087		0.069	0.838	0.177	0.078	**0.000**	**0.000**	0.726
	N	56	56	56	56	56	56	56	56	56
Uncertainty	Correlation Coefficient	.325*	-0.244	1.000	0.207	-0.068	-.285*	.671**	-.274*	-0.164
	Sig. (2-tailed)	**0.014**	0.069		0.125	0.618	**0.033**	**0.000**	**0.041**	0.226
	N	56	56	56	56	56	56	56	56	56
E1 - Loss-framing	Correlation Coefficient	0.252	-0.028	0.207	1.000	-0.068	0.116	0.229	-0.248	-0.142
	Sig. (2-tailed)	0.061	0.838	0.125		0.617	0.395	0.089	0.065	0.298
	N	56	56	56	56	56	56	56	56	56
E2 - Loss-framing	Correlation Coefficient	-0.092	0.183	-0.068	-0.068	1.000	-0.042	-.324*	.295*	-0.042
	Sig. (2-tailed)	0.498	0.177	0.618	0.617		0.758	**0.015**	**0.027**	0.758
	N	56	56	56	56	56	56	56	56	56
E3 - Loss-framing	Correlation Coefficient	-0.046	0.238	-.285*	0.116	-0.042	1.000	-0.243	0.083	0.252
	Sig. (2-tailed)	0.735	0.078	**0.033**	0.395	0.758		0.071	0.543	0.061
	N	56	56	56	56	56	56	56	56	56
Certainty	Correlation Coefficient	.263*	-.479**	.671**	0.229	-.324*	-0.243	1.000	-.482**	-0.144
	Sig. (2-tailed)	**0.050**	**0.000**	**0.000**	0.089	**0.015**	0.071		**0.000**	0.291
	N	56	56	56	56	56	56	56	56	56
I1 - Gain-framing	Correlation Coefficient	-0.078	.550**	-.274*	-0.248	.295*	0.083	-.482**	1.000	0.071
	Sig. (2-tailed)	0.568	**0.000**	**0.041**	0.065	**0.027**	0.543	**0.000**		0.605
	N	56	56	56	56	56	56	56	56	56
I2 - Gain-framing	Correlation Coefficient	0.179	-0.048	-0.164	-0.142	-0.042	0.252	-0.144	0.071	1.000
	Sig. (2-tailed)	0.187	0.726	0.226	0.298	0.758	0.061	0.291	0.605	
	N	56	56	56	56	56	56	56	56	56

*** Correlation is significant at the 0.05 level (2-tailed)**
p = significant

5.13 Comparisons Between Experimental Group

An independent t-test was used for comparisons, because the test is reasonably robust to detect differences, and it is a stricter test than a non-parametric test. The reason for executing the t-test was to compare results between the loss-framing group vs the control-group, and between the gain-framing vs the control group. The group sizes are similiar and large enough as each group consists of more than 50 participants. If the t-test is conducted on a sample of greater than 40 participants, the t-test is very robust to identify violations (Nishishiba, Jones, & Kraner, 2017). For such a sample size, it is recommended that statistical analysis be performed using the parametric test, if possible, and that the normality of the data would be confirmed first through the Levene's test for equality by this parametric test.

Comparing of results between the loss-framing group vs the control-group, on question E1 a difference can be seen, where the loss-framing-group records M = 3.3, SD = 1.388, and

the control group records M = 3.88 and SD = 1.192. Therefore, the loss-framing group leans more towards neutral and the control group is more likely to sell their shares to avoid a financial loss.

Table 30: T-Test means loss-framing vs control group

T-Test Comparisons between the loss-framing and the control-group Group Statistics					
constructs	groups	N	Mean	Std. Deviation	Std. Error Mean
Uncertainty	Loss-framing	57	3.86	0.968	0.128
	Control-group	56	3.96	0.917	0.123
E1 - Loss-framing	Loss-framing	57	3.30	1.388	0.184
	Control-group	56	3.88	1.192	0.159
E2 - Loss-framing	Loss-framing	57	2.23	1.053	0.139
	Control-group	56	2.13	1.096	0.147
E3 - Loss-framing	Loss-framing	57	3.09	1.353	0.179
	Control-group	56	3.05	1.102	0.147

The Levene's test for equality test states that if variances are equal, if the $p > 0.05$, then the variance is equal. The t-test for equality of means that when the $p < 0.05$, then there is a statistically significant difference. For uncertainty and E2, an equal variance is assumed and for E1 and E3, equal variances are not assumed. E1 records $p = 0.02$, and therefore, it is statistically significant.

Table 31: Independent T-Test results

Independent Samples Test - Comparisons between the loss-framing and the control-group										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Uncertainty	Equal variances assumed	0.475	0.492	-0.556	111	0.579	-0.099	0.177	-0.450	0.253
E1 - Loss-framing	Equal variances not assumed	5.494	0.021	-2.371	109.049	**0.020**	-0.577	0.243	-1.059	-0.095
E2 - Loss-framing	Equal variances assumed	0.009	0.927	0.510	111	0.611	0.103	0.202	-0.298	0.504
E3 - Loss-framing	Equal variances not assumed	3.995	0.048	0.147	107.337	0.883	0.034	0.232	-0.426	0.494

Comparing the results between the gain-framing group vs the control group reflects the participants' decision-making process being in the same direction with no significant difference to report.

Table 32: T-Test means gain-framing vs control group

T-Test Comparisons between the gain-framing and the control-group Group Statistics					
constructs	groups	N	Mean	Std. Deviation	Std. Error Mean
Certainty	Gain-framing	54	4.17	0.887	0.121
	Control-group	56	4.24	0.615	0.082
I1 - Gain-framing	Gain-framing	54	2.37	1.293	0.176
	Control-group	56	2.36	1.151	0.154
I2 - Gain-framing	Gain-framing	54	2.83	1.384	0.188
	Control-group	56	2.70	1.292	0.173

For the certainty factor, equal variance is assumed and for I1 and I2, equal variances are not assumed for certainty. All the p-values for the gain-framing group vs the control group are not statistically significant.

Table 33: Independent t-Test results

Independent Samples Test -Comparisons between the gain-framing and the control-group										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Certainty	Equal variances not assumed	5.216	0.024	-0.489	94	0.626	-0.071	0.146	-0.361	0.219
I1 - Gain-framing	Equal variances assumed	1.767	0.187	0.057	108.000	0.955	0.013	0.233	-0.449	0.475
I2 - Gain-framing	Equal variances assumed	0.429	0.514	0.536	108	0.593	0.137	0.255	-0.369	0.643

5.14 Conclusion

The preceding chapter presented a complete set of results underpinned by the experimental study, which was conducted to determine the role of uncertainty and loss-framing in ethical decision-making by accountants. An in-depth discussion on the results, its findings, its interpretation and the outcome of the hypotheses for this experimental research will be covered in Chapter 6.

CHAPTER 6: RESULTS DISCUSSION

6.1 Introduction

The purpose of this experimental study was to determine the role or influence of framing on an individual's ethical decision-making process. In addition, it further explores if a participant's taxonomy can be used to differentiate ethical decision-making behaviour.

Chapter 5 described the statistical analysis that was performed from primary data collected through the experimental groups, referred to as the loss-framing group, the gain-framing group, and the control group. This chapter will focus on the interpretation of the results from the experiment relevant to the literature review covered in Chapter 2.

The discussion of the results is grouped into seven sections, leading with demographics and ethical positioning; thereafter, the four main sections are covered, referring to loss-framing, gain-framing, uncertainty and certainty, and normality correlations. This structure was selected by the researcher to discuss results under one heading, and link it to the hypotheses that were tested. It will therefore pull on the various sections from Chapter 5 to provide overall results relevant to a specific construct (only main constructs per section). The inverse question in each main construct was to check for control and see whether the result went in the opposite direction. The benefit of this approach was that each section was discussed once with all relating results. The limitation was that the results were compartmentalised, and this might dilute the robustness of the experimental study.

6.2 General Demographics

The key demographic information of participants in this study were that the study was limited to accountants. The qualifying question ensured that accountants completed the questionnaire and as per Table 2, 167 accountants completed the questionnaire. On the education demographics presented in Table 6, and as one would expect an accountant to have a degree, this was confirmed by the results of the participants, with 160 (96%) of the participants holding a degree. First-tier finance executives have the responsibility of making highly complicated decisions on a daily basis, which may results in significant financial losses for their respective companies (Small & Lew, 2019). This study focused on a broad spectrum of accountants and Table 5 indicated that 79% of all participants were middle to senior managers. Finally, from a work experience perspective, Table 7 showed that the majority of the participants (138 or 82%) were well established in their career,

having work experience of 6 years or more, with half (50% of the 82%) of participants having 11 years or more of work experience.

6.3 Ethical Positioning Questionnaire

The EPQ questionnaire determines an individual's ethical positioning. The reason for determining the participants' ethical positioning was to determine if the EPQ could be used as a predictor or differentiator on accountants' ethical behaviour throughout this experimental study. In Table 12, idealism scores were higher than the relativism scores. Idealism: Participants who rank high on this factor try mostly to avoid harm by believing in a good outcome with the appropriate action that can always be achieved. By comparison, relativism is inclined to reject the universal morals (Davis et al., 2001). Individuals who rank high on relativism would be inclined to be less ethical as a result of self-interest, and their ethical decision-making is often questionable (Mudrack & Mason, 2020).

The results showed that the majority of accountants were absolutists 103 (62%). This meant that they scored high on idealism and low for relativism (as depicted in Figure 8). Therefore, their ethical decisions were made through universal conformity or accepted/acceptable decisions (Forsyth, 1992). The 59 situationist participants (35%), high on both relativism and idealism, rejected moral rules, depending on the situation that might give a better outcome (Forsyth, 1992). Therefore, from these results one could deduce that 59 (35%) of the accountant's ethical behaviour might change, given the change in context or situation. The group of participants who fell into the exceptionists category 2 (1%) and subjectivists 3 (2%) was too small to perform valid statistics and were therefore excluded from further consideration when statistics were performed on an accountant's ethical ideology on the constructs being tested throughout this experiment. Therefore, individual questions or grouped questions (certainty and uncertainty were grouped due to them having internal validity) were guided by the reliability test, the Cronbach's alpha. The results were analysed further to determine whether an individual, classified as an absolutists and situationists through the ethical positioning questionnaire, would react differently to the same question/s.

6.4 Loss-framing Questions Experiment

The objective of the loss-framing section of the experiment was to test if accountants' ethical decision would be influenced if a situation were portrayed as a potential loss. This

tested hypotheses H1, H3, and H4. The rational theory posits that if an individual is confronted with a decision, they will choose the decision that maximises their own interest (Mathis & Ariel, 2015). The framing of the first two questions had an underlying ethical element and was framed negatively for accountants. However, the predictive nature of human bias explains that individuals will respond and behave differently depending on the specific conditions, settings or the situation faced (Bazerman & Sezer, 2016). Therefore, framing conditions might have an impact on individuals, even if they have the best intentions.

- **Experiment – Question E1**

You are the Finance Manager, and you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years, which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware of a massive earnings shortfall and potential write-downs that are on the horizon for this financial year, which might cause the share price to fall by 50%.

> *As of now, your analysis suggests that you have a 90% chance of losing 50% of the value and a 10 % chance of the share price remaining at current levels. How likely are you to sell your share in the company? (1 = very unlikely, 5 = very likely)?*

The mean response of the overall results presented in Table 14 showed a mean of 3.6 (likely) and mode of 4, which was indicative of unethical behaviour. Insiders have first-hand knowledge of any event and information before it is made public; therefore, it is suspected that their sales are based on confidential information (Alldredge & Cicero, 2015). The participants would be using insider trading information to avoid a financial loss due to the potential massive earnings shortfall. Accountants would have access to and knowledge of this information in carrying out their duties. The ethical decision to this question would have been that accountants should not trade their shares until the information is released to the public and everyone is on an equal playing field. Insider trading is using information for oneself or a third party for a direct or indirect financial benefit. Officially, accountants should not be using non-disclosed confidential information, as per the laws relating to financial markets in South Africa (Chitimira, 2016).

Further analysis within the two groups (the loss-framing group and the control group) was conducted. In the loss-framing group, the absolutists and the situationists acted differently when making their decision, with the former leaning towards neutral and the latter being more likely to sell their shares. The control group's responses between absolutists and situationists indicated that both groups were likely to sell their shares. The difference between the loss-framing and the control group on E1 was that absolutists in the loss-framing group were neutral; and in the control group, absolutists were likely to sell their shares. This was indicative of individuals who were considered more universally ethical on the taxonomy and therefore, it was interesting to note that there was a difference between the two groups regarding the ethical behaviour of the absolutists.

The Mann Whitney U test in Table 19 showed that there was a significant difference in the loss-framing group between absolutists and situationists in their ethical decision-making for question E1, where p = 0.025 and was less than 0.05, indicating significant differences in their ethical decision-making in selling shares to avoid a financial loss. However, question E 1 did not yield a significant difference for the same question being tested in the control group. The independent t-test comparisons between groups (Tables 30/31) showed that there was a statistically significant difference on question E1 between the loss-framing group and the control group with p = 0.02. Therefore, the control group was more likely to sell their shares to avoid a financial loss when the situation was framed negatively as opposed to the reactions by the loss-framing group.

- **Experiment – Question E3**

You are the CFO and are busy reviewing the annual bonus calculation. The calculation seems reasonable; however, you notice that the shortfall for the firm to qualify for the bonus is missed by 0.5%. This means that no-one would be entitled to receive a bonus for this financial year. The bonus for yourself as CFO is equivalent to 100% of your annual salary. There is one provision that has been raised for this financial year; however, it could be delayed to the next financial year. The deferral of this provision will result in the firm being able to pay out bonuses.

> *How likely are you to approve the deferral of this provision? (1 = very unlikely, 5 = very likely)?*

There are various types of unethical behaviour, which include unethical decision-making, stealing from one's employer or misrepresenting a company's financial performance. In addition, a potential financial benefit has the potential to dilute an individual's moral

capacity (Thau, Derfler-Rozin, Pitesa, Mitchell, & Pillutla, 2015). This question tested if the participants would defer a valid provision to avoid a personal financial loss as well as a loss to other individuals. Overall, the 113 participants scored a mean of 3.1 and a mode of 4. The mode was indicative of the fact that most participants either were not able to identify the underlying ethical component of this question or they chose the financial benefit, therefore their decision was unethical. The mean leant towards neutral. The valid provision should be processed, but due to the nature of a potential financial loss to the accountants due to them not going to receive a bonus, the majority indicated that they would process the journal, signalling unethical manipulation of results to facilitate the bonus payment.

Further analysis was conducted within and between the two groups (the loss-framing group and the control group) who responded to this question. In the loss-framing group and the control group, the absolutists and the situationists acted similarly in their decision, leaning towards neutral. There was also no notable difference between the loss-framing group and the control group when comparing the results with one another, where absolutists and situationists in each group leaned towards neutral.

The Mann Whitney U test in Table 19 showed that there was no significant difference between the absolutists and situationists in their ethical decision-making for question E3. The independent t-test confirmed that there was no statistically significant difference between the loss-framing group and the control group.

- **Experiment – Question F2**

Which of the following would you choose?
A = A sure loss of R750 000
B = A 75% chance to lose R1 000 000 and a 25% chance to lose nothing.

In Table 14, the majority (78) of the participants (69%) chose option B. Even though this question did not have an underlying ethical component, it tested the participants' response to the Prospect theory. Numerous studies had been done on the Prospect theory, and the most notable outcome of the Prospect theory was that a decision needed to be made between alternatives, and the conclusion was that individuals, when confronted with an alternative, will always try to avoid a loss (Sokol-Hessner & Rutledge, 2019). A similar study done by Kahneman and Tversky (2000) showed that 100% of the participants would

avoid a sure loss. Therefore, the results of both studies showed that individuals will try to avoid a loss.

In Figure 10, the loss-framing group and the control group had similar responses from situationists and the absolutists, with the majority avoiding a sure loss. There was no significant difference between the two groups. The majority of the participants would rather take a chance with option B, where the participants would have the chance to lose nothing.

The Fisher exact test was done to determine the statistical significance of this question. The loss-framing group recorded 0.394 and the control group recorded 0.745. The results indicated that no statistical significance existed between the absolutists and situationists, as the p-value should be less than 0.05 to be significant.

In conclusion, the mode or most common answer on the two ethical questions indicated that accountants would tend to behave unethically. In addition, the mean indicated that accountants were either neutral or likely to behave unethically. It should be noted that this result should be compared to gain-framing to determine the likely difference in responses for H1 and H3 for an overall conclusion. H3 – the perceived likelihood of financial loss − resulted in an increase in unethical decision-making, where individuals were likely to avoid a financial loss. The Hypothesis H1 – ethical decision-making − was affected by framing a situation as either positive or negative. This was part of the financial loss scenarios, which were framed negatively and consequently, accountants were more likely to behave unethically when a scenario was negatively framed. The Hypothesis H4 – taxonomy of personal moral philosophy − can differentiate an individual's ethical behaviour. In question E1 for the loss-framing group, there was a significant difference between absolutists and situationists; however, in the control group there was no significant difference between the two sub-categories, and in question E3 no difference was noted. Therefore, the result was not conclusive in its ability to differentiate ethical behaviour between absolutists and situationists.

6.5 Gain-framing Experiment

The objective of the gain-framing section of the experiment was to test the inverse situation, where accountants' ethical decisions take place if the situation and conditions are under normal conditions, implying a stable environment with no indicated personal financial loss or underlying ethical considerations. This was to test hypotheses H1, H3, and H4. Research clearly showed that individuals were not as sensitised to a gain as opposed to a loss, meaning that individuals under gain-framing conditions will act more ethically (Schindler & Pfattheicher, 2017). The framing of the two questions below had no underlying ethical element in the decision-making.

- **Experiment – Question I1**

You are a Finance Manager; you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years, which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware that the company is currently doing very well, and this might cause the share price to increase by 50% in the near future.

> *As of now, your analysis suggests that there is a 90% chance of a 50% gain in the share price. How likely are you to sell your share in the company? (1 = very unlikely, 5 = very likely).*

In the gain-framing question conditions above, accountants were unlikely to sell their shares if a situation was framed as a gain, also taking into account that there was no unethical element to the question, therefore the accountants seemed to hold on to their shares. The mean of participants being unlikely to sell their shares was 2.4 with a mode of 2.

Results from question I1 indicated that there was a difference between absolutists and situationists in their responses in both the gain-framing group and the control group. The absolutists in both groups were unlikely to sell their shares, and the situationists were neutral.

This was confirmed by the Mann Whitney U test, where there was a statistically significant difference between the absolutists and situationists in each group. The gain-framing group had a p-value of 0.01 and the control group a p-value of 0.004, which was less than 0.05; therefore, absolutists and situationists' decisions differed to the same question being tested. There was no statistical difference as confirmed by the t-test between the gain-framing group and the control group, as the p-values were more than 0.05.

- **Experiment – Question F1**

Which of the following would you choose?
A = A sure gain of R240 000
B = A 25% chance to gain R1 000 000 and a 75% chance to gain nothing.

In Table 14 out of the 113 overall participants 87 (77%) would choose a sure gain. A similar study by Kahneman and Tversky (2000), showed that 84% of the participants would select a sure gain. In Figure 9, we investigate if there would be a difference between the situationists and the absolutists. In the loss-framing and the control group the absolutists and situationists prefer answer A, a gain over a loss there is no significant difference between absolutists and situationists. This is reflective that the majority of the accountants prefer a sure gain as opposed to taking a chance with option B where the participants have an opportunity of higher gain, but the risk of losing is also higher indicating the risk averseness of accountants.

The Fisher exact test was done to determine the significance of this question between absolutists and situationists. The loss-framing group 0.766 and the control group 0.706. The results indicated that no statistical significance exists as the p-value should be less than 0.05 to be significant.

In conclusion the mode or most common answer on the gain-framing questions indicated that accountants would tend to behave ethically in a "normal/stable environment" and therefore the hypothesis of H3 – the perceived likelihood of financial loss results in an increase in unethical decision-making (the relationship is dependent on the financial aspect). This tested the inverse "gain" question I3 indicated that accountants are unlikely to behave unethically in their decision-making. The Hypothesis H1 – ethical decision-making is affected by framing a situation as either positive or negative, the questions were framed positively and therefore unlikely unethical behaviour in accountants. The

Hypothesis H4 – taxonomy of personal moral philosophy can differentiate an individual's ethical behaviour, in the loss-framing and control group there was a significant difference between absolutists and situationists. Therefore, the result on question I1 seems to be able to differentiate ethical behaviour between absolutists and situationists. However, on prospect theory F1 there was no significant difference.

6.6 Uncertainty Experiment

Employees from various professions have to make decisions where there is competing priorities, high risk environments, with limited information and under conditions of uncertainty (Alison et al., 2015). In an increasing uncertain operating environment where the landscape is competitive how does this influence the ethical decision made by accountants? Trevino (1986) developed a model for ethical decision-making called the "person-situation interactionist model", the process has various factors which includes individual elements, i.e., stage of moral development, and contextual variables which includes organisational culture and uncertainty as a precursor to ethical dilemmas (Trevino, 1986). Accountants find themselves in situations where they have to make predictions about the financial future and welfare of an organisations sometimes with very limited information, which can inhibit the company's survival. "Chugh et al. (2005) posits ethicality is bounded in systematic ways that unconsciously favour a particular vision of the self in our judgements (p. 9)". Therefore, through the literature it is indicated that an individual's consciousness, experiences and automaticity can result in individuals making unethical decisions. The following question tested H2 and H4.

- **Experiment – Question D1 & D2**

You are the CFO/Finance manager, your company is currently experiencing extremely volatile times, the financial position is weak and there is high level of uncertainty that the company will be in operation in the next 6 months. To compound the already dire situation one of the subsidiaries has seen a material decline in demand for its product and requires an impairment to reflect the true asset value of its operation.

> *Q1- Your analysis suggests that should the impairment be posted there is a 90% chance that the business will go into business rescue. How likely are you to process the journal? (1 very unlikely, 5 very likely).*

The majority of the participants indicated that they would process the journal. Table 14, M=4.2, and a mode of 5. The business rescue practitioners will effectively takeover the business. The results of this question are surprising as most business that are taken over by business rescue practitioners are generally insolvent and liquidation is imminent and at best to salvage some funds through asset disposal to pay the creditors a small portion of what is truly owed to them. Business turnaround through business rescue to normal business operations is estimated at 8% (Terblanche, 2014).

> Q2 - Your analysis also suggests that should the impairment be posted, there is a 90% chance that the business will retrench employees which includes you. How likely are you to process the journal? (1 very unlikely, 5 very likely)

Here the majority of the participants would still process the journal. The mean of 4.0 and mode of 4.0 from the 113 participants. The majority would process the journal even if they stand to lose their employment indicating ethical behaviour. Therefore, consequence of losing their job was not the antecedent to their decision. There was no difference between absolutists and situationists in the loss-framing group, but there was a difference in the control group between absolutists and situationists. The results between groups loss-framing and controlled group, no difference existed.

There is no significant difference between absolutists and situationists participants in the loss-framing group. However, in the control group there was significant difference on uncertainty between absolutists and situationists (see Table 19) as the p-value was 0.035. The results are inconclusive in determining a difference between absolutists and situationists. In the control group it is significant and not significant in the loss-framing group. The independent t-test showed that there were no significant differences between the loss-framing and the controlled group.

- **Experiment – Question G1**

The following questions also tested uncertainty and were simulated question to see how participants would react if their decision would have a bearing on the final outcome. The questions were designed to test how an individual would respond in a situation where business survival was critical from a financial perspective.

Based on the majority of the responses, the following company will implement the decision. The company is in the final stage of its negotiations, for the disposal of one of its subsidiaries. The company really needs the disposal to be signed off within the next week, as they are reliant on the cash inflow from this disposal to ensure that the whole company is not placed under business rescue. The decision is crucial, as time is of the essence. During the final review, a reporting error has been identified.

> *What would your recommendation be: To sign the document to ensure the company's viability or not to sign the document?*

The results indicated that the majority of the participants would not approve the transaction. This was based on the stated fact that an error had been found prior to the final approval of the document. The loss-framing group (43 or 79.6%) and the control group (42 or 77.8%) indicated that they would not sign the document (table 23). What was surprising from this result was that the statement in this scenario did not indicate whether the error was a material or a minor error. However, due to following an ethical decision-making process, the correct approach would be to not sign the document and first determine the nature and the impact of the error. The situationists acted in a way that was similar to the absolutists, although one would have expected in such an unspecified or vague error identification that the two groups' decision would have been different.

Absolutists and situationists, no statistically significant difference were identified, as the Fisher's exact test for the loss-framing group was 0.517 and for the control group it was 0.261.

In conclusion, in an environment of uncertainty, from an ethical perspective, the majority of the participants – who were all currently employed accountants − were likely to act ethically in all three of the above experiments. Therefore, the H2 hypothesis – The higher the level of uncertainty, the less ethical individual becomes (the relationship is inverse). Therefore, this part of the hypothesis is being disproved, however we still have to consider the certainty element (inverse) to give and overall view. Hypothesis H4 – regarding the assumption that taxonomy of personal moral philosophy can differentiate an individual's ethical behaviour (absolutists and situationists), in the loss-framing group, there was no significant difference between the absolutists and the situationists. However, in the control group, there was a significant difference between absolutists and situationists. The researcher determined these results to be inconclusive, as the loss-framing group did not

differ significantly, while the control group's results were significant. Therefore, the null hypothesis can neither be accepted nor rejected in this scenario.

6.7 Certainty Experiment

The objective of the certainty section of the experiment was to test the inverse situation of accountants' ethical decisions in cases where the situation and conditions were predictable and stable. This was to test hypotheses H2 and H4.

- **Experiment – Question H1**

You are the CFO/Finance Manager of a company operating in a stable environment. The company's financial position is good and there is a high level of certainty that the company will be in operation in the next 2 years. One of the subsidiaries has seen a decline in the demand for its products and requires an impairment to reflect the true asset value of its operation.

> *Your analysis suggests that should the impairment be posted, there will be an insignificant impact on the Group results. How likely are you to process the journal? (1 = very unlikely, 5 = very likely)*

The combined 110 participants in the gain-framing and the control group indicated that they would post the journal due to the company's stable environment and having access to all the relevant information in an environment of certainty. The mean score of 4.4 and mode of 5 indicated a higher-level of ethical behaviour.

> *Your analysis also suggests that even if the impairment is posted, there is no chance that the business will retrench employees. How likely are you to process the journal? (1 = very unlikely, 5 = very likely).*

The combined 110 participants from the gain-framing group and the control group indicated that they would post the journal due to the stable environment and having access to all the relevant information in an environment of certainty. The mean score of 4.5 and mode of 5 indicated a higher-level ethical behaviour.

In the certainty experiment for the control group, the Mann Whitney U test indicated that there was a statistically significant difference between the absolutists and the situationists, recording a p-value of 0.003 (table 26). However, the results were not conclusive, as the gain-framing group indicated no significant difference between the absolutism and the

situationists. The independent t-test between the gain-framing and the control group showed that there were no statistically significant differences. In conclusion, in an environment of certainty from an ethical perspective, the majority of the participants were likely to act ethically. Therefore, the H2 hypothesis – The higher the level of uncertainty, the less ethical individuals become (the relationship is inverse) Therefore, this part of the hypothesis is being proved. The overall conclusion for H2 is, the null hypothesis can neither be accepted nor rejected. Certain and uncertain environments did not seem to be inverse, as accountants in both situations were likely to act ethical. Hypothesis H4 – taxonomy of personal moral philosophy can differentiate an individual's ethical behaviour (absolutists and situationists), in the gain-framing group there was no significant difference between the absolutists and the situationists. However, in the control group, there was a significant difference between the absolutists and the situationists. The researcher determined these results to be inconclusive as the gain-framing group results were not significant and the control group results were significant. Therefore, the null hypothesis can neither be accepted nor rejected in this scenario.

6.8 Normality and Correlations

The test for normality the Kolmogorov-Smirnov[a] was executed on all groups. The loss-framing group, the gain-framing group and the control group's results indicated that the data was not normally distributed. For data to be normally distributed, the p-value should be above 0.05.

The study found some significant correlations between variables in the various experimental groups.

Loss-framing group, Table 27. There was a significant correlation between uncertainty and E2 loss-framing of 0.032 and a weak negative correlation of -.285, in situations of uncertainty and where the share price was expected to increase (question E2). In cases of uncertainty, accountants were more likely to behave ethically and in question E2, the accountants stated that they were unlikely to sell their shares if they expected the share price to increase. Therefore, the relationships were negative.

Gain-framing group, Table 28. There was a significant correlation between relativism and I1 (gain-framing) of 0.012 and a moderate positive correlation of 0.338. This indicated

that relativists would sell their shares even if the share price was expected to increase, while relativists reject universal behaviour.

Control group, Table 29:

- There was a significant correlation between idealism and uncertainty of 0.014 and a moderate positive correlation of 0.325. Idealists' belief in a good outcome and uncertain environments resulted in a likely more ethical behaviour. Thus, it was positively correlated.
- There was a significant correlation between idealism and certainty of 0.05 and a weak positive correlation of 0.263. Idealists' belief in a good outcome and certain environments resulted in a likely more ethical behaviour as well, thus a positive correlation.
- There was a significant correlation between relativism and certainty of 0.000 and a moderate negative correlation of -0.479. Certain environments caused a likely more ethical behaviour; however, relativists were more neutral, rejecting universal behaviour, thus resulting in a negative correlation.
- There was a significant correlation between relativism and I1 gain-framing of 0.000 and a strong positive correlation of 0.550. I1 gain-framing tended to lean towards a neutral response on ethical behaviour, and relativist also tended to lean towards a neutral response, therefore resulting in a strong positive correlation.
- There was a significant correlation between uncertainty and E3 loss-framing of 0.033 and a weak negative correlation of -0.285. In the loss-framing group, accountants tended to lean towards a neutral response, and in uncertainty, they were more likely to behave ethically, hence a negative correlation.
- There was a significant correlation between certainty and uncertainty of 0.000 and a strong positive correlation of 0.671. This correlation was indeed a surprise as accountants' behaviour was similar in both uncertain and certain environments.
- There was a significant correlation between uncertainty and I1 gain-framing of 0.041 and a weak negative correlation of -0.274. In the gain-framing scenario, accountants were unlikely to sell their shares if they expected the price to increase, and in uncertain environments, accountants were more likely to act ethically, hence a negative correlation.
- There was a significant correlation between E2 loss-framing and certainty of 0.015 and a moderate negative correlation of -0.324. In the inverse loss-framing question, accountants were unlikely to sell their shares if no loss was expected,

and in uncertain environments, accountants were likely to behave ethically, therefore a negative correlation.

- There was a significant correlation between E2 loss-framing and I1 gain-framing of 0.027 and a weak positive correlation of 0.295. In the inverse loss-framing question, accountants were unlikely to sell their shares if no loss was expected, and in the gain-framing scenario, where accountants expected the share price to increase, both groups were unlikely to sell their shares, therefore a positive correlation.
- There was a significant correlation between I1 gain-framing and certainty of 0.000 and a moderate negative correlation of -0.482. In the gain-framing question, accountants were unlikely to sell their shares. Certain environments caused a likely more ethical behaviour thus resulting in a negative correlation.

6.9 Conclusion

This chapter discussed the main results of the experimental study and the research objectives, which was supported by the literature review. The following were the overall conclusions of this experimental study on accountants:

H1 – Ethical decision-making is affected by framing a situation as either positive or negative – Positively-framed situations were unlikely to affect the ethical behaviour, while negatively-framed situations were likely to affect ethical behaviour, therefore, the null hypothesis is accepted.

H2 – The higher the level of uncertainty, the less ethical individuals become (the relationship is inverse) Both certainty and uncertainty were likely to result in ethical behaviour; therefore, the null hypothesis cannot be accepted or rejected.

H3 – The perceived likelihood of financial loss results in an increase in unethical decision-making (the relationship is dependent on the financial aspect). – Financial loss was likely to increase the unethical behaviour among accountants, while expected financial gains were unlikely to affect ethical behaviour, therefore, the null hypothesis is accepted.

H4 – Taxonomy of personal moral philosophy can predict an individual's ethical behaviour (limited to absolutists and situationists) - Differentiation between ethical behaviour of the absolutist and situationist groups were inconsistent and inconclusive; therefore, the null hypothesis can neither be accepted nor rejected.

CHAPTER 7: CONCLUSION

7.1 Introduction

This experimental research aimed to obtain an understanding of the role of uncertainty and loss-framing in ethical decision-making by accountants. An experimental questionnaire was developed to explore these constructs. In addition, the taxonomy of the individuals' personal moral philosophy was an integrated part of the study to determine if a different classification of individuals (absolutists and situationists) would react differently to the same experimental questions and act differently in the stated scenarios.

Ethical dilemmas are a common occurrence in South Africa and around the globe. These dilemmas often have a financial or accounting irregularity attached to them, as explained in Chapter 1. In addition, there has been a decline of trust in accountants and auditors as they have a fiduciary duty to the companies and the wider society as the companies' gatekeepers. This fact motivated the necessity to conduct this study and to provide an understanding as to which framed situations would lead accountants to deviate from their ethical decision-making process. The limited literature on accountant's ethics highlighted the need for this study, which included accountants' ethical behaviour and the applicable theory in an accounting environment (Christensen, Cote, & Latham, 2018).

7.2 Findings

In terms of determining the role of framing (bounded ethicality) and taxonomy of personal moral philosophy, the research tested four hypotheses with their key finding summarised below.

The Prospect theory posited that an individual behaves differently in their decision-making, if confronted with a positive gain or negative loss scenario (Ganegoda & Folger, 2015). Greene and Haidt (2002) stated that the brain's ability to make decisions automatically could be linked to framing, as this cognitive process is inherent to an individual's decision-making process. It was based on the Prospect theory, which stated that there are differences in the ethical decisions if a situation is framed negatively as opposed to positively. Key finding number one was that if a situation were to be framed positively to accountants, such situation would be unlikely to affect their ethical behaviour, while negatively-framed situations were likely to affect ethical behaviour. Therefore, these finding were supported by the Prospect theory.

Uncertainty is a part of the Prospect theory. Ethical decision-making can be complicated by elements such as market volatility, unpredictability and uncertainty (Zeni et al., 2016). Hoitash, Hoitash, and Kurt (2016) argue that accountants are generally considered to be risk averse and sensitive to uncertainty. In contrast, the Hofstede cultural dimensions model for South Africa indicated that South Africans seem to embrace uncertainty. Key finding number two in this study was that both certain and uncertain environments were likely to result in ethical behaviour. This is contrary to the Prospect theory and was an interesting result for this experimental study on accountants. Accountants from this experiment were more aligned with the South African norm on the uncertainty "cultural dimension" and embraced uncertainty.

The next construct was also based on the Prospect theory, referring to the perceived likelihood of financial loss, which resulted in an increase in unethical decisions being made. Chugh and Kern (2016) argue that framing is when an individual is psychologically limited, restricted, or confined to a situation they are facing. Prospect theory is where gains and losses are evaluated inversely, and individuals are more sensitive to a loss-framed scenario as opposed to a gains-framed scenario. Kahneman and Tversky (1979) argued that the Prospect theory can be used in different settings and contexts, and that the outcome would be that losses would not be evaluated the same as gains. The disposition effect that was seen as a counter argument for the Prospect theory was not relevant for this study, as the questions tested potential future loss situations. In addition, the other drawback of the Prospect theory was that it did not take any other variables into account such as emotions, which were also not considered in this study. Key finding number three, a financial loss for an accountant, in this study was found to be likely to increase their unethical behaviour, while financial gains were unlikely to affect their behaviour. Therefore, the key finding supported the Prospect theory.

The last key finding was based on the taxonomy of the personal moral philosophy. Forsyth developed the EPQ and argued that it had the capability of prudently depicting an individual's ethical and moral viewpoint (Forsyth, 1980, 1992). This instrument had been successfully used in many previous studies. Davis et al. (2001) argued that the instrument had weak control over the relativism for validity. In this study when analysing the effect of moral philosophy, the use of the instrument was to determine if there was a difference in ethical behaviour between accountant absolutists and situationists. Key finding number four was that the EPQ did not have the ability to differentiate ethical behaviour between

absolutists and situationists, as findings were inconsistent and inconclusive for this study on accountants, thus the null hypothesis cannot be accepted or rejected.

7.3 Implications for Accountants

The results of the research on uncertainty and loss-framing for accountants determined the effect that these constructs have on ethical decision-making by accountants. The findings can assist accountants to be more aware of framing or bounded situations that could reduce their ability to make ethical decisions in the business environment.

The loss-framing construct in the research showed that when accountants were confronted with a scenario framed as a loss, this could likely result in an unethical behaviour among accountants. Therefore, based on the findings of this research, practical guidance is provided to assist in identifying potential unethical behaviour. First, accountants should be aware that when a situation is framed as a loss or is negatively framed, this is likely to influence their ethical decision-making process. Second, if the framed scenario has a potential financial loss for the accountants, then they should be aware that this is likely to increase unethical behaviour. Therefore, the practical solutions to the risk of unethical behaviour occurring puts the responsibility at the door of the accountants to recognise that loss-framing has this impact and that they should be strictly guided by the company's policies and procedures to avoid acting unethically. Accountants play an instrumental role in an organisation in both enforcing and complying with policies and procedures (Lindsay, Lindsay, & Irvine, 1996). Accountants have the fiduciary and moral responsibility to act ethically at all times and in the interest of all stakeholders (Carson, 2003). Therefore, identifying which framed scenario is likely to contribute to unethical behaviour might be the beginning to restore the moral fibre and recreate trust in accountants by the wider society. Accountants will have to guard against being influenced or swayed by self-interest (especially from a financial perspective) when confronted with a potential financial loss.

The uncertainty construct in this study was unlikely to contribute to unethical behaviour by accountants and therefore, no practical guidance will need to be provided.

7.4 Implications for Business Leaders and Accounting Bodies

The implication for business leaders and accounting bodies will be explored next, relating to the construct of loss-framing on ethical decisions made by accountants.

The first practical guidance for business leaders is to pivot their Code of Professional Conduct training to include elements of framing. Generally, a generic Code of Conduct training is conducted on all employees annually within an organisation (Endenich & Trapp, 2020). This Code of Conduct should include the effect of framing and test annually that accountants are aware that framing, specifically loss-framing, might have on their ethical decision-making process. This will increase the awareness that loss-framing has on ethical decision-making. The second practical guidance is for business leaders when confronted with situations that need to be framed negatively and that have a loss component to provide leadership to the financial gatekeepers as well as the senior decision-makers who could directly or indirectly exert and influence over the decisions being made, and ensure that ethical policies and procedures are consistently and transparently followed at all times, irrespective of the specific situation. Leaders set the ethical tone and ethical culture within an organisation. Leaders who only focus on profitability create a an organisational climate that is generally correlated with low levels of governance, and therefore unethical decisions are prevalent in their organisation (Sarwar, Ishaq, Amin, & Ahmed, 2020), often also leading to other white collar crimes such as blatant fraud and corruption.

The ethics component and training through accounting organisations and universities should be linked more to a “real” environment of what students will be encountering and what accountants are encountering on a daily basis. Ethics training in some instances does not have the intended impact on individuals (Arfaoui, Damak-Ayadi, Ghram, & Bouchekoua, 2016). Therefore, including the effect framing has on accountants’ ethical decision-making, testing these framing scenarios on individuals, and explaining the potential effect, impact and consequences on individuals might have a more beneficial result in ethics education and training.

7.5 Research Limitations and Further Research

Any research undertaken has its systemic limitations innate to the specific research. Therefore, it is important to understand the possible weaknesses or challenges that might have a consequential influence on the intended results.

The key limitations:

- The main limitation of this experimental study was that scenarios were hypothetical.
- Given that ethical decision-making is a well-researched field and there are multitudes of variables to consider, the researcher only focused on the elements relevant to this experimental study and to address the research hypotheses.
- The population focused only on accountants.
- The experimental research could not be done in a controlled environment for each experimental group, given the Covid-19 pandemic restrictions. This might have influenced the results, as the timing, setting and place were different for each participant.
- No probability sampling was used and therefore, the results of this research cannot be used to make generalisations on the entire accountant population.
- The loss-framing and gain-framing constructs did not provide internal validity, potentially due to the interpretations of the ethical nature or due to the loading of questions that tested these constructs.

Further research is suggested on the experimental groups, where the experimental groups will be tested in a controlled environment. Suggested research is to extend the research to other professional groups. This recommended expansion might assist in making the findings more generalisable. The researcher also recommends that this research be conducted with a different research design and include a qualitative research component in an attempt to establish an in-depth understanding of what motivates professionals to change to unethical behaviour under specific circumstances, and also address the limitations of this experimental research.

7.6 Conclusion

The motivation of this experimental research was to determine the role of uncertainty and loss-framing in ethical decision-making by accountants. In addition, it was to determine if an individual's taxonomy of moral philosophy could be used to differentiate in ethical decision-making between individuals with different moral philosophies, limited to absolutists and situationists.

Accountants were more likely to behave less ethically when a situation was negatively-framed and acted ethically if a situation was positively-framed. In addition, the perceived likelihood of a financial loss increases the likelihood of unethical behaviour among

accountants. Uncertainty as a variable did not affect the likelihood of accountants to behave less ethically. The taxonomy of the personal moral philosophy in differentiating ethical behaviour between absolutists and situationists was not conclusive and therefore the null hypothesis could not be accepted nor rejected.

Given the importance of understanding in which situations accountants tend to deviate from their ethical decision-making, the study contributes to the accounting and ethics literature from a framing and bounded perspective, and on which situations might have a negative bearing on accountants' ethical decision-making process.

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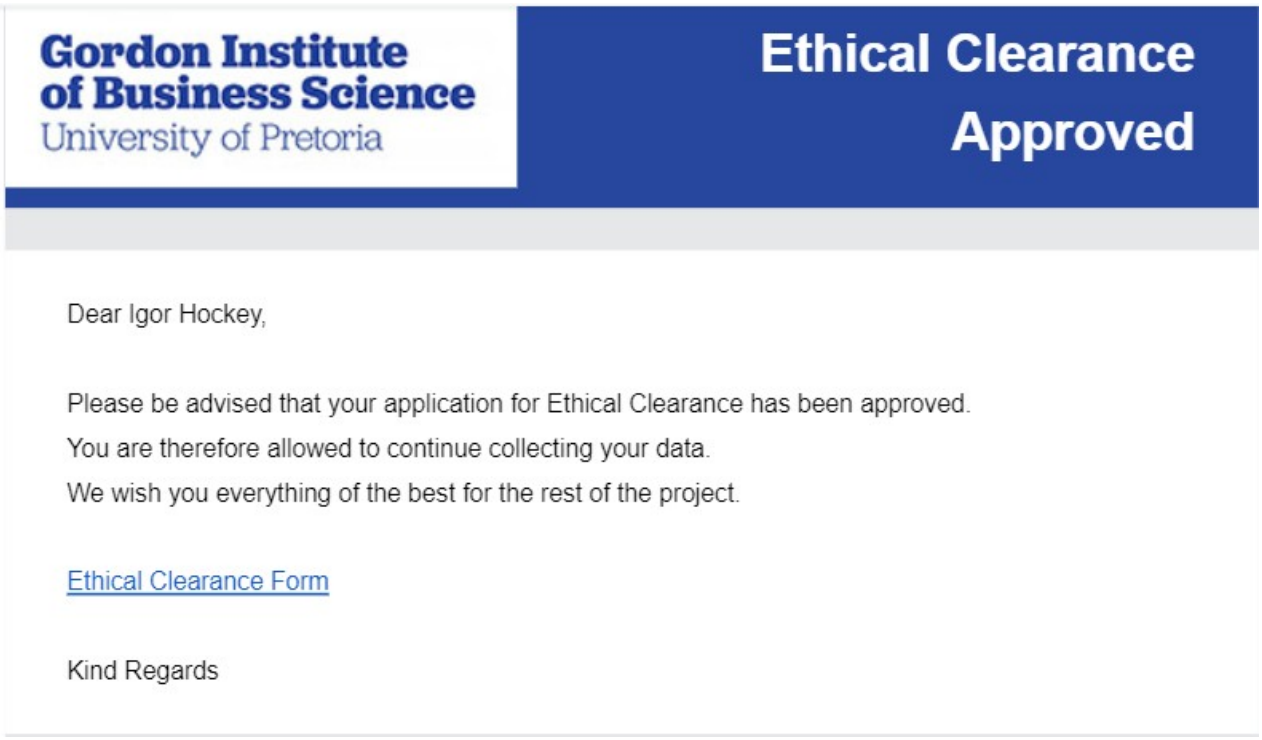
Appendix 1 – Ethical Clearance



Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Igor Hockey,

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

Appendix 2 - The Ethics Position Questionnaire

Please indicate if you agree or disagree with the following items. Each represents a commonly held opinion and there are no right or wrong answers. We are interested in your reaction to such matters of opinion.Rate your reaction to each statement by writing a number to the left of each statement where:
1 = Completely disagree
2 = Largely disagree
3 = Moderately disagree
4 = Slightly disagree
5 = Neither agree nor disagree
6 = Slightly agree
7 = Moderately agree
8 = Largely agree
9 = Completely agree

1. People should make certain that their actions never intentionally harm another even to a small degree.

2. Risks to another should never be tolerated, irrespective of how small the risks might be.

3. The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.

4. One should never psychologically or physically harm another person.

5. One should not perform an action which might in any way threaten the dignity and welfare of another individual.

6. If an action could harm an innocent other, then it should not be done.

7. Deciding whether or not to perform an act by balancing the positive consequences of the act against the negative consequences of the act is immoral.

8. The dignity and welfare of the people should be the most important concern in any society.

9. It is never necessary to sacrifice the welfare of others.

10. Moral behaviors are actions that closely match ideals of the most "perfect" action.

11. There are no ethical principles that are so important that they should be a part of any code of ethics.

12. What is ethical varies from one situation and society to another.

13. Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.

14. Different types of morality cannot be compared as to "rightness."

15. Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.

16. Moral standards are simply personal rules that indicate how a person should behave, and are not be be applied in making judgments of others.

17. Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.

18. Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment.

19. No rule concerning lying can be formulated; whether a lie is permissible or not permissible totally depends upon the situation.

20. Whether a lie is judged to be moral or immoral depends upon the circumstances surrounding the action.

Idealism scores are calculated by summing responses from items 1 to 10. Relativism scores are calculated by summing responses from items 11 to 20. The original response scale used was a 9-point scale, although people often trim it back to a true Likert 5-point scale.

Don Forsyth

Appendix 3 – Experimental questionnaire – excluding EPQ.

	Questionnaire						
	General Information						
Section A	**Qualifying Questions**						
	Are you an Accountant?	Yes	No				
Section B	**Demographic Questions**						
	As part of our research thesis, we have to provide quantitative data, and therefore the following questions are important.						
	Citizenship	South African	Non-SA				
	Gender	Female	Male	Do not conform			
	Age	1-100					
	Race	Black	White	Coloured	Indian	Asian	Other
	Managerial level	Junior	Supervisor	Middle-Manager	Senior-Manager	Director / Executive / VP	
	Education	Grade 12 - Matric	College Diploma	Bachelors / Honours Degree	Masters Degree	Doctors Degree	Other
	Do you have a professional accounting membership? CA/CIMA/ACCA/SAIPA	Yes	No				
	As an Accountant in your current or previous role did you have control or influence over an Income Statement (Profit and Loss	Yes	No				
	Years of work experience	None	<2	3-5	6-10	11+	

	Group A
Section D	**Uncertainty**
Q1	You are the CFO/Finance manager, your company is currently experiencing extremely volatile times, the financial position is weak and there is high level of uncertainty that the company will be in operation in the next 6 months. To compound the already dire situation one of the subsidiaries has seen a material decline in demand for its product and requires an impairment to reflect the true asset value of its operation.
D.1	Your analysis suggests that should the impairment be posted there is a 90% chance that the business will go into business rescue. How likely are you to process the journal? (1 very unlikely, 5 very likely)
D.2	Your analysis also suggests that should the impairment be posted, there is a 90% chance that the business will retrench employees which includes you. How likely are you to process the journal? (1 very unlikely, 5 very likely)
D.3	Would your decision be any different if the company were not facing uncertain times? (1 very unlikely, 5 very likely)
Section E	**Loss Framing**
Q1	You are the Finance manager and you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware of massive earning shortfall and potential write-downs that is on the horizon for this financial year which might cause the share price to fall by 50%.
E.1	As of now, your analysis suggests that you have a 90% chance of losing 50% of the value and a 10 % chance of the share price remaining at current levels. How likely are you to sell your share in the company? (1 very unlikely, 5 very likely)?
E.2	If you expected the share price to increase by 50%, would you still sell your shares? (1 very unlikely, 5 very likely)
Q2	You are the CFO and are busy reviewing the annual bonus calculation. The calculation seems reasonable; however, you notice that the shortfall for the firm to qualifying for the bonus is missed by 0.5%. This mean that no one would be entitled to receive a bonus for this financial year. The bonus for yourself as CFO is equivalent to 100% of your annual salary. There is one provision that has been raised for this financial year, however it could be delayed to the next financial year. The deferral of this provision will result in the firm being able to pay out bonuses.
E.3	How likely are you to approve the deferral of this provision? (1 very unlikely, 5 very likely)
Section F	**Prospect- Framing**
F.1	Which of the following would you choose? A = a sure gain of R240 000 B = a 25% chance to gain R1 000 000 and a 75% chance to gain nothing.
F.2	Which of the following would you choose? C = a sure loss of R750 000 D = 75% chance to lose R1 000 000 and 25% chance to lose nothing.
Section G	**Real scenario**
	Based on the majority of the response the following company will implement the decision. The company is the final stage of its negotiations, for the disposal of one of its subsidiaries. The company really needs the disposal to be signed off within the next week as they are reliant on the cash inflow from this disposal to ensure that the whole company is not placed under business rescue. The decision is crucial as time is of the essence. During the final review, a reporting error has been identified.
G.1	What would your recommendation be: to sign the document to ensure the company's viability or not to sign the document? (1 Yes, 2 No)

	Group B
Section H	**Certainty**
Q1	You are the CFO/Finance manager and of a company operating in a stable environment. The financial position is good and there is a high level of certainty that the company will be in operation in the next 2 Years. One of the subsidiaries has seen a decline in the demand for its product and requires an impairment to reflect the true asset value of its operation.
H.1	Your analysis suggests that should the impairment be posted there will be an insignificant impact on the Group results. How likely are you to process the journal? (1 very unlikely, 5 very likely)
H.2	Your analysis also suggests that even if the impairment is posted there is a no chance that the business will retrench employees. How likely are you to process the journal? (1 very unlikely, 5 very likely)
H.3	Would your decision be any different if the company were facing severe uncertainty and closure? (1 very unlikely, 5 very likely)
Section I	**Gain-Framing**
Q1	You are a Finance manager; you are currently considering selling your shares that the company has allocated to you. The shares have a vesting period of 3 years which have recently lapsed. The current share price is R500 per share and you are not in the closed period where employees cannot trade their share. You are also aware that the company is currently doing very well, and this might cause the share price to increase by 50% in the near future.
I.1	As of now, your analysis suggests that there is 90% chance of a 50% gain in the share price. How likely are you to sell your share in the company? (1 very unlikely, 5 very likely)
I.2	Would your decision be the same if there was a 90% chance the share price would reduce by 50%? (1 very unlikely, 5 very likely)

	Group C - Has All questions