INFLUENCE OF PERSONAL ETHICS OF CONSTRUCTION PROJECT PARTICIPANTS ON PROJECT PERFORMANCE IN KENYA

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Influence of Personal Ethics of Construction Project Participants on Project Performance in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

This work is dedicated all who have been by my side during my studies, thank you for your support, your understanding, your prayers and for having putting up with me when I was insufferable.

To the almighty God, whose power working in us can do infinitely more than we can hope for, or desire.

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And finally, to my Arsenal. The only thing that I love that is not food or Jesus and the object of my most genuine prayers. The club that entertained me in good and bad times, let me take this opportunity to acknowledge the best football club in the whole wide world. To the Arsenal and Arsenal Twitter, here's to greater things to come! Up the Arse!

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ABBREVIATIONS AND ACRONYMS

BORAQS	Board of Registration of Architects and Quantity Surveyors
CES	Construction Ethics Scale
CIOB	Chartered Institute of Builders
CPD	Continuous Professional Development
EACC	Ethics and Anti-Corruption Commission of Kenya
EBK	Engineering Board of Kenya
IM	Impression Management
KPIs	Key Performance Indicators
NCA	National Construction Authority of Kenya
PE	Personal Ethics
PM	Project Management
PMS	Project Management Success
SDR	Socially Desirable Responding
VECs	Virtue Ethics Scale

ABSTRACT

Personal ethics of participants in a construction project is likely to influence delivery of the construction project. However, this ethics has hitherto not been well captured in explanations of variability of project performance. Project management success is an area of big concern, not only in Kenya, but in the whole world since there seems to be recurring issues of cost overruns and time delays and a different way of looking at things is needed to try and improve delivery. A lot research has been done on factors that affect project success, yet the industry seems to experience the same kind of problems in delivery and in spite of extensive research, it does not seem to improve as witnessed by continued unethical incidents in construction. There is a school of thought, however, that proposes looking more in to the soft side of these factors, in order to improve delivery. One of these soft, non-technical issues is the personal ethics of project participants. This study investigates the place of personal ethics of project participants in project management success using a virtue ethics approach. The specific objectives of the study are (i) to establish the performance of construction projects in Kenya ii) to determine the personal ethics of construction project participants in Kenya iii) to establish the relationship between personal ethics of project participants and project performance iv) to develop an ethics scale for construction participants in the industry. A survey research design was adopted in the data collection and analysis. A structured questionnaire was used to collect the data. Statistical analysis, specifically correlations and regression analysis were used to establish the relationship between project performance and personal ethics. The data analysis results showed that there was no significant relationship between the virtues of participants and project management success (performance), however, there was a significant positive relationship between the behaviour of participants and project success, and by implication between personal ethics of project participants and project performance. In theory virtue manifests in people's behaviour. However, the respondents' association of project performance and behaviour was easier than their associating project performance and virtue hence the difference in correlations. The results also show that generally a construction participant is someone who should have integrity, affable, accommodating and fair. The researcher recommends that personal ethics be included amongst the factors that affect project performance, in professional practice of construction project management and research work. Additionally, the researcher recommends a virtue scale that could guide in the choice of participants in future projects.

Keywords: behaviour, construction participants, personal ethics, project management success, project performance, virtues, virtues ethics scale.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Problem

The human element plays a significant role in delay and escalation of costs of projects. In investigating factors that affect delays in construction in Libya, Elhaniash and Stevovic, (2016) found that of three factors namely project specific, environmental and human factors, human factors affected delays in projects the most. In an investigation on time delay in India, Doloi, Sawhney, and Iyer (2012) found that the most significant factor inducing construction delay was the client giving rise to delay in approvals, design and scope changes, lack of stringent organisational protocol and change of subcontractors during the project. In a study of construction delays and their causative factors in Nigeria, Aibinu and Odeyinka (2006) identified top factors that contribute to overall delay all of which could be attributed to human deficiency. Human factors seem to play a significant role in delays, yet this has not been given grave attention in Project Management (PM) literature.

Several reasons have been put forth by previous researchers as to why projects overrun cost, time and quality yet none of these reasons are attributed to ethics. Projects and their management are still failing to deliver the expected values and are missing ethics which has a profound impact in the field of construction as Bredillet (2014) points out, which warrants an investigation into this area.

The project manager's core business is to facilitate the completion of a construction project within budget, on time and to the desired quality. Measurement of a project's management success can be viewed from the perspective of the project manager who is committed to achieving closely defined performance, cost and time objectives (Harrison & Lock, 2004). These are the three tenets upon which the successful delivery of a construction project is often based, the so-called Iron Triangle. Thus, a

project not completed within cost, time and quality may be considered not successful.

A lot of emphasis in research in this area has been put into the aspects of achieving cost, quality and time for successful project delivery. For example, Chan, Scott, and Chan (2004); Williams, Williams, and Ryall (2013), Frimpong, Oluwoye and Crawford (2003), and Shane, Molenaar, Anderson and Schexnayder (2009) have all done studies relating to this yet time and again, projects continue to overrun either in terms of cost and time or are of low quality. Researchers in Kenya have in the last three decades focused on the material development of individual projects in terms of cost, time and quality, (Gichunge, 2008; Talukhaba, 1988; Talukhaba, 1998) but none focused on the reasons why they overrun.

Construction projects in Kenya are often delayed or surpass the budget due to largely human rather than technical reasons. Seboru (2015) found that the top five causes of delays in road construction in Kenya were: payment by client, slow decision-making, bureaucracy in client organisation, inadequate planning and scheduling, and rain. Kenyatta (2013) found that causes of delays on payment problems among Kenyan contractors were mostly caused by employers' poor financial management, delays in certification, underpayment of certified amounts, disagreement on value of work done and conflict among parties involved. In addition, recent studies conducted in Zimbabwe (Nyoni & Bonga, 2017), Libya (Elhaniash & Stevovic, 2016) and Egypt (El-Razek, Bassioni, & Mobarak, 2008), indicate that human factors caused the most delays. Amongst the factors that contribute to delays and cost overruns, few are beyond the control of the parties, for instance, bureaucracy, inflation or increase in material prices. Most of the factors are a result of failure to carry out their personal obligation contributing to delays, or underpaying certificates, or conflicts among the parties.

The construction industry in Kenya is very important to the growth of the economy since it contributes 8.6 % of the Gross Domestic Product (GDP) (Kenya National Bureau of Statistics, 2018). Despite its importance to the economy, its operations

diversely affect the society and environment in which most of its works are carried out. The industry also plays an important role in the achievement of the Kenya Vision 2030. The vision aspires to a country firmly interconnected through a network of roads, railways, ports, airports, water ways, and telecommunications. To ensure that the main projects under the economic pillar are implemented, investment in the nation's infrastructure is being given the highest priority (Government of Kenya, 2012). Therefore, ways of improving project delivery in the industry will go a long way to help achieve the country's goals.

There is evidence that despite the high quality training of consultants in the building industry in Kenya construction projects do not always meet their goals (Kibuchi, 2012). Kibuchi (2012), further adds that this is manifested by myriad projects that have cost overruns, delayed completion period and poor quality. This often results in collapsed buildings in various parts of the country, high maintenance costs, dissatisfied customers and buildings that are not functional. Masu (2006) states that over 70% of the projects initiated in Kenya are likely to escalate in time with a magnitude of over 50%. In addition, over 50% of the projects are likely to escalate in cost with a magnitude of over 20% (Masu, 2006). These researches however do not establish the root cause of these escalations nor do they offer an explanation for why this is so. Despite high quality training of professionals, project performance is still not 100% achieved. That missing component may be ethics, but this is yet to be proved through research.

There's an emerging perception that failure to deliver projects within cost, quality and time has to do with human factors as alluded to in researches by Cooke-Davies (2002), Abdul-Rahman, Wang and Yap (2010) and Phua (2013). Abdul-Rahman et al. (2010) established that unethical conduct has a direct and negative impact on the quality of construction. Kibuchi (2012) found that a strong relationship existed between human factors and performance by construction participants. Association of Project Managers (APM, (2006) also points out that it is people who deliver

successful projects not methods and tools, thus the human factor is important in project management success.

Interactions between people on a project are complex because the temporary multi-organisation of the construction projects brings together participants from many organisations with conflicting priorities (Ness & Green, 2012). Construction involves several processes which must be integrated in the most efficient manner possible to complete projects on schedule, within the budget, and according to the standards of quality and performance specified by the project owner or designer (Githui, 2012). This process is also affected by human factors such as leadership, ethics, communication and teamwork and if these human factors are ignored, it is likely that the technical ones may not be achieved.

Ethics in construction has always posed a challenge and unethical practices in the industry are numerous. According to CIOB, (2013) 48% of construction professionals feel that corruption is commonplace within the UK construction industry. In Australia, Vee and Skitmore, (2003) established that there is a range of unethical practices in the construction industry. A study by Bowen, Pearl and Akintoye (2007) revealed that unethical behaviour is predominant in the South African construction industry. In Zambia, unethical practices were found to be prevalent in all phases of construction (Mukumbwa & Muya, 2013). While this challenge exists, there seems to be no lasting solution offered yet this may have an impact on the project management success.

The overall body of ethics related work in the industry continues to grow although not as fast as in other industries. Research on ethics in construction tends to focus on professional and business ethics (Abdul-Rahman et al., 2010; Bowen et al., 2007; Kang, Price, Thorpe, & Edum-Fotwe, 2004; Poon, 2004; Vee & Skitmore, 2003). However, there appears to be little empirical research done to consider how personal ethics of various participants affect project delivery success. Researchers such as Vee and Skitmore (2003), Abdul-Rahman, Hanid, and Yap, (2014), London and Everingham (2006) have merely cited personal ethics as being important in

successful delivery of projects. There are efforts worldwide to increase the ethical standards and integrity among professionals in construction sectors (Abdul-Rahman et al., 2010). It is often assumed that by having professional and business ethics, ethical conduct will be achieved. However, ethical conduct will be difficult to achieve at institutional or professional level unless there is personal ethics. Personal ethics do not lie in formal statutes but at the intersection of one's work, education, profession, religious or ethical beliefs and daily interactions (Ashrafi, 2003). And to be good professional, it is imperative also that one is a good person through having high moral virtues.

The disparate nature of the industry makes it difficult to monitor behaviour on an individual level and for this reason, little empirical research has gone into the importance of personal ethics in project management success. It seems that codes of practice are the most feasible way to attempt to change behaviour but such codes cannot change practices (London & Everingham, 2006). It is obvious that one's individual moral compass impacts choices that one makes but how this affects the outcome of his work is yet to be established through research. Personal ethics of all individuals in the construction process chain of delivery can have an impact not only on cost but on time and quality as well. Though personal ethics is not directly related to the Iron Triangle, this research contends that it plays a crucial role in facilitating various human factors that contribute to project management success.

1.2 Statement of the Problem

The problem presented in this study is that performance of projects in Kenya continues to be poor due likely to the personal ethics of project participants yet this has yet to be proven empirically. In a survey conducted by the Ethics and Anti-Corruption Commission (EACC) it was reported that one of the departments that was most prone to corruption was the roads, public works and infrastructure (EACC, 2015). The survey report further stated that corruption has resulted in county underdevelopment, poor services, poor road construction, budget deficits, denial of public participation in project selection and budgeting process. According to

Deloitte, (2017) 48% of projects were over budget, in addition 87% of projects had a time overrun due to procurement delays – either upfront or during the construction period which results in significant cost escalations. Most of these procurement delays are as a result on irregularities and corruption (Lukorito, 2016). The more human interactions there are, the more the chances of engaging in unethical and corrupt practices.

From the reports above, it is evident that there is a problem of unethical practices in Kenya. And most of these practices happen at a personal level. A study on how personal ethics of the participants affects project success is therefore timely. Ideally, it is proposed that personal ethics is an important human factor that affects all aspects of construction and plays a role in the management of projects. Great importance is given to the professional competence required to do a job, but it is important to seek in the truly professional person not only technical competence but also human qualities. Debeljuh (2006) argues that this is because the aspect of work has two components; the technical object and the social object. Due to this, one's professional activity is an opportunity for the person who carries it out to improve in ethical terms and in technical terms. Thus, all aspects of a human being affect the outcome of his work.

1.3 Aim and Objectives of the Research

The aim of this study was to investigate the influence of personal ethics of construction project participants on project management success. The specific objectives were:

1. To establish the performance of construction projects in Kenya.
2. To determine the personal ethics of construction project participants in Kenya.
3. To establish the relationship between personal ethics of project participants and project management success.
4. To develop an ethics scale for construction participants in the industry.

1.4 Research Hypothesis

The study hypothesis was that there is a significant relationship between personal ethics of project participants and project management success while the null hypothesis was that there is no significant relationship between personal ethics of project participants and project management success.

A statistical model for testing this hypothesis may be expressed as follows:

$$\mathbf{y = \alpha + \beta x + \varepsilon}$$

Where:

y is the continuous dependent variable, that is, project management success

α is a constant

β is the coefficient of the independent variable

x is the independent variable (single predictor in the model), that is, personal ethics

ε = error term

Accordingly, the hypotheses are amplified as follows:

i. **Null Hypothesis, H_0**: There is no significant relationship between personal ethics of project participants and project management success; H_0: $\beta_i = 0$
ii. **Alternative Hypothesis, H_A**: There is a significant relationship between personal ethics of project participants and project management success; H_A: $\beta_i \neq 0$

In this study, personal ethics is construed to be an explanatory variable although it actually constitutes many surrogates. This conceptualisation was adopted in a bid to manage the scope of the study.

1.5 Study Justification

Project management (PM) success has been widely researched in construction literature as seen in section 2.0 onwards and factors leading to project success debated upon. However, there is little evidence of research delving into the significance of project participants' ethics in PM success. Previous studies have also shown that project performance in construction has not improved much. This study sought to investigate if personal ethics could be an important factor contributing to project management success.

Ethics is especially important to construction because the nature of construction renders it vulnerable to unethical practices as projects are one-off and involve huge sums of money. Research in ethics in construction focuses mainly on professional ethics and codes of ethics or ethics at the management level but none has looked at personal ethics of project participants.

This study identifies this discrepancy in the study of ethics in construction and tests the importance of personal ethics to project management success.

Methodologically, the data collected in this study is directly relevant to establishing the importance of personal ethics in project management success hence the focus on only one compound factor of ethics. In Kenya, corruption especially in the construction sector continues to be a big issue and a study on ethics could help in the understanding of the magnitude of the problem.

1.6 Significance of the Study

The growing concern of the role of ethics in construction shows just how important stakeholders take this subject. Ethics is not only important in construction but in the wider society as well. Unethical conduct is an impediment for economic development and good governance. Most companies have a code of ethics, but a code of ethics is only good if everyone adheres to it.

The findings of this study will be useful to different people at large. First of all, policy makers and other government institutions will be able to use these findings to make future decisions concerning ethical issues in construction. Kenya as many other countries has an Ethics and Anti-Corruption Commission established under Section 3 (1) of the Ethics and Anti-Corruption Commission (EACC) Act, 2011. This public body however deals mainly with issues such as the conduct of public officers, reporting of corruption cases, ensuring transparency in public procurement etc. The Act largely omits the construction industry. These findings will help identify areas to zero in on during policy implementation and education of the public at large.

Secondly, regulatory bodies such as NCA and professional bodies can use the findings of this study to create a criterion for emphasis in training of ethical professionals. The National Construction Authority (NCA) Act, 2011 which is intended to draw all proper requirements for the regulation of the construction industry and create a code of conduct for the industry can use these findings to draw a more specific code of conduct for industry participants. Regulatory bodies such as BORAQS and EBK can also benefit by incorporating in their curriculum aspects of ethics which will improve peoples' conduct and performance.

This research is useful to stakeholders in the industry as well as to the Government, and NCA. Professional regulatory bodies can also include personal ethics as an important factor affecting project management success. With the government's agenda of providing affordable housing this study will help highlight contributing factors to help achieve this agenda. As human beings, we cannot divorce who we are from our work and there is no professional work apart from people who work in those professions, thus, to have better professions we need better people.

The study will also be an important contribution in knowledge not only in academia but also to the industry and within the training institutions of professionals in the industry. The study bridges an important gap in academia showing that personal ethics of participants is an important factor and should be included in the factors affecting project success. Le, Shan, Chan and Hu (2014) recommend that greater

research efforts, particularly from researchers in developing countries should be encouraged in this area.

1.7 Study Limitations and Delimitations of Scope

The focus of the study was on the construction phase of the production process. This is because it is the most active phase of the construction process and where most interactions take place. It is also the phase when man, money, materials and machines are most involved and work together thus forming a good basis for assessment. Overall, the study focused on project management success which covers time, cost and quality, mostly affected during the construction phase and did not go beyond that into the whole life cycle of the building.

The study was limited to personal ethics of project participants and not professional ethics thus it is their behaviour as individuals that was focused upon. Since respondents were asked to rate their colleagues on projects, there is a possible bias to the results which should be taken as purely correlational, inferring causality from the relations observed would be inappropriate.

Second, this study did not look at all the other factors, especially human factors that affect project management success and was therefore not able to control for other variables other than personal ethics.

Third, in looking at project management success, the study limited itself only to three traditional tenets of time, cost and quality that have been used before. It would be interesting to extend the definition of project management success to the whole project success and other factors too and find out what different people mean by success in the Kenyan context.

Lastly, this is simply a survey of projects in Nairobi City and results cannot therefore be generalised to the whole industry, but they provide useful insight into a section of the industry.

1.8 Study Assumptions

The researcher sought to find out if ethics was important enough to be included among factors that influence project success. Therefore, other factors that have been established in literature review were not tested, but only inferences were drawn on their relationship with ethics.

The first basic assumption was that the respondents gave honest and truthful responses. Anonymity and confidentiality were preserved at all times during data collection and any respondent who did not want to answer questions was not coerced into it.

The second assumption was that all factors that may influence successful delivery of projects other than personal ethics were held constant since the influence of these other factors has already been established through research.

The third assumption of this study was that all the construction participants were highly trained and technically competent and only examined the practice and not the training of these individuals. This is because the study was focused on the practice of project participants and not their training which falls outside the scope of this study.

The fourth assumption was that respondents behave in the same way in all projects and so their ethics did not change depending on the type of project being undertaken. This would therefore imply that the results from this study would apply to any type of project be it infrastructure, private or public since the focus was on the behaviour of participants who are the same who participate in the other types of projects.

1.9 Operational Definition of Terms

These definitions limit the way the following terms have been used in the research and therefore their meanings:

Construction participants: were taken to mean those involved in a construction project, that is, construction team leader or Project Manager; Architects, Quantity Surveyors, Engineers, Contractor, and Client or Developer.

Epistemology: the theory of knowledge embedded in the theoretical perspective and thereby in the methodology. It is a way of understanding and explaining how we know what we know.

Personal ideals: These are values, commitments, forms of goodness around which individual character is formed and which are not reducible to general duties (Martin, 2000).

Morality: the goodness or badness of an act. It could also mean human actions that are judged to be well performed.

Objectivism is an epistemology embodied in positivism and post-positivism. It holds that meaning and therefore meaningful reality, exists as such apart from the operation of any consciousness. A tree in the forest is a tree, regardless of whether anyone is aware of its existence or not (Crotty, 19980. Philosophical assumptions that underlie research are important because philosophy shapes how we formulate our problem and research questions to study and how we seek information to answer those questions (Creswell (2013).

Personal ethics: those internalised individual ideals and beliefs. In this study, this term has been operationalised to distinguish it from other ethics such as professional or business ethics. It means ethics referring to the individual and not institutions or organisations in general. Its meaning includes virtues, both moral and intellectual. The term is also used to mean the character traits that constitute an individual's behaviour.

Professional ethics: the formal rules and regulations laid out by a professional body for its members.

Project delivery: the process of construction that leads to a product.

Project management success: completion of construction within time, budget and quality. The iron triangle.

Project Success: more than just project management success, it includes the phase beyond construction. For the purposes of this study the terms project success and project management success are used interchangeably to mean completion of a project within the iron triangle.

Project Participants: anyone involved in production of the construction product, from the consultants to the workers.

Project Performance: completion within cost, time, and quality. Also used synonymously with project management success in this study.

Research Methods: The techniques or procedures used to gather and analyse data related to some research question or hypothesis.

Research Methodology: The strategy, plan of action, process or design lying behind the choice and use of particular use of methods to the desired outcome. Survey research is a methodology. It is one of the many research designs that guide a researcher in choosing methods and use of the methods chosen.

Theoretical perspective: the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria. Positivism is a theoretical perspective that informs a range of methodologies including survey, and experimentation. As a theoretical perspective, positivism is an approach to understanding and explaining society and the human world, and grounds a set of assumptions that the researcher brings to their methodology.

Values - the material basis of ethics.

Virtue - a good habit manifested in human action.

1.10 Outline of Study Report

This study report has been organised into six chapters as follows: -

Chapter One of this study spells out the introduction to the study, background to the problem, the problem statement, objectives and the hypothesis of the study. It then highlights the delimitations and study assumptions and finally gives the operational definitions.

Chapter Two and Three present the literature reviewed. Chapter Two specifically highlights the ethical theories on which this study is underpinned. The chapter also covers ethics in general, and virtue ethics and narrows down to character, personal ethics and ethics in construction.

Chapter Three reviews the literature related to project management performance, theories related to project management performance, factors affecting project success and concludes with the theoretical and conceptual frameworks by bringing ethics and project performance together and outlining the research gap.

Chapter Four covers the philosophical underpinning of the study and the methodology. The sampling techniques, data collection procedures, questionnaire design and data analysis techniques are presented in this chapter.

Chapter Five presents the results and discussion. Here the data is analysed, and main study findings presented and discussed.

Chapter Six deals with the summary, implications and conclusions of the study. This chapter summarises the main objectives of the study and how they have been fulfilled. The implications of the findings are presented, and study limitations highlighted. The chapter concludes with suggestions of further areas of research.

CHAPTER TWO

REVIEW OF LITERATURE ON ETHICS

2.1 Introduction

This chapter explains what is meant by ethics, the different theories of ethics, the meaning of virtue and how it relates to personal ethics. The chapter also looks at the research that has been carried out on ethics in the construction industry.

2.2 The Concept of Ethics

The term ethics has been defined in different ways by different authors. The Oxford dictionary defines ethics as moral principles that control or influence a person's behaviour (Oxford Advanced Learner's Dictionary, 2011). Aristotle defines ethics as the art of living well (Crisp, 2000). Gichure (1997) defines ethics as the systematic study of human actions from the point of view of their rightness or wrongness as a means to achieve man's ultimate happiness. Ethics tries to help us decide how we should act, all things considered (Elegido, 1996). The focus of ethics is therefore to determine how to behave in order to ensure that our life is flourishing, successful, worth living, and fulfilling. It is the quest for a good life. The basic idea of ethics is the morality governing human behaviour to be right, good and proper (Kang, Price, Thorpe, & Edum-Fotwe, 2004).

At its simplest, ethics is a system of moral principles. They affect how people make decisions and lead their lives. Gichure (1997) points out that ethics is concerned with what is good for individuals and society and is also described as moral philosophy. Generally, ethics concerns itself with determining how one may decide what is good or not good. Ethics also means, the continuous effort of studying our own moral beliefs and our moral conduct, and striving to ensure that we, and the institutions we help to shape, live up to standards that are reasonable and solidly-based (Gichure,1997). This is important because institutions and organisations are made up of decision-making individuals and what is referred to as cooperate culture or ethics

is a sum total of the experiences of the individuals working in there. If individuals are well-meaning people, the institutions will also turn out to be well-meaning.

2.2.1 The Meaning of Ethics

To talk about ethics is to talk about values. To say that something has values is to make a judgement or an appraisal. Values properly speaking refer to human actions. The grounding of ethics asks for the affirmation of an objective world of values, that is to say, of moral good (Gomez, 1992). The objective world of ethics is a world of actions directed to an end and this end is what befits the perfection of human nature.

Gichure, (1997) points out that the good is that which everyone desires, even when one chooses something that is bad, he does so because he perceives it to be good. The good of each thing is defined in its nature. This good is the perfection to which the concrete nature is called. According to MacIntyre (2007), Aristotle defines virtue as a habit that makes he who practices it good. Thus, man has to live according to reason which helps him attain the virtues i.e. virtuous life.

Ethics is basically a single field of knowledge yet there are two aspects to it; the individual aspect and the social aspect. The individual aspect, also what is commonly referred to as personal or general ethics, examines principles and rules that might help us decide how we ought to act in different circumstances. The social aspect examines how a society ought to be structured and how we ought to live together. Hence, ethics has been identified with the practice of virtues that man tries to attain (Gichure, 2008).

2.2.2 Morality and Ethics

It is readily assumed that morality is essentially a private matter and furthermore, relative to the individual. Who decides in moral matters? Who draws the line as to what is right or wrong? Mitcham and Duvall (2000) reflect ethics as rooted in human behaviour. In fact, most people tend to think that morality is a ‘subjective’ issue, neither here nor there. Gomez-Lobo (2002) states that morality is not a matter to be

decided from the perspective of the first person singular but from the perspective of the first-person plural. That is, if two people are having a moral conversation, then they must both reach the conclusion that something is either good or bad. He further suggests that an agreement must be found. Moral justification, insofar as it is interpersonal, must appeal to objective reasons. Not only are appeals to subjective feelings inadmissible within the moral conversation but also pronouncements that are based solely on the authority of the speaker should be ruled out.

The outcome of the moral conversation should be able to be generalised; if it is wrong for one person, it should be wrong for another person too. Equality of the participants leads to the claim that the results apply to anyone facing the same choice (Gomez-Lobo, 2002). That is, both parties must agree.

The original setting of moral philosophy is an idealized conversation in which two or more individuals give each other reasons to try to agree on whether a certain kind of action is generically right or wrong. They understand that the reply would be impartially binding on all of them (Gomez-Lobo 2002). This conversation Gomez-Lobo (2002) argues includes all persons of all ages. Nor should anyone be excluded because of his/her religious convictions. Such persons, however, are asked not to introduce claims based on faith but to agree on the basis of premises that are open to all. The original setting then is this imaginary conversation in which we try to justify to each other moral claims by means of objective reasons.

Morals is taken to mean norms conducive to the achievement of one's whole potential as a human being. And a human being here means an individual being with a rational nature (Gichure, 1997). Therefore, human beings are moral agents because moral agency- the capacity to act under the guidance of the concepts of right and wrong - is indissolubly linked to the capacity to understand these abstract concepts and to accept or reject propositions in which they appear (i.e. rationality). In other words, one should pursue what is good and avoid what is bad. This is also known as the Formal Principle (FP), Gomez-Lobo (2002).

According to Gomez-Lobo (2002), the formal principle is not a moral principle but a general principle of practical rationality. In the absence of further specification, it cannot tell us whether some action is morally right or wrong. What the principle rejects in broad terms is the pursuit of something bad (for anyone) and the deliberate neglect of something good (for someone). By itself the principle does not resolve practical conflicts. Practical reason then stands for our capacity to use our rational powers to guide us in what we do as opposed to what we make or what we figure out without any intention of putting it into practice. The formal principle makes a claim on how we should act. It tells us that if something is good, it is rational to pursue it, if something is bad, it is rational to avoid it. For instance, study is good, we should pursue it; killing is bad, we should avoid it. Thus, behaving in a morally upright manner is nothing else but being fully rational. This is important in this study because many people claim that personal ethics should not affect how a professional person act. But professionals do make choices which are sometimes rational and at other times irrational. We must therefore agree that there is an objective moral good and bad which is not dependent on individual views but that we can all arrive at through reasoning (Gomez-Lobo, 2002).

In the light of the foregoing argument, issues of morality are not subjective but rather objective; that what is right or wrong can be arrived at by everyone through practical rationality. This is important so that moral issues are not judged depending on a personal point of view. Below are some theories that have been most prominent in the history of ethical theory development.

2.3 Theories of Ethics

Ethics is a practical normative science because it gives rules and serves as a guide to human conduct. It comprises major schools of thought:

a) Deontological theory originating from Immanuel Kant.

b) Utilitarian theories which are a cluster of moral theories arising from David Hume and John Stuart Mill. Among them is psychological egoism.

c) Virtue Theory as expounded by Aristotle.

2.3.1 Deontological theory

This theory originates from Immanuel Kant (1724-1804) who proposed that, that which is good is found in the person's own good will. To be the source of the moral law, this will, must be absolutely good. Kant discounts the possibility that a person of good will or intentions could well be mistaken or selfish (Gichure, 2008). This theory is also known as autonomy because the acting individual does not need external rules to the personal conception of what one would wish to become universal law. Accordingly, the reason for deciding whether an action is right or wrong must have its principle exclusively in one's reason and will. It must be the result of an inner 'categorical imperative'. According to Kant, once a person has seen what should be done, that person has the duty to obey the 'categorical imperative' which becomes for him the moral law (Gichure, 2008). This is not always so in construction, for example, many times a contractor may see that the right thing to do is not to go ahead with the work since it would require him to compromise his ideals, but he will still go ahead and do it to make profit.

The categorical imperative states that "I ought never to act except in such a way that I can also will that my maxim should become a universal law" (Beauchamp & Bowie, 2001). It is categorical because it admits of no exceptions and is absolutely binding. It is an imperative because it gives instructions about how one must act. Kant does not lay too much emphasis on the instruction or education of the person towards discerning good from bad and right from wrong. His ethical approach is therefore liable to arbitrariness and subjectivity. Murphy (1999), states that for a deontologist, certain activities are intrinsically right, irrespective of the consequences. Thus the theory involves a set of obligations as opposed to virtue ethics that posits a set of ideals that individuals should aspire to. This lack of

emphasis on education of the person towards discerning good from evil is common in construction. This is demonstrated, for instance, where focus is on fulfilling obligations of the contract, that is finishing on time, within cost and quality but how this is achieved is not monitored. So a project could go ahead without paying attention to details, without diligence and dishonestly but so long as it is finished within the obligations, it considered successful.

2.3.2 Utilitarianism

Utilitarianism is a cluster of ethical doctrines, rooted in David Hume (1711-1776), Jeremy Bentham (1748-1832) and John Stuart Mill (1806-1873). Their common claim is that morality should be judged by its consequences. That is, an action is right insofar as it tends to promote happiness, and wrong insofar as it tends to do the opposite.

Briefly put, "those actions are right and good which produce the greatest happiness for the greatest number" (Gichure 2008, p. 50). According to this principle, actions derive their moral worth not from what they are but from how useful they are. This theory emphasizes the costs and benefits of any action. An action or practice is right if it leads to the best possible balance of good consequences over bad consequences for all parties affected (Beauchamp & Bowie, 2001).

This theory asks us to consider which alternative would result in the greatest amount of happiness for the greatest number of people. That alternative should be regarded as morally correct, as no action is good or evil per se. Yet we know that this is not always true; sometimes an action that may be quite popular among the majority may not be necessarily right. For example, many people in construction consider a completed project in construction a success especially if all parties involved have been paid. Everyone is happy and the project is done. But may be the processes that lead to the completion of the project were not very straight forward.

This theory has been criticised on various grounds (Gichure, 2008; MacIntyre, 1984; Oakley & Cocking, 2001). In the first place, it degrades man to the level of beasts as a pleasure-loving being. It is not true that pleasure is the only thing in fact desired for its own sake. It seems reasonable to accept that sometimes agents pursue goals other than pleasure (Gichure, 2008). For example, a construction worker taking the night shift does not do that for the sake of pleasure. It is highly possible that what would be pleasurable to him would be to have a good night's sleep. A student who studies into the wee hours of the night does not do that out of pleasure but in order to pass their exams.

By accepting an action just because a majority of people enjoy it, for instance, winning tenders fraudulently, this theory sacrifices the right of the minority, and is prone to abuse. The action that produces the greatest balance of value for the greatest number of people may bring about unjustified treatment of a minority. This has caused a lot of problems, for instance, where poor roads have been constructed or not constructed at all at the expense of the public or where poor construction has led to loss of lives. However, this theory is quite popular in business related areas because it follows the common managerial action of weighing the cost and benefits of various decisions, mostly in monetary terms. A contractor is therefore likely to use this theory when making moral decisions and his decisions are likely to favour the side that will cause him the least loss or bring in more profit.

In examining both deontology and utilitarianism, it appears that they offer explanations for why things are the way they are in construction, that is, only looking at the cost benefit analysis of the projects, concern about the greatest happiness for the greatest number of people. And seeing as there are many problems that face the industry, a deeper look into an alternative theory is necessary for consideration.

2.3.3 Virtue Ethics

The main thesis of Aristotelian ethics is that all human beings necessarily seek happiness; even those who steal or defraud others, do it because they think that what

they get out of it will make them happy. A virtuous life according to reason and exercising the right mean, brings with it happiness, understood not as pure pleasure but as the attainment of one's inner harmony, the peace and harmony of having lived an upright life.

Aristotle differentiates between intellectual virtues and moral virtues. Intellectual virtue is practical wisdom and moral virtue is excellence of character. Moral virtues or excellence of character include excellence in relation to attributes such as courage, temperance and justice, while intellectual virtues are wisdom in theoretical matters and practical wisdom (also referred to as phronesis or prudence) which denotes excellence in practical matters and entails the ability to live one's life well (Begley, 2006).

Virtue ethics as opposed to utilitarian and consequentialist ethics, and deontological ethics, puts special emphasis on the development of moral character. This makes virtue ethics an excellent platform from which to analyse various aspects of human action, professional work, and business activity (Fontrodana and Sison, 2013). Virtue is a good habit. Racelis (2013) defines virtue as an enduring trait which places a thing in a good condition and enables it to carry out its distinctive work well. Classically a virtue is a strength or excellence. A virtue strengthens, improves, and perfects that which has it.

Only by acting morally can one attain this happiness, thus flourishing in dignity. Therefore, morality is not a luxury but a necessity to enjoy human dignity. Morality, according to Aristotle, starts from working on one's character. From that internal disposition it then transpires to interpersonal relations (Gichure, 2008). Oakley and Cocking, (2001) point out that Aristotle thought that humans flourish by living virtuous lives because it is only in doing so that our rational capacity to guide our lives is expressed in an excellent way while Racelis (2013) claims that character is the sum of all our moral habits grouped around the axis of the will. The development of character is no more than development of good dispositions, or good habits which

then leads to personal ethics. Character is the whole of which virtues are some of the components.

2.3.3.1 Dimensions of virtue ethics

According to Solomon (1992) there are six dimensions of virtue ethics that make up the framework of virtue ethics in business. These dimensions are also mentioned by Murphy (1999). They are, community, excellence, role identity, holism, integrity, and judgment.

i. Community

Solomon (1992) proposes that virtues should be examined within a community setting. We are first members of a community and our self-interest is for the most part identical to the larger interests of the group. To live a good life, one must live in a good city. This means that we influence each other as a community. That is why if a community is good, it will most likely have members that are good, but if a community is bad, then the members of that community will find it very hard to be good. So, if the whole construction industry is good, then it is most likely that the members are good, but if it has a bad reputation for corruption and unethical practices, chances are that even the individual members are unethical. Members of a community affect each other in their behaviour.

ii. Excellence

Solomon (1992) states that it is not enough to do no wrong. Knowingly do no harm. Constantly strive for improvement. Virtue is doing one's best, excelling, not merely toeing the line and keeping one's nose clean. The virtues that constitute business ethics should not be conceived as purely ethical or moral virtues as if business ethics were nothing other than the general application of moral principles to one specific context. The virtues of business ethics are business virtues, but they are nonetheless virtues. That is, they are simply virtues that are applied to business situations. So,

one should strive to acquire these virtues whether in business or in their personal lives.

iii. Role Identity

To work for a company is to accept a set of obligations, to assume a loyalty to one's employer, to adopt a certain standard of excellence and conscientiousness that is largely defined by the job itself. Virtues are good habits and are learned by practicing, all the knowledge one knows about virtues will not do them any good unless they practice. For instance, to be a diligent hardworking student requires one to have the virtue of diligence and industriousness, but possessing these virtues requires a habit of constant study, and completion of assignments. With time then one finds it easier to be diligent. The Aristotelian approach presumes concrete situations and people and their place in organisations. The problem in business and especially in construction is that people play different roles at the same time and these roles may clash with one another as they may clash with more personal roles based on family, friendship and personal obligation.

iv. Integrity

Integrity is the key to Aristotelian ethics as the linchpin of all the virtues, the key to their unity. The very word suggests wholeness and that wholeness includes other people and one's social roles. A construction professional's integrity on the job typically requires him or her to follow the rules and practices that define that profession, rather than allow oneself to be swayed by distractions and contrary temptations.

v. Judgment

Aristotle thought that good judgment was of great importance in ethics. Good judgment was the product of a good up-bringing and a proper education. What is required here is the ability to balance and weigh competing concerns and come to a fair conclusion.

vi. Holism

One of the problems of business is the tendency to isolate business or professional roles from the rest of our lives. Professionals need to be encouraged to balance their professional and personal lives. These dimensions are useful and are what to look out for in any profession.

2.3.3.2 Nature of virtues

Virtues are those praiseworthy character traits that lead to human flourishing (Garcia-Ruiz & Rodriguez-Lluesma, 2014). In his book *After Virtue* MacIntyre (2007) explains how virtues help us to achieve/acquire standards that are the norm to practices (professions) and to be initiated into these practices we need the authority of best standards. Practices involve standards of excellence and obedience to rules as well as achievement of goods both internal and external. External goods are always an individual's property and possession for instance power, fame, money. Internal goods on the other hand are the outcome of the competition to excel and their achievement is good for the whole community (MacIntyre, 2007). Achievement of internal goods is good for the whole community who participate in the practice as the best practitioners enrich the standards of excellence for all. When an architect designs a building of magnificence, he or she raises the standards of excellence for all other architects, who now have a reference point from which to extend their capabilities as architects. Thus, acquiring virtues enables us to achieve goods which are internal to practices. Without virtue we might only be concerned with what benefits us individually and not communally.

"Every practice requires a certain kind of relationship between those who practice in it. Now the virtues are those goods by reference to which, whether we like it or not, we define our relationships to those other people with whom we share the kind of purposes and standards which inform practices" (MacIntyre, 2007, p 191).

Practice might flourish in societies with different codes; what they could not do is flourish in societies in which virtues were not valued (MacIntyre, 2007). "The integrity of a practice casually requires the exercise of the virtues by at least some of the individuals who embody it in their activities; and conversely the competition of institutions is always in part at least an effect of the virtues (MacIntyre, 2007, p. 195). Without the virtues there could be recognition of only external goods and not at all internal goods, competitiveness would be dominant and even exclusive feature (MacIntyre, 2007, p. 196). This can be said to be what happens most of the time in the construction industry in Kenya. Competition is high and jobs are few with a result that all that matters is money, fame and wealth and not so much the advancement of the professions in terms of creativity and inventiveness.

The possession of virtues is necessary to achieve internal goods although sometimes these virtues may prevent us in achieving external goods. The cultivation of truthfulness, justice and courage for instance, may bar us from being rich or famous or powerful. Gichure (2008) argues that even though lack of integrity in transacting business can appear to be beneficial to the businessman here and now, in the long run unethical behaviour can usually strike at the foundations of an entire enterprise and crush a whole economic system. Thus, if in a particular society the pursuit of eternal goods were to become dominant, the concept of virtue might suffer first attrition, then something near total effacement (MacIntyre, 2007). Virtues not only help in the pursuit of goods internal but also aid in protecting practices from corruption, which may be occasioned by the exclusive or dominant pursuit of external goods by institutional agents (MacIntyre, 2007).

The point being made here is that businesses have to look to more than just profits. Once ethics is instilled in those carrying out business, then there are more gains to be had. The idea behind virtue ethics is not just to prosper in business but that once individuals start looking for their own happiness, they will then work well and be virtuous and flourish and that virtues are important for the flourishing of practices

too. Construction like any other business has to do more than just make profits. In the exercise of their professions, the professionals must also learn to acquire virtues.

2.3.3.3 Character and virtue

Moral philosophers usually distinguish between character and virtue. Character is the sum of all our moral habits, grouped around the axis of will (Racelis, 2013). Murphy (1999) states that virtue leads to character development as these good habits must be present for character formation to occur. Character formation is therefore a lifelong process that requires not just virtue acquisition but a stable disposition. So virtues are like the building blocks of character.

Character is the whole of which the virtues are some of the components; but a character trait can be a virtue or a vice depending on the circumstances under which the characteristic behaviour appears, posits Racelis (2013). Character, being a combination of several habits, is a principle of human action which, by its moral nature, leads us towards, or away from, our last end. Thus, we say that one is of good or bad character: to live a good life, one must have habits of goodness, and habits are good when they lead to our last end. Character is distinguished from person: person is the thing that nature has made us to be from the start, whereas character is what we have made out of ourselves by dint of hard work and a zealous attention to the moral virtues (Racelis, 2013).

Virtue helps one make the right choice, but this does not mean that one who is virtuous cannot do wrong. Virtue ethics focuses on what kind of person one may or should become, putting the subject rather than his acts at the centre of its theory (Gong & Zhang, 2010). Thus, virtue ethics proposes that one can become a better person with the acquisition of virtues. The focus in virtue ethics is on character traits, not a particular decision (Chun, 2005). A person of virtuous character, an ethical person, regularly and consistently exhibits the character traits in conduct, in compliance with the associated principles calling for honest, fair, reliable, trustworthy commitment to others (Chun, 2005). Virtues cannot be attained instantly

but can be acquired through repetition of good acts/behaviour (Athanassoulis, 2016). Thus, to attain a virtue requires one to work continuously on their character.

Virtue ethics is important for the construction industry because a morally good professional with the right desires is more likely than would a morally bad person to understand what should be done, more likely to be motivated to perform and produce work on time, and more likely to be dependable seeing as construction work requires a lot of honesty due to the intricate nature of the work that sometimes calls for one to work without supervision. A person who is disposed by character to be hardworking, punctual, diligent, honest and fair should be the one recommended for construction business. Since virtue is acquired through character formation, it is therefore important for one to have personal ethics.

2.3.3.4 Kinds of virtues

Human virtues can be either intellectual or moral depending on what they perfect in man. Gichure (1997), points out that intellectual virtues perfect the speculative or theoretical as well as practical reasonableness in man while the moral virtues are those which perfect the will in its choices and direct the natural tendencies. Intellectual virtues are understanding, knowledge, science and for these, the habits of prudence and art or skill and technique are necessary. Moral virtues on the other hand are prudence, justice, fortitude and temperance. They are also called the cardinal virtues because they are like hinges on which all the other moral virtues revolve.

To be a good professional, one needs a balance of both intellectual and moral virtues. One cannot be referred to as a good professional if either of the two is lacking. Thus, in examining personal ethics, both intellectual and moral virtues are examined, the intellectual virtues perfects reason in its practical aspect while moral virtues perfect the will in its moral choices. The good person, one with personal ethics, is the one who has intermarried intellectual and moral virtues. The intellectual virtues require

that you have studied and acquired knowledge in your area while the moral require you to be a good person thus getting a well-balanced professional.

In work, the virtuous person seeks something beyond mere possessing. He aspires to share the gift of what he is with other human beings: knowledge, talent, and virtue so that they too may be happy. At the technical and moral level, this way of understanding work leads to a desire to excel. Meaning that we consciously aspire to work well, making the greatest possible effort to produce perfect work according to the best models known. Professionality requires certain habits or virtues and reflection of vices opposed to these virtues. For work itself to be worthy, it must be done in accordance with certain objective norms. Effort though praiseworthy is not enough to make work good. Effort has to combine with quality, with detail, with aesthetics and with finesse. This is the ambit of patience, constancy and perseverance in the work begun; in it one has the opportunity to exercise understanding, promptness in serving clients and in treating them with the dignity that befits them as fellow human beings, those who need one's service (Gichure,1997).

Virtue ethics puts special emphasis on the development of the moral character. This makes virtue ethics an excellent platform from which to analyse various aspects of human action, professional work, and business activity (Fontrodona, Sison, & Bruin, 2013). They emphasize that human beings in their work do not just produce goods and services but also develop a series of abilities and competences that shape their personalities. Through their work they transform not just the environment but also themselves. "The good person takes genuine pleasure in being good. He or she derives satisfaction from being honest, compassionate, courageous, and from looking out for public interest. One feels like he is being true to himself." (Harris, 2008, p. 157)

A project is seen as the interaction of people consisting of different parties, the client, consultants, contractor and his workers, suppliers and so on. It is this interaction of people that sometimes makes projects complex. The realisation of importance of people in projects not only helps to understand the project context and the best

project management practices, but it is also an important aspect in understanding the very nature of complexity in projects (Azim, et al., 2010). This interaction of people and their professionality or lack of thereof is what affects projects.

2.4 Personal ethics

Ethics applied to business is business ethics, ethics applied to the professions is professional ethics. Therefore, one can say that personal ethics is ethics applied at the individual level. Studies in business ethics have basically measured personal ethics in terms of virtues. Many business ethics researchers have come up with ways of measuring virtues in business managers by developing virtue ethics scales; (Chun, 2005; Libby & Thorne, 2007; Racelis, 2013; Shanahan & Hyman, 2003). These scales classify people according to their beliefs about the virtuous qualities of business managers. Shanahan & Hyman (2003), draw on the works of Murphy (1999) and Solomon (1999) to develop a virtue ethics scale. Solomon (1999), provides a workable list of business virtues while Murphy (1999) provides a conceptual framework for grouping these virtues. Solomon admits however that some of the listed virtues, like justice, represent families of virtues rather than a single virtue.

Chun (2005) points out that the existing list of virtues in business ethics tends to have a trait approach for example, some traits descriptions are; courage, temperance, honesty, fairness, and sincerity. There is also the human personality adjectives approach which provides meaningful and representative set of terms for describing personal characteristics of social consequence. Personality adjectives would be for instance, courageous, temperate, honest, sincere and hardworking, brave, fair-minded. In trait generation approach, it is beneficial to start with an established personality adjective list (Briggs, 1992). While there isn't any established or validated adjective list in the context of business virtue, any items from related literature can be used to start with, for instance in construction, from related literature, it is possible to come up with a list that describes the people in the industry. Chun (2005) used the personality trait approach to develop a virtue ethics

scale. Shanahan and Hyman (2003) developed a virtue ethics scale from Solomon (1999) list of virtues and concluded that the scale could be used to study reasons for employee turnover or for establishing ethically congruent hires.

Finally, Racelis (2013) developed a virtue ethics scale for managers in the Philippines using Shanahan and Hyman's listing. The study concluded that the scale could be used to augment teleological and deontological ethical scales to be more aware of the virtuous qualities of business people and managers. The study recommended that empirical studies that would show that the possession of the elicited desirable character traits or virtues leads to – or at least correlated to-successful organizational performance should be done.

Empirical studies in virtue ethics, even though growing, are few indeed in business ethics, least of all in construction. Since construction is basically a business, the scales developed for business could be adopted for use in construction. Useful work in this area has been done by Murphy (1999), Shanahan and Hyman (2003), Chun (2005), Racelis (2013) in which virtue scales have been developed. The development of these scales was a big step in the effort to stress how virtues inherent in a person's character give them the propensity to act in ways that promote human flourishing (Racelis, 2013). Table 2.1 shows a summary of the scales developed in business ethics literature by different researchers and how they broke down the virtues into various traits in their studies.

Table 2.1: Virtue scale items in literature

Author	Level	Character traits
Shanahan & Hyman (2003)	Individual	Empathy, Protestant work ethic, Piety, Respect, Reliability, and Incorruptibility
Chun (2005)	Organisational	Integrity (honest, sincere, socially-responsible, trustworthy); Empathy (concerned, reassuring, supportive, sympathetic); Courage (ambitious, achievement-oriented, leading, competent); Warmth (friendly, open, pleasant, straightforward); Zeal (exciting, innovative, imaginative, spirited); Conscientiousness (reliable, hardworking, proud, secure)
Libby & Thorne (2006)	Individual	Non-mandatory moral (altruistic, benevolent, concerned with public interest, enlightened, even-handed, farsighted); Mandatory moral (Integrity, healthy scepticism, independent, principled, objective, truthful); Meliorating (cheerful, polite, sensitive, tactful, thoughtful, warm); Instrumental (alert, careful, diligent, cooperative, courageous, resourceful).
Racelis (2013)	Managerial	Care and concern (sympathetic, sincere, respectful, pleasant, reassuring, reliable, socially-responsible, generous, supportive, concern, secure, friendly, spirited, open, honesty, exciting); Competence (innovative, leading, mature, competent, intelligent, reliable, confident); Ambition (ambitious, aggressive, controlling); Superiority (superior, proud, straightforward)

Source: Adapted from literature by Author

2.5 Ethics in construction

In the present world of growing attention to ethical malpractice in many organisations, the study of ethics is imperative in any organisation. Unethical problems both at the corporate and operational levels of the construction industry have become commonplace. Oladinrin and Ho, (2014) and Mukumbwa and Muya (2013) both affirm that there is growing consensus within and outside the construction industry that corruption and other unethical practices are endemic. Hence it is an area that must be examined keenly.

Projects need ethics. In projects, working effectively together would be impossible without rules that define fundamental shared values and respective consistent behaviours. Sometimes researchers view ethics as something that must be imposed from the outside to make businesses successful. “Once developed and used, ethics become more than a philosophy. They become a way of life that is demonstrated through words, actions and expressions” Waggoner (2010, p. 15). However, Ruffa and Setti (2011) state that ethics in projects should be considered as a condition that promotes and enhances valuable professional practices in project contexts.

Various researchers have identified as unethical; unfair conduct, negligence, conflict of interest, collusive tendering, fraud, bribery, biased tendering evaluation, re-tendering, and non-payment of consultants’ fees amongst others (Vee & Skitmore, 2003). Bowen et al. (2007), carried out a survey in which they concluded that ethical issues needed to be reconsidered to encompass the cost and benefits of ethics compliance instead of the usual way of looking at them from the moral and legal perspectives. However, simply complying with a code of ethics may not necessarily reap any benefits if the individuals are not ready to change their behaviour.

Ethics in construction mostly exists as professional ethics or codes of ethics. Its function is to protect the “lay” person from the professional who may take advantage of him. Professionals have serious impact on the lives of their clients, and a profession has a reputation to defend (Solomon, 1999). Thus, many professions have established codes of ethics to guide their members in the conduct of their business.

Sometimes the publication and distribution of a corporate code of ethics is an explicit expression of a set of values that has in fact governed the profession and its members for quite some time. Sometimes, at its worst, it is a desperate attempt to persuade or threaten employees or members into compliance with a set of principles that do not play a significant role in the day-to-day behaviour of its members or employees (Solomon, 1999). And sometimes a code is nothing but a hypocritical attempt at public relations. This is why having a code of ethics or conduct does not necessarily mean that the members will adhere to it.

Whether corporate codes of ethics work depend, Solomon (1999) argues, on whether a code of ethics is viewed as an instrument for hammering employees and managers into shape or it is viewed as an expression of the actual day-to-day working values of the employees and managers of the company. And as Gong and Zhang (2010) stated; as far the individual is concerned, when he does not change duties and rules into his internal demands but treats them as mere external rules then there is no virtue at all. Unless the individual professional internalises these codes of ethics, they remain at a very superficial level and will not affect how he carries out his duties.

Mason (2009) concluded in his study that it was unrealistic to expect ethical improvement in the industry either through the promotion of a single code or through enforcement of related criminal sanctions. This is a logical conclusion since there are many professions in the industry and many participants who are guided by different codes or none at all (as in the case of employers or clients of the projects).

Abdul-Rahman et al., (2014) conceded that professional ethics within the industry affects a wide spectrum of the general population; the local authorities, public works, client organisations, consultants, suppliers, contractors, home buyers and users who will have their own contribution towards the issues of ethics in the local contruction industry. Mason (2009) found that codes are popular in the industry but, in spite of this, incidents of unethical behaviour are extremely high and that there was no consensus on exactly what constitutes unethical behaviour and what should be done about it. Although, Ho (2011), showed that when corporate codes are integrated within the culture of an organization and effectively communicated, they do promote ethical behaviour by guiding employees to make decisions about good ethical standards. In Hong Kong the codes were found to be ineffective unless good and effective communication existed (Ho, 2011). The studies cited above show that codes of ethics alone are not enough to ensure ethical behaviour in employees, more would need to be done.

Most solutions to unethical practices in construction tend to be reactive. Abdul-Rahman et al. (2010) found that unethical conducts have a direct and negative impact on the quality of construction. As a solution to this they proposed that professionals should behave with professional integrity and reasonable care. Tabish and Jha (2011) argue that individual commitment is the most important factor in the fight against corruption, but also accept the reality that collective action may be the only way to produce widespread changes. Corruption is best handled through prevention- through proactive means of forestalling rather than reactive means of rooting it out (Heineman & Heinemen, 2006), they do not however mention what these proactive measures are. Abdul-Rahman, Wang and Saimon (2011) found that the best way to mitigate unethical behaviour was to make unethical activity criminal, training programmes on professional ethics and law and regulation enforcement by the government.

Vee and Skitmore (2003) found an interesting result. In their study, more than two-thirds of the respondents stated that association with companies that conduct business in an unethical manner did not affect their levels of business. This is interesting because it implies that so long as construction is efficient, the behaviour of those who take part in it does not matter.

Apart from the emphasis on codes of ethics, not much has been done in ethics and the built environment. Most proponents of this subject (Fisher, 2000; Fox, 2000; Whitelegg, 2000) tend to focus on the fabric of the environment and the effects that building, or construction has had on the environment. Debate therefore focuses mostly on how the built environment creates inequalities, a loss of community and social injustice. This happens mostly where there has been displacement of families to create space for building. And professionals in the built environment have responsibility in these matters and are thus challenged to build ethics into their work. A summary of the studies depicting ethics in construction in given in Table 2.2.

Table 2.2: Studies on construction ethics

Author	Problem setting	Geographical setting	Methodology	Data collection	Variables	Methods	Findings
Le et al (2014)	Corruption research in construction	Global	Structured review method	Review of research interests in 56 corruption papers	Forms of corruption Impacts of corruption, Anticorruption strategies	Review of literature	Main anti-corruption strategies include transparency mechanism, project governance, audit and information technology, ethical codes.
London and Everingham (2006)	Ethical behaviour in the procurement process	Australia	Thematic Analysis	Open technology workshops			Culture change needed Through communication and creating business alliances.
Vee & Skitmore (2003)	Professional ethics in construction industry	Australia	Survey	Open ended questionnaire	Ethical improprieties, professionalism in the industry	Random sample of various companies and individual practices	Curbing of unethical conduct is difficult despite codes; all participants require a common understanding of ethical and professional values.

Adnan et al (2012)	Contractors' perspective of ethical issues in construction industry	Malaysia	Survey	Self-administered questionnaires	Problems related to ethics in construction and their solutions		Cover pricing, bid cutting, later and short payments, lack of safety ethics, unfair treatment of contractors, falsification of experience and capabilities, poor documentation etc. Solutions: A complaints system, ethical practices through leadership, integrity pact; Quality assurance group, internship, media role in promoting ethical society; long term solutions
Zarkada-Fraser & Skitmore (2000)	Attitudes and behavioural intent towards collusive tendering	Australia	Survey	Self-administered close-ended questionnaire	Internal factors. External-environmental factors, external-situational factors		Collusive tendering is a result of a decision with moral content, and generally perceived as unacceptable.
Fan, Ho and Ng (2001)	Quantity Surveyors' ethical behaviour	Hong Kong	Survey	Self-administered questionnaire		Snowballing sampling method	When QSs face ethical dilemmas, different groups have different constituents influencing their decision making. Older ones believe interests of the public to be more important while younger ones value employer, self and client.

Source: Adapted from literature by Author

2.5.1 Professional ethics in construction

A profession is an occupation that requires both advanced study and mastery of a specialised body of knowledge and undertaken to promote, ensure or safeguard some matter that significantly affects others' well-being (Vee & Skitmore, 2003). Almost every profession has its codes of ethics to provide a framework for arriving at good ethical choices (Abdul-Rahman et al., 2014). Therefore, professional ethics is a system of norms that applies not to an individual but to all professionals practising in a particular profession. There is shared responsibility in professional ethics. The nature of the construction industry makes it susceptible to unethical practices mostly because construction projects are one-off and unique, that means there is little to detect when costs have been artificially inflated to facilitate money being siphoned out through corruption (Mukumbwa & Muya 2013). Projects continue to be bigger and complex and the pressure to win them at any cost sometimes takes centre stage. This situation calls for leadership in business, project organisation and ethics to complete tasks successfully.

According to Fisher (2000), ethics codes adopted by professional organisations have some characteristic deficiencies. First, the motivation for obedience is driven by compulsion: agreement is required for membership, and violation is punishable by reprimand, suspension or expulsion. This is a classic case of doing right for wrong reasons. Second, the focus and motivation for the principles derives from an assessment of the professional's role and behaviour. Other stakeholders in the process do not feature prominently hence the codes will tend to prescribe what is morally correct for that profession alone to the neglect of others' proper roles yet there are so many participants from different backgrounds in a construction project setting. Finally, codes are written from the perspective of the professional organisation and so do not necessarily honour the preferences, or other global moral concerns of other parties. This is especially true in construction where you have participants from different fields who may not necessarily be guided by professional codes of ethics hence codes of ethics are not necessarily effective in instilling ethics.

Fox (2000) emphasises a principle ethics approach arguing that those charged with responsibility for the built environment ought to uphold the fundamental principle of responsive cohesion. This principle entails endeavouring to ensure that examples of the built environment are responsive to, or answer to, their ecological, social and built contexts, and that they do so in that overall order of preference (Fox, 2000). Thus, according to Fox, if a particular outcome failed to exemplify the principle of responsive cohesion, then it couldn't be as good an outcome as one that did exemplify this principle since it is on the basis of this principle that we ought to make our judgements of better and worse in the first place. This approach is rather abstract in its application to construction problems since as literature suggests, most construction ethics problems are more than responding to social, environmental and ecological problems.

From the literature above, it can be seen that ethics in the built environment is detached from ethics of the participants. This ethics is also reduced to issues such as employment, accessibility of the site, social equity, and public participation. But ethics in the built environment goes beyond codes and rules and touches individual decisions because these individuals form a community and this community of persons (in a project) bears the consequences of each other's actions (Gomez, 1992).

2.5.2 Unethical practices in construction

The construction industry has an international reputation for corruption, asset misappropriation and bribery (Sohail & Cavill, 2006). Vee and Skitmore (2003) state that some of the common unethical practises witnessed or experienced in the construction industry are impropriety in government tendering, and the practice of underbidding to gain work and business, ethics impact on quality; lack of ethics in government organisations, impact on political ethics. They further found that 93% of the respondents believed that business ethics should not have priority over personal ethics and that two-thirds of the respondents had witnessed unethical professional behaviours. However, in their study, personal ethics was not defined nor was its contribution to the study stated.

Though the construction industry is the key driver of economic growth in many countries, the industry faces many ethical challenges related to behaviour (Ho, 2011). Several practices that could be termed as unethical are given by Bowen et al., (2007); Bowen, Edwards, & Cattell, (2012); Mukumbwa and Muya, (2013); Vee and Skitmore, (2003). Bowen et al. (2007) identified collusion, bribery, negligence, fraud, dishonesty and unfair practices as prevalent unethical practices in South Africa. Mukumbwa and Muya (2013) in their study of unethical practices in the Zambian construction industry cited poor quality monitoring procedures, delays in decision making, collusion between contractors and client representatives, collusion between contractor and consultants, certification of poor-quality work, bribery and corruption, failure to enforce specifications and standards, dishonesty among others. As can be seen from previous studies, most of these unethical practices originate from a lack of individual exertion. In terms of ethics, most of these unethical practices fall in the realm of professionalism guided by intellectual virtues more than moral virtues.

These are just some of the unethical practices in construction cited by various authors. In order to discern what virtues construction participants need most, we can draw from the unethical practices several vices prevalent in the construction industry which are dishonesty, greed, fraud, negligence and unfair practices. According to Thesaurus.com (2018) dishonesty is deceitfulness shown in someone's character or behaviour; greed is the intense and selfish desire for something, especially wealth, power, or food; fraud is the wrongful or criminal deception intended to result in financial or personal gain; negligence is failure to take proper care over something and unfair practices are acts that are not based on the principles of equality and justice. The vices above could be countered by the following virtues:

Justice divided into minor virtues of courtesy, honesty, truthfulness, diligence, punctuality, good use of time, and attendance. Justice is doing what you have an obligation to do and to render every man his due. Justice thus focuses on other people and not on self.

Fortitude is the capacity to face hard tasks. Fortitude helps us to face our fears. It is manifested in the minor virtues of patience, perseverance, details, punctuality, responsibility, courage, diligence, hard work, finishing off things well, daring to be different, and adherence to a schedule.

Temperance enables us to keep from doing wrong even when we have strong feelings for it. It shows restraint in emotions, and passions. It is manifested in; magnanimity, sobriety, and controlling our temper.

Prudence denotes a "certain rectitude of discretion in any actions or matters whatever" (The Internet Encylopedia of Philosophy [IEP], 2016). As a cardinal virtue, prudence functions as a principle virtue on which a variety of other excellences hinge. Those excellences include memory, intelligence, docility, shrewdness, reason, foresight, circumspection, and caution. Without these excellences, we may commit a number of cognitive errors that may prevent us from acting in a morally appropriate way. For example, we may reject the guidance of good counsel, make decisions prematurely, or act thoughtlessly by failing to judge rightly through contempt or neglect of those things on which a right judgment depends (IEP, 2016).

Greed can be dealt with by justice and temperance. Dishonesty can be dealt with by truthfulness, which is a minor virtue under justice. Negligence can also be dealt with by fortitude, justice and minor virtues of diligence and industriousness. Fraud can be dealt with through sincerity, truthfulness and trust. Unfair practices will also fall under justice. Table 2.3 shows a summary of the unethical practices prevalent in the construction industry, their corresponding vices and virtues needed to root them out.

Table 2.3: Vices prevalent in the construction industry

Vices	Unethical practice	Virtues
Greed	Compensation of trading costs	Justice, Temperance
	Theft of materials by foremen	
	Conflict of interest	
	Unethical use of variations and claims	
	Collusion	
	Unfairness	
	Collusion of contractor with consultant	
Dishonesty	Unethical use of variations and claims	Justice, truthfulness
	Collusion	
	Unfairness	
	Bid cutting	
	Over pricing	
	Contributory fees project costs	
	Bribery - gifts, favours, cash	
	Fraud	
	Fabrication of test results	
Negligence	Certification of poor-quality works	Fortitude, justice, diligence, industriousness
	Poor quality drawings	
	Poor quality materials	
	Poor workmanship	
	Failure to enforce specifications and standards	
	Certification of poor-quality works	

Fraud	Poor workmanship	Justice, sincerity, truthfulness, trust
	Overpricing of materials	
	Tampering with signed documents	
	Non-payment of certificates	
Unfair practices	Non-payment of workers	Justice
	Profit sharing of contractor with other clients	
	Bias in decisions	
	Poor pay	
	Receiving of bribes in order to award contracts	

Source: Author, 2019

2.5.3 Personal ethics in construction

An important aspect of ethics in the construction industry is "personal ethics" often interpreted by construction professionals as treating others with the same degree of honesty that they would like to be treated (Vee & Skitmore, 2003). In their research, Vee and Skitmore (2003) found that 93% of the respondents agreed that business ethics should be driven or governed by personal ethics, with 39% believing that a balance of business and personal ethics should exist and 45% believing that personal ethics should drive business ethics, that is, business ethics is acceptable until personal moral codes of conduct are violated.

Personal ethics in construction is important because participants in a project make decisions in an individual albeit professional capacity. Because of the social nature of the human person, one's own world is unavoidably enmeshed with other people's activities; his or her behaviour towards fellow human beings is something that cannot be ignored (Suen, Cheun, & Mondejar, 2007). Ethics is necessary because by it, people can position themselves within the web of interrelationships among other parts of created reality (Suen et al., 2007). The process of construction is typically characterised by its temporary multiple organizational setting where members from

different cultural backgrounds with different skills and talents join to achieve the same goal (Suen et al., 2007). The construction sector being one of the pillars of the world's economy has proven that products delivery within a short time is possible with the concerted efforts of individual members and organisations of the project team (Suen et al., 2007), so individual members of a project team are key to achieving success.

Effective management of ethics therefore requires that project participants know how to deal with ethical issues in their everyday work lives. All participants, regardless of professional allegiance, require a common understanding of ethical and professional values. Where there is a lack of professionalism and ethics, even the ethically good will have difficulty maintaining moral standards. Bredillet (2014) argues that ethics is not about codes of ethics, it's about developing a good character which will translate into virtuous acts. Therefore, for personal ethics to develop in construction, all have to develop good character. For professionals to make ethical decisions, they need to be convinced that it is the right thing to do and do it or that it is the wrong thing to do and therefore not do it.

It is obvious that personal ethics plays an important role in projects. Leaders can develop and facilitate the achievement of fair performance, develop values required for long-term success and implement them via appropriate actions and behaviours (Tabish & Jha, 2012). And Adnan et al. (2012) concluded in their study that good ethical practices were vital to obtain optimal benefits and smooth functioning of the industry itself. The many unethical practices seen in the industry are not as a result of a form of institutionalised corruption, but unethical decisions made at a personal or individual level.

Table 2.4 shows the definition of the virtues, their manifestations (how they are operationalised) and the corresponding applications in construction. As many scenarios as possible in construction are included to cover all aspects of the virtue.

Table 2.4: Operationalisation of virtues used in study

Virtue definition	Operationalisation /Related minor virtues	Applications to construction
Prudence **Doing things well. Involves optimisation of the past, diagnosis of the present, foreseeing the future.**	Consulting for advice Study Communication Docility Capacity to learn and be taught Capacity to draw conclusions Ability to anticipate next course of action/plan Ability to make decisions	Conveying accurate information regarding the process or design of construction and being able to make informed decisions on various issues.
Justice/Fairness **That which is due. Aspects are:** **Distributive justice (fair distribution of gains and burdens); Commutative justice (justice of contracts); Legal justice (which has to do with obeying of laws and regulations and payment of taxes)**	Meeting agreed price Risk distribution Fair remuneration Rendering goods and services without defects Transparency Community service Fair competition Payment of taxes Observing laws and regulations Good use of time Punctuality Attendance of tasks at hand Truthfulness/honesty	Quoting fair prices, accepting risks, paying workers fair wages, paying the contractor on time, confidence that the client will get value for money and the contractor be paid for his work.
Fortitude **Helps resolve difficult questions. Has two aspects: Resisting difficulties; Undertaking hard tasks**	Patience Perseverance Punctuality Taking on responsibilities Courage Diligence in work Finishing off tasks begun Daring to be different Adherence to schedule Attention to details	Being able to make tough decisions even at personal cost, being able to advice the client on tough decisions even at risk of losing the job, maintaining integrity at all times.
Temperance **Moderation; self-control**	Using common funds for personal gains Self-control Magnanimity Sobriety	Not being involved in bid cutting, asking for kick-backs, bribery, overpricing products for personal gains.

Source: Author adapted from literature, 2019

This chapter has expounded on the meaning of ethics. It had been argued that ethics is the key to helping people achieve happiness. From the literature, it has been shown that virtues are key to practices of professions because they enable practitioners to seek that which is good for the whole of the profession. The chapter has also reviewed ethics as seen in the construction industry and concluded that personal ethics is needed for the good of the industry.

The next chapter is dedicated to project management success and the factors that influence it, the possible explanation for these factors and concludes with the research gap, theoretical and conceptual framework of the study.

CHAPTER THREE

REVIEW OF LITERATURE ON PROJECT MANAGEMENT SUCCESS

3.1 Introduction

In this chapter, the empirical literature on project success is reviewed. The chapter covers the literature on project performance and the factors influencing project success. The differences between project success and project management success, and between technical and human factors affecting project management success are brought out.

3.2 Project Performance

The construction industry plays an important role in the development of any nation. In many ways, the pace of the economic growth of any nation can be measured by the development of physical infrastructure, such as buildings, roads and bridges (Takim & Akintoye, 2002). The growth of a country and its development status is generally determined by the quality of its infrastructure and construction projects (Bello, Soyingbe, & Akinwamide, 2012) and as such a positive project performance shows growth of the industry.

A construction project often involves numerous parties who come together for a period to undertake an activity before the team is dismantled again. The level of success in carrying out construction project activities will depend heavily on the quality of the managerial, financial, technical and organisational performance of the respective parties and their cooperation (Takim & Akintoye, 2002). Thus, success depends on all the participants duly and diligently carrying out their duties.

Performance in construction has been measured in many ways. Measurement of performance is the regular collecting and reporting of information about the inputs, efficiency and effectiveness of construction projects (Takim, Akintoye, & Kelly, 2003). There are different dimensions to project performance, but project success is

always a criterion in the measurement. Takim et al., (2003) mention four dimensions; numerical indicators, subjective matters and what and whose performance is to be measured. Of what is to be measured, time, cost and quality always come into play. Literature is strewn with explanations of what comprises project success but these three remain a big part of the determinants of project success. Construction sector being one of the pillars of the world's economy has proven that products delivery within a short time is possible with the concerted efforts of individual members and organisations of the project team (Suen et al., 2007). Individual effort of the project participants is important in achieving project success or vice versa.

3.2.1 Projects defined

A project is typically a one-time endeavour, with a specific result or end-state envisioned (Benator & Thumann, 2003). Munns and Bjeirmi, (1996) define a project to be the achievement of a specific objective which involves a series of activities and tasks that consume resources and which should be completed within a set specification, having definite start and end dates. Pinto and Slevin, (1988) state that a project can be defined as possessing the following characteristics: a defined beginning and end (specified time to completion); a specific, preordained goal or set of goals (performance expectations); a series of complex or interrelated activities; and, a limited budget. Munns and Bjeirmi (1996), and Pinto and Slevin (1988) have done seminal works in this area and their works appear in almost all literature relating to project management success.

Examples of projects in the construction industry include; design and construction of a new building, extensions to an existing building, construction of a new road, and construction of a boundary wall. Bennator and Thumann (2003) distinguish a project from an on-going business activity by three characteristics which are: uniqueness, duration and people. A project is always unique in the sense that it sets out with a specific goal and completed after the goal is accomplished. It has a definite start and proposed end time and people who work on a project to make it a success. Other characteristics that are shared with business activities include budget, people and

relationships. Bennator and Thumann, (2003) emphasize that nothing happens on a project without good people making it.

The project manager is the person responsible for making things happen on a project. The project manager is responsible for managing the financial, technical and schedule requirements of the project in such a manner as to bring the project in on time, within budget and with a technical quality that meets or exceeds contractual performance specifications (Benator & Thumann, 2003). For this to happen, the project manager needs leadership and management skills in addition to the technical. Bennator and Thumann, (2003) make several statements that are important. For instance, they state that:

"The prudent manager must plan ahead." (p.13)

"Good people always find a way to make things happen." (p. 13)

"After you have determined what type of expertise is required for your project, you will want to find good people who possess the right kind of expertise needed on the project". (p. 14)

"Good people solve problems before they become problems, because they typically do things right the first time." (p. 15)

Bennator and Thuman (2003), however, do not define what good in this case means. One could infer that a good person is one who has good dispositions to the work at hand. This is the stuff that ethics deals with that is, apart from technical competence, a manager also needs moral competence to do a good job and that moral competence is within the realm of ethics.

In addition to the right kind of expertise, the project manager also needs to learn to communicate well and have leadership skills. "Research has shown you will have a better chance of gaining trust and achieving more effective communications if you try to understand the situation from the other person's world than if you focus on

your own frame of reference or own needs" state Bennator and Thumann (2003, p. 143). They contend, for instance, that to be a good communicator, one needs to be a good listener and that requires courage, and commitment and practice. These three attributes fall in the realm of the virtues of fortitude and perseverance. Thus, to be a good manager to achieve a successful project, one needs to have the virtue of fortitude.

Project management is orientated towards planning and control. It is concerned with on time delivery, within-budget expenditures and appropriate performance standards. This is the context of the short-term life of the project development and delivery. The focus of project management is distinct from that of the project because it is short term until delivery of the project for use is achieved. This is the context within which this study was conducted.

3.2.2 Project objectives

It has already been stated that projects are begun for a specific purpose or objective. Wit (1988) states that the conventional objectives of a project are to complete it on time, within budget and to specified quality. This objective has been viewed by most authors as simplistic, that the objectives of a project far surpass this (Cooke-Davies, 2002; Baccarini, 1999; Pinto & Slevin, 1988; Wit, 1988). Project objectives are taken to mean a wider context that extends to the functionality of the construction product and satisfaction of stakeholders beyond just completing it on time and within budget. And project management is the process of controlling the achievement of the project objectives (Munns & Bjeirmi, 1996).

Measuring success involves measuring the degree to which a project objective has been achieved. In this process, the objectives become the success criteria (Wit, 1988). Thus, the objective of the project at this stage of the life cycle is to finish within cost, time and quality and these three become the success criteria. The function of project management includes defining the requirement of work, establishing the extent of work, allocating the resources required, planning the

execution of the work, monitoring the progress of the work and adjusting deviations from the plan (Munns & Bjeirmi, 1996). In other words, *"project management is concerned with on-time delivery, within-budget expenditures and appropriate performance standards. Once delivery is achieved the management, as it relates to planning and control of the development and delivery, will cease"* (Munns & Bjeirmi, 1996, pp.82). It is also within this context that personal ethics of the participants are examined. It is to see, of the factors that influence project management success, which fall within the realm of ethics.

The study is limited to the short-term stage of the project, until project delivery for use. Hence the term project delivery is taken to mean doing it right, cost, time, quality, efficiency (Atkinson, 1999). Lim and Mohamed, (1999) viewed project success from a micro and macro viewpoint. Micro viewpoint was concerned with completing on time, cost, quality, performance and safety, while the macro viewpoint included completion within time, satisfaction, utility and operation.

Within the identified factors affecting project management success, there are underlying characteristics whose presence may not necessarily guarantee success, but whose absence will lead to failure. These underlying characteristics could fall under the realm of ethics. The project participants here are the consultants, the contractor and the client and the role they play in the project's completion within the set objectives.

3.3 Project success

The concept of project success has remained ambiguously defined in the mind of many construction professionals. Wit (1988), distinguishes clearly between project success which measured against the overall objectives of the project and project management success which is measured against the widespread and traditional measures of performance against cost, time and quality. He also distinguishes between success criteria which are the measures by which success or failure of a project or business will be judged and success factors which would be those inputs to

the management system that lead directly or indirectly to the success of the project or business. Project success is more long-term, project management success, short-term.

Baccarini (1999) states that project success has two concepts. First, *Project management success* which focuses upon the project success and the successful accomplishment of cost, time and quality objectives. It also considers the way project management process was conducted. Second, *product success* which deals with the effects of the project's final products.

Project success is defined as the highest level achieved at any point of assessment, regardless of performance at lower levels (Bannerman, 2008). Project success variously refers to (on time, within budget, to satisfaction) completion success of the products produced. Frimpong, Oluwoye and Crawford, (2003) define project success as meeting goals and objectives as prescribed in the project plan. A successful project means that the project has accomplished its technical performance, maintained its schedule and remained within budget. Table 3.1 shows the meanings of project success by different authors.

Table 3.1: Project Success Meanings

A matter of paying attention to the outcome criteria of budget, schedule, performance and client satisfaction.	Pinto & Slevin (1988)
A project is a success when it meets technical performance specification and mission to be performed and overall satisfaction from the key stakeholders.	De Wit (1988)
Project management success focuses upon the project process and time, cost and quality objectives. Product success deals with the effects of the project's final product.	Baccarini (1999)
Project success can be defined as meeting goals and objectives as prescribed in the project plan. Means that the project has accomplished its technical performance, maintained its schedule and remained within budgetary costs.	Frimpong. Oluwaye and Crawford (2003)
Project success has long been considered the ability to fall within time, cost, and quality constraints.	Ika (2009)
Project success is based on whether the project outcome meets strategic objectives of the investing organisation. It is meeting wider business and enterprise goals as defined by key stakeholders.	(Serrador & Turner, 2015)

Source: Compiled from literature by Author, 2019

Pinto and Slevin (1988) argue that projects are rated as successful because they have come in on or near budget and schedule and achieved an acceptable level of performance. These characteristics may be used because they are the easiest to measure (quantify) and they remain within the realm of project organisation. They further argue that it has been hard to agree on project success because project management hasn't arrived at a generally agreed upon determinant of project success. Apart from the iron triangle, they add client satisfaction to the definition of project success.

While it's true that there are projects that may be finished on time and within budget but considered failures, it may be argued that this has little to do with the project management (PM) team. The PM team is employed to do a specific job, not to make the business successful. The satisfaction of the users and client can only be blamed on the PM team if the cause of the dissatisfaction was caused by them and often the cause of dissatisfaction is caused by the project not finishing on time, within cost and specification. If this was not achieved, it would be hard to consider the project successful, especially where the quality is concerned.

Over time it has been shown that project management and project success are not necessarily directly related (Munns & Bjeirmi, 1996) and further argue that it is possible to achieve a successful project even when management has failed. Project success, it would seem, refers to more than just fulfilling the technical aspects. It goes beyond completing on time and within budget to whether the project has achieved business success, and both the client and user are happy. Ika (2009); Munns and Bjeirmi (1996) and Pinto and Slevin (1988) argue that there is no consensus as to what constitutes project success or failure. Munns and Bjeirmi (1996) clearly distinguish between project success and project management success and state that even though successful project management may lead to success of a project, project management will not stop a project from failing. The definition used in this study is based on Munns and Bjeirmi's definition of project management success. For the purposes of this study therefore, project management success is considered as being limited to the construction process and to time, cost and quality

Defining project success is difficult due to a lack of a universally accepted definition of project success and the fact that the concept of success remains vague among stakeholders (Tabish and Jha, 2011). In general, there is a lack of consensus on how to define success, lack of success, and failure, and despite their frequent use, such terms are perceived to be vague and difficult to measure (Ika, 2009; McLeod, Doolin & McDonell, 2012). Having looked at all those definitions there, this study opts to

define project management success as: the accomplishment of the construction of the project within time, cost and quality.

From the foregoing, it has emerged clearly that project success and project management success are different. The former is the overall success of the project while the latter is the completion of the project within the iron triangle. Project management success involves the project management team, the client and the builder. These are the parties that will ensure the completion of the project within its objectives.

3.3.1 Measurement of project performance

Project performance has been narrowly viewed in the past as meeting cost and time objectives and adhering to a product specification (Bryde, 2003). However, this has since changed, and researchers are now keen to include other criteria to define project performance and success. Project management performance focuses on the management process while project performance is the overall quality of the project as Bryde (2003) states, project management performance may influence the overall satisfaction at the outcome of a project, which is the overriding measure of project success.

A project's success is evaluated against the success criteria established. De Wit (1988) affirms that the success of a project and project management may be determined by measuring performance against success criteria or objectives (p. 168). Traditionally, project success has been measured using the iron triangle of time, cost and quality however, project success is now considered to be more than just delivery of the project on time, cost and quality. Project success includes other external criteria from the project conception through to the final closedown. Tabish and Jha (2011) state that a construction project is acknowledged as successful when it is completed on time, within cost and in accordance with specification. Ika (2009) argues that instead of the prescriptive method of measuring success, we should turn

to the context-specific and even symbolic and rhetoric project success criteria and critical success factors since success and failure form an interactive discourse.

A project is generally considered to be successfully implemented if it comes in on-schedule (time criterion), comes in on-budget (monetary criterion), achieves all the goals originally set for it (effectiveness criterion), and is accepted and used by the clients for whom the project is intended (client satisfaction criterion) (Pinto & Slevin, 2008). Project success has included several other criteria apart from cost, time and quality, by viewing project success from different perspectives such as meeting enterprise strategic objectives and enterprise financial objectives (Creasy & Anantatmula, 2013, p. 45). Within the project management literature, researchers have progressively widened the scope and constituency of what is meant by project success, recognizing that it needs to be measured against the overall objectives of the project (McLeod et al., 2012; Ika, 2009; Cooke-Davis, 2002).

McLeod et al. (2012) stress that project success criteria that focus beyond the project management process constitute behavioural, business, and strategic dimensions. While such criteria can support a more holistic and inclusive definition of success, they tend to be subjective, intangible, and difficult to measure. This is line with Tabish and Jha (2011) on meaning of success criterion which is a contextual level meaning taking into perspective factors such as circumstances, environment, and culture. Such criteria are especially important in this study where the focus is away from technical factors and more on soft skills. Howsawi et al. (2011) argue that there is an important dimension missing in the search for formulating the success measurement and that missing dimension is the circumstances surrounding the project.

3.3.2 Project Management Success

Early researchers such as Pinto and Slevin (1988), Wit (1988), Munns and Bjeirmi (1996), Baccarini (1999) have all distinguished project management success from project success. Atkinson (1999) argues that the iron triangle seems to continue to be

the preferred success criteria because project management seems keen to adopt new factors to achieve success but continues to measure or judge project management using a failed criteria. Atkinson (1999) explains that the reason projects continue to fail or not succeed could be because of a reason that we are not looking for in the first place and that project management could be committing an error where something has not been done as well as it could have been or something was missed. This is interesting because there are numerous researches that have been done in this area, yet all seem to come up with even more factors that cause success or failure but none that shows the root cause of project management success hence the need to unearth the underlying factors of project management success.

3.3.3 Factors influencing project management success

Researchers have identified factors that may influence project management. Major causes of project overruns take place in the construction phase more than any other phase claim Frimpong et al. (2003). Shane et al. (2009) state that project growth cost often manifests itself during construction. Pinto and Slevin (1988) look at critical success factors across the different project life cycles. They conclude that it is insufficient to simply ask the question "what factors are most important to project success?" and that it depended on each phase of construction life cycle. In the execution phase, mission, leadership, trouble-shooting (detecting and correcting errors), schedule/plans, technical tasks (competent personnel) and client consultation were most important factors.

Pinto and Mantel (1990) defined project failure as a project that is terminated prior to completion. They found that the factors that fall under project failure were: mission of the project and client acceptance at the strategic stage and trouble-shooting, personnel, technical tasks, schedule and client acceptance at the tactical stage. They concluded that terms such as project failure and success must be assessed based on several criteria not one monolithic measure. These factors are like those in Pinto and Slevin (1988) except that failure comes as a result of inadequately addressing these factors. From these we can conclude that the important factors in achieving success

are: Purpose of the project, project leadership, trouble shooting, scheduling and planning, competent personnel, communication, client consultation and decision making.

Chan and Tam (2000) found that an increase in the client's satisfaction with quality could be achieved by better project management actions (which include organisational decision making, designing structures and processes, selecting people, delegating responsibility, evaluating results and initiating changes, regular meetings, monitoring and inspections etc.), increased effectiveness of the construction team leader, increased client's emphasis on quality, and increased client's emphasis on time. Since quality is an aspect of the iron triangle, factors affecting quality eventually affect project management success. Clear and well-defined goals lead to more successful project performance.

Cooke-Davies (2002) states that it is fast becoming accepted wisdom that it is people who deliver projects, not processes and systems. Thus the "people" side of success factors is woven into their very fabric. Frimpong at al. (2003) identified 5 important factors that caused project delays and cost overruns in groundwater projects in Ghana. They were monthly payment difficulties from agencies, poor contractor management, monthly payment difficulties, material procurement, poor technical performances, and escalation of material prices. The results showed that many of the problems in groundwater construction originated from poor resources management (human, technical and material). They concluded that unless good practice in planning, coordinating, controlling and monitoring procedures happen, the same problems are bound to continue.

Chan et al. (2004) reviewed factors affecting project success into project management actions, project related factors, external environment, project procedures and human related factors. Of all those factors, human related factors were the most in number. They suggested that further studies should be done to establish the causal relationship between the critical success factors and the key

performance indicators. They further divided the human related factors to client and project team, since a project is composed mainly of several project participants.

Human factors do not seem to have much impact on project success in construction. A study by Pinto and Prescott, (1988) found that personnel was the only factor that was not found to be significant to project success. Belout and Gauvreau (2004) conducted a research to find out the importance of personnel management in project success. They contended that historically, with regard to project success, projects have been treated as technical systems and not behavioural systems and that major project failures are related to social issues. Their study found that personnel factor is only a marginal variable in project success. This finding was not surprising at all since Human Resource Management (HRM) in construction is not very well developed. As mentioned above, there is need to look at construction performance from the point of view of a behavioural system and not just the technical. How the behaviour of the participants affects their output and therefore project success. Toor and Ogunlana (2009) state that success in large-scale construction projects is a challenge and depends on several aspects which may include human-related factors, project-related factors, project management related factors and factors related to external environment. They further argued that comprehension, commitment, competence and communication are fundamental essentials for project success. Shane et al. (2009) examined several factors that are responsible for project delays and cost overruns and they were: planning and scheduling deficiencies, deficiencies in cost estimates prepared, inadequate control procedures, delays in work approval, and waiting for information. These factors were mostly caused by human deficiencies and originated from poor resources management.

Since time and cost are part of the performance indicators for project management success, causes of delay in projects were also addressed in the review. In a study conducted in Egypt, it was found that the important causes of delay were financing by contractor during construction, delays in contractor's payment by owner, design changes by owner, partial payments, non-utilisation of professional

construction/contractual management (El-Razek et al., 2008). The common factor in the causes of delay stated is the human element. A delay, a change, non-utilisation; all these point to the role that the human factor plays.

Toor and Ogunlana, (2009) found that success factors mostly revolved around three aspects of; project planning and control; competent personnel; and involvement of client. With regard to personnel the study only dwelt on technical factors like knowledge, experience and proficiency of team members. Leadership capabilities of the project manager was also deemed to affect project outcomes. Finally, the client's actions also affect the performance of the project. Clients should be clear about what is being asked, be quick in their response, ensure decisions are clearly communicated and address financial needs of the stakeholders.

A summary of factors that lead to project success shows that even though projects are treated as technical and not behavioural systems, most factors have to do with the "soft" side of the project more than technical. Table 3.2 shows the summary of factors affecting project success.

Table 3.2: A summary of success and failure factors in literature

Factors	Description of factors	Literature sources
Project mission	Goal and purpose of the project, commitment, dedication and interest of all parties in accomplishing project mission	Pinto and Slevin,1988; Pinto and Mantel, 1990; Munns and Bjeirmi (1988), Belout and Gauvreau (2004), Toor and Ogunlana (2008),
Leadership	Project leadership during the actual work; technical, administrative, interpersonal, motivator, conflict resolver	Munns and Bjeirmi (1988), Pinto and Slevin (1988), Chan and Tam (2000)
Trouble shooting	Procedures for detecting and correcting errors that come up	Pinto and Slevin (1988), Belout and Gauvreau (2004)
Scheduling/planning	Important feedback mechanism to all parties, clearly defined tasks, effective planning and control	Munns and Bjeirmi (1988), Toor and Ogunlana (2008),
Competent personnel	Competent personnel to assist in technical actions/ tasks, competent project manager, competent contractor	Pinto and Slevin (1988), Frimpong et al. (2003), Belout and Gauvreau (2004), Nguyen et al. (2004), Toor and Ogunlana (2008),
Communication	Communication channels open throughout the project, regular client consultation, responsive client, communication among different parties.	Pinto and Slevin (1988), Munns and Bjeirmi (1988), Nguyen et al. (2004), Toor and Ogunlana (2008),
Client involvement	Communication, feedback, listening, decision making, payments, acceptance of plans	Pinto and Slevin (1988), Chan and Tam (2000), Frimpong et al. (2003), Belout and Gauvreau (2004), Toor and Ogunlana (2008),
Top management support	Management actions of the project team, commitment	Munns and Bjeirmi (1988), Chan and Tam (2000), Belout and Gauvreau (2004), Nguyen et al. (2004),

Source: Adapted from literature by the Author (2019)

Williams (2016) conducted a study on the root causes of success factors using causal mapping as a method of analysis, Williams uncovers the root causes of why projects were successful. The study showed that beyond the mere technical factors, there are a number of factors that together produce success, for instance, company employees focus on delivery rather than systems and processeses. There was individual concern for the company reputation within employees which led to more customer engagement. The company establishes behaviours upon which they hire and reward such as being: "*professional, positive, team player, customer focused, and do the right thing*" (Williams, 2016, p. 109). This in turn ensures there are fewer defects, which makes the customer happy, and in turn a happy company team hence work gets finished on time and within budget which also means that there will be greater trust by manegement. Goodwill begets goodwill. When employees are happy, they work better and the company is happy; so is the client. Thus the study demonstrates that project succcess is multi-dimensional and not simply a one-way projection. Williams (2016) concluded that success is achieved by not only multiple interacting criteria but also by multiple interacting factors.

Apart from factors affecting the success of a project, research has also come up with frameworks within which success can be achieved. Howsawi et al. (2011) developed a four-level project success framework which could help guide the process of defining success for specific projects. In addition to the success criteria of process related, product related and business related, they add a fourth which is context related. Contextual circumstances have a crucial impact upon the project success because it contains the criteria that deal with externalities that have effect upon the project and project team or organisation.

Most of the factors affecting project management success in literature deal with technical factors. However, as Creasy and Anantatmula (2013) point out that project management is an evolving discipline hence there is a shift in technical bias from focusing on techincal skills to project manager behaviours and that "soft skills" of project managers are gaining in perceived importance and research attention. Human

factors play a significant role in project success as reported by Tabish and Jha (2012). Management must give due importance to human factors and select competent and qualified project team leaders.

3.3.4 The "soft" side of project management

Literature suggests that it is people who deliver projects, not processes and systems, (Phua, 2013; Cooke-Davies, 2002; Gichure, 1997). Such people-matters are leadership, motivation, and ethics amongst others. Whilst quite substantial research has been carried out on motivation and leadership, few studies have been conducted on ethics and especially personal ethics.

Tabish and Jha (2011) stress that it is important to avoid major changes during construction as not only do these cause cost and time overruns but also doubts are raised about the genuineness of these changes. This apparently can be avoided by sound planning but due to shorter planning periods for public projects, sincere and focused efforts are required. It is interesting to note that the issue of sincerity in efforts should summarise these factors since this would be drawn from individual effort.

Chan and Chan (2004) developed a set of Key Performance Indicators (KPIs) to enable the measurement of project and organisational performance throughout the construction industry. The indicators are in two sets, objective and subjective. The objective measures use mathematical formulae to calculate respective values while the subjective ones use subjective opinions and personal judgement of the stakeholders. The objective measures are: construction time, speed of construction, time variation, unit cost, percentage net variation over final cost, net present value, accident rate and environmental impact assessment (EIA). The subjective measures were; quality, functionality, end-user satisfaction, client satisfaction, design team satisfaction, and construction team's satisfaction. The authors also found a limitation in measuring health and safety and number of accidents so in the current, a subjective measure is used.

Jha and Iyer (2007) in investigating the reasons for under-performance in quality in India found that the project manager's competence, top management support and their competence, interaction between project participants and monitoring and feedback by project participants are the factors that have a positive contribution to achieving desired quality level. They conclude that the essential factors to achieve good quality are the 'human element rather than machinery' and 'good communication among people'. This is yet another research that highlights the importance of the 'human' aspect of projects. Cicmil et al. (2006) argue that actuality research should be viewed as an alternative through which new insights into projects and project management practice can be generated. Actuality stresses that projects do not exist as a given, ready-made and neutral, but are constituted by the actions of interdependent actors through the process of power and conversational relating.

From the foregoing discussion, it is apparent that human factors and thus human behaviour is important for project management. It is therefore important to look briefly at how behaviour affects management of construction projects.

3.4 Theories explaining cost overruns

There is numerous research that has gone into project success and its various components and the factors that cause either the success or failure of a project. That there is a problem of cost and time overruns and therefore project management success in construction is obvious from literature, yet the explanations of why this is so are still not clear. In their study, Cantarelli, Flyvbjerg, Molin and Wee (2010) provide an overview of explanations for causes of cost overruns in large transport projects and their theoretical embeddedness in order to gain a better understanding of the phenomenon of cost overruns. They provide explanations as to why cost overruns happen and divide those explanations into four groups: technical, economic, psychological and political explanations. *Technical* explanations are commonly found in literature on cost overruns; for example, forecasting errors, scope changes, and inadequate organization. *Economic* explanations are exemplified by deliberate underestimation due to lack of resources, poor financing, lack of incentives, and lack

of resources. The third explanation is *psychological explanations* which are based on concepts of planning fallacy and optimism bias by local officials, cognitive bias and cautious attitude towards risks, and the last explanation is *political,* which are generally agreed upon in literature as the main explanations for cost overruns and they include cost underestimation, manipulation of forecasts based on private information, lack of coordination, lack of long-term commitment, and lack of discipline. According to Cantarelli et al. (2010) both political and economic explanations use utility as a basis to understand behaviour.

Cantarelli et al. (2010) came up with a plausibility of explanations based on their theoretical embeddedness. Table 3.3 shows theories used to support explanations for cost overruns.

Table 3.3: Explanations for cost overruns and the theories supporting them

Explanation	Theory
Techni``cal	Forecasting
	Planning
	Decision-making
Economical	Neo-classical economics
	Rational choice
Psychological	Planning fallacy and optimism bias
	Prospect
	Rational choice
Political	Machiavellianism
	Agency
	Ethical

Source: Adapted from Cantarelli et al. (2010)

Although ethical theory is mentioned in the study, little follow up is done on it because "*its contribution to a full understanding of cost overruns is considered to be small due to its weak relationship with cost overruns"* (Cantarelli et al.,2010, p.15). It is because of this weak consideration that the influence of ethics needs to be studied at a deeper level.

3.4.1 Behavioural economics and management

The aim of this section is not to go into details of evidence of this behaviour but simply to illustrate that more than the technical factors affect project success; emphasis needs to be laid on the behavioural aspects which affect most processes in construction. This aspect has been sorely neglected. This section argues, that it is this behavioural aspect that translate into or is explained by personal ethics in other words, individual moral choices.

Behavioural economics is concerned with how people actually behave (Heap, 2013). The question presented is that given the vast experience that firms, and organisations have with project management, why are projects not completed on time, on scope and within budget? Typical project management approach focuses on processes, policies and procedures yet in spite of these approaches projects continue to fail (Hardy-Vallee, 2012). These aspects are the rational aspects of the project management, but the emotional side tends to be overlooked. Patton (1999) admits that 80% or more of all work processes consist of human behaviour. This is especially true of construction, for instance, most of the processes include planning, making decisions, making payments, holding meetings, and approvals. These activities are influenced by human behaviour and thus even though the technical parts may be in place, if the human behaviour is missing it could create problems.

Behavioural issues lean towards the "soft" side of project management in which relationships, cultures and meanings are valued (Silva et al., 2016). In their study Silva et al. (2016) found that leadership and the role of the leader are relevant for achieving results in projects. The leader has an essential role in relations,

communication and teamwork. They also report that one of the studies emphasises that minor importance is given to how a project team influences three important factors such as cost, schedule and operability and suggest that future research find out the relation between performance and behaviour of team members and the project. They do suggest, however, that future research incorporate behavioural issues more assertively into project management structures and how these structures can collaborate with the development of high-performance teams and members to achieve project success.

The traditional and rational project management methodology is widely criticized for neglecting human and behavioural factors that is the main contributor of uncertain project environment, which has significant influence on the ultimate outcome of the project (Belout & Gauvreau, 2004). Despite the numerous research that has been carried out in project management, the track record is still poor. Overruns are common, and many projects find it difficult to fulfil their objectives. Literature on project success explains this in terms of factors that lead to failure or success of projects but fails to provide explanations as to why these failures or successes are. Hence empirical studies on what is actually taking place in project organisations is still needed (Packendorff, 1994).

Leybourne (2007) found that there was an overwhelming emphasis on tools and techniques involved in project management and only limited attention to the behavioural aspects of the management of projects and even less on ethics. Few explanations have been offered on human factors affecting project success. Houdeshell (2012) states: *"Having managed many projects over the last 20 years, I've noticed a dynamic that cannot be explained. That dynamic is the human dynamic*." Houdeshell (2012) argues that as a project manager, no matter what tools you set in place and team you assemble, if one of those team members "drag their feet" the whole process will come to a stop.

As Hardy-Vallee (2012) summarizes: “The problem with single-minded focus on processes and methodologies is that once people are given procedures to follow, compliance replaces results. Everybody is concerned about how to do the job, not about the outcome or if the job is done well” (p.7). It's time to update project management with more emotional content. “Employees' and stakeholders' disengagement can make a project fail, but behaviour-based management can make projects succeed" states Hardy-Vallee (2012). Marom (2012) states that he is convinced that the single biggest contributing factor to project failure is lack of ethical and moral considerations. Other factors are more likely to have an impact, but their severity is compounded as a result of unethical and immoral behaviour. This is a strong assertion, but has not yet been tested empirically, from the literature reviewed.

Technical factors in a project are important but the effectiveness of those factors depends on the behaviour of the team members. They can either work towards the success of the project or their behaviour could sabotage the results. It is therefore important to consider behaviour of the participants and the role it plays in success of projects. Table 3.4 shows an analysis carried out by the Project Management Institute (PMI) publications by subject between the years 1996-2003. As can be seen, the topics on behaviour and learning are fewer than those on tools and techniques and of those on behaviour and learning, only one covered ethics.

Table 3.4: Analysis of PMI publications 1996-2002

Tools & Techniques	**#**	**Behaviour & Learning**	**#**	**Analysis**	**#**
Benchmarking	10	Career Development	9	Forecasting/Trends	23
Communications Mgt	52	Conflict Management	4	History	2
Contracts	8	Customer Relationships	5	Research/Theory	16
Critical Path	10	Decision-making	8		
Earned Value Management	38	Education and training	86		
Programme Management	6	Ethics	1		
Project Life Cycle	10	Knowledge Management	20		
Project Planning	51	Leadership	28		
Project Success Factors	25	Project HRM	30		
Quality Management	41				
Resource Planning	23				
Return on inv/value	15				
Risk Management	125				
Scheduling	37				
Scope/Time/Cost	62				
Work Breakdown Structure	6				
TOTALS	**519**		**191**		**41**

Source: Adapted from Leybourne (2007).

This section has shown that there are many factors that affect project success and failure. These factors are mostly technical. Few authors have focused on the behavioural yet of those almost none tackles the issue of ethics. The next section an explanation is provided on personal ethics and how it links with professional ethics in construction. The section will also show how virtue ethics manifests itself in the myriad of activities that take place on a construction project. Finally, a conceptual framework showing the link between project management success and ethics will be presented.

3.4.2 Summary of project management success factors

After the review of literature about various factors that influence project and project management success, a summary was made. Table 3.6 shows four different categories of factors; the purely technical factors, the factors that are bound to lead to project failure, the success attributes, and behavioural factors that will ensure success on a project. The success attributes are derived from the technical attributes by defining the qualities needed to achieve those technical factors. And the behavioural attributes are also derived from the success attributes. They are the kind of values one needs to possess to achieve the success attributes. Therefore, by practising them, it is assumed that one will also exhibit those behavioural attributes.

The first column on Table 3.5 shows virtues operationalised into specific actions. The second column shows success attributes (mostly technical) derived from literature. The third column shows success attributes that are behavioural, also derived from literature. The last column is a column that shows the operationalised virtue that features both in the technical and behavioural attributes. Table 3.6 then categorises these factors into the four possible explanations as proposed by Cantarelli et al., (2010). Table 3.5 has three columns which show technical success attributes, the middle column shows the necessary characteristics or values required to accomplish the attributes while the third column shows the behavioural attributes. In both columns 1 and 3 there are numbers which correspond to a characteristic from the middle column. Meaning that to accomplish an attribute from either the first or

third column, one would need to exercise the virtues or habits exhibited in the middle column (which are numbered). The numbers are simply to identify the virtues. For example, for adequate staff planning and execution one needs at least regularly consult for advice, be honest and adherence to the schedule planned.

Table 3.5: Factors that lead to success/failure of projects

Technical factors	Failure factors	Success factors/attributes of success	Behavioural attributes
Planning and scheduling deficiencies	Inadequate basis for project	Clear scope definition by PM, contractor	Leadership
Poor estimating	Unqualified project manager	Competent PM	Engagement and motivation
Inconsistent application of contingencies	Lack of leadership	Top management's support	Self-control
Delays in work approval	Lack of professionalism	Client support	Assertiveness
Construction mistakes	Slow decision making	Timely decision making	Relaxation
Construction complexities	Lack of defined scope	Adequate staff for planning	Openness
Availability of resources	Inadequate control procedures	Adequate staff for execution	Creativity
Variations	Unsupportive top management	Comprehensive pre-tender site investigation	Results orientation
Scope changes	Inadequately defined tasks	Thorough pre-qualification for potential bidders	Efficiency
	Lack of commitment	Competent design consultant	Consultation

Technical factors	Failure factors	Success factors/attributes of success	Behavioural attributes
Faulty execution	Lack of stakeholder commitment	Contractual motivation/incentive clause	Negotiation
Ambiguous contract provisions	No process for controlling the change	Timely finalization of detailed engineering plans and drawings	Conflict and crisis management
Delays in inspection and testing of work	Failure to manage end user expectations	Regular design and construction control meetings	Reliability
Financial difficulties	Breakdown in communication	Regular schedule and budget updates	Values appreciation
Resources shortage	Conflict between user departments	Regular quality control and quality assurance activities	Ethics
Poor contract management	Delivery/procurement approach this affects the allocation and transfer of project risks.	Team work	Communication
Low bid	Poor contract management	Communication	teamwork
Material procurement delays	Effects of inflation	Trust	Human resource management
Escalation of material prices	Market conditions	Conflict resolution	Behavioural characteristics
		No social and political interference	Learning and

Technical factors	Failure factors	Success factors/attributes of success	Behavioural attributes
Inflation		No bureaucratic interference	development
Unforeseen events		No labour problem during construction	
Unforeseen conditions		Technological know-how	
Availability of land without dispute		Compliance with anti-corruption rules and regulations in	
		decision-making process	
		Awareness of all audit/financial rules and regulations	

Source: Author, 2019

Table 3.6: Explanations for factors causing project success

Explanation	Factors causing success or failure	Theory
Technical	Planning and scheduling deficiencies	Forecasting
	Poor estimating	Planning
	Inconsistent application of contingencies	Decision-making
	Delays in work approval	
	Construction mistakes	
	Construction complexities	
	Variations	
	Scope changes	
	Faulty execution	
	Ambiguous contract provisions	
	Delays in inspection and testing of work	
	Material procurement delays	
	Unforeseen events	
	Unforeseen conditions	
	Availability of land without dispute	
	Inadequate basis for project	
	Slow decision-making	
	Lack of defined scope	
	Inadequate control procedures	
	Inadequately defined tasks	
	Clear scope definition by PM, contractor	
	Timely decision-making	
	Adequate staff for planning and execution	
	Comprehensive pre-tender site investigation	
	Thorough pre-qualification for potential bidders	

	Timely finalization of detailed engineering plans and drawings Regular design and construction control meetings Regular schedule and budget updates Regular quality control and quality assurance activities No labour problem during construction	
Political	Unqualified project manager Lack of leadership Lack of professionalism Unsupportive top management Lack of commitment No process for controlling the change Failure to manage end user expectations Breakdown in communication Conflict between user departments Competent PM Top management's support Client support Competent design consultant Team work Communication Trust Conflict resolution No social and political interference No bureaucratic interference Technological know-how Compliance with anti-corruption rules and regulations in decision-making process	**Machiavellianism** **Agency** **Ethical**

Economic	Financial difficulties Resources shortage Poor contract management Availability of resources Escalation of material prices Inflation Effects of inflation Market conditions Contractual motivation/incentive clause Awareness of all audit/financial rules and regulations	Neoclassical Rational choice
Psychological	Delivery/procurement approach and transfer of project risks Low bid	Planning fallacy Optimism bias Rational choice

Source: Author, 2019

Table 3.6 offers explanations for the different causes of success or failure in terms of virtues. The operationalised characteristics have been aggregated from literature.

Table 3.7: Factors leading to success and virtues derived from them

Technical success attributes from literature	Operationalised characteristics	Behavioural success attributes
Adequate staff for planning and execution 1 20 28	1. Consulting for advice	Openness 1, 12, 30
Team work 1,12,26 32,	2. Study	Consultation 1 3 5,
Trust 1,5,6	3. Communication	Teamwork,1 12 25 26 32
Competence 2	4. Docility	Learning and development 1 5
Technological know-how 2 11	5. Capacity to learn and be taught	Creativity 2 17 25 27 29
Client support 3, 23 24	6. Capacity to draw conclusions	Communication 3 29
Top management support 3 20 23	7. Ability to anticipate next course of action	Learning and development 5 6,
Timely decision making 3 6 19 20	8. Meeting agreed price	Human resource management 3 10
Communication 3 29	9. Risk distribution	Efficiency 6 18 25 26 28
Comprehensive pre-tender site investigation 7 19 29	10. Fair remuneration	Negotiation 8 14
Thorough pre-qualification of potential bidders 7 19 29	11. Rendering goods and services without defects	Results oriented 11 18 25 26 28
Contractual motivation 8 9 14	12. Transparency	Reliability 11 12, 18 19,20,21 32
Incentive clause 9 14	13. Community service	Conflict and crisis management, 13,16 18 24
No labour problems 10,16,29	14. Fair competition	Assertiveness, 16 22 27
Conflict resolution 11,13, 16,19,23	15. Payment of taxes	Relaxation,17 31
Compliance with anti-corruption rules16	16. Observing laws and regulations	Engagement and motivation 14 25,26
Timely plans and drawings 19,24, 29	17. Good use of time	Self-control 31 33
Regular consultation meetings 19, 23,	18. Punctuality	Values appreciation (holistic) 32
Regular QC and QA activities 18 19 20,23	19. Attendance of tasks at hand	Ethics(holistic) (all)

Technical success attributes from literature	Operationalised characteristics	Behavioural success attributes
Regular schedule and budget updates 8 19,28	20. Truthfulness/honesty	
Clear scope definition 19,23	21. Patience	
Compliance with rules and regulations 16, 20, 24	22. Perseverance	
Awareness of all financial rules and regulations 16,20,24	23. Taking on responsibilities	
No social and political interference 24,	24. Courage	
	25. Diligence in work	
	26. Finishing off tasks begun	
	27. Daring to be different	
	28. Adherence to schedule	
	29. Attention to details	
	30. Not using common funds for personal gains	
	31. Self-control	
	32. Magnanimity	
	33. Sobriety	

Source: Author, 2019

Some attributes are purely technical while others are as a result of presence or lack of human virtues thereof. Examples of factors not rooted in human virtues, but which are purely technical include: delays in approvals, availability of resources, financial difficulties, resource shortage, material procurement delays, escalation of material prices, inflation, unforeseen events, unforeseen conditions and availability of land without dispute. These are the factors that fall under the technical explanations from Cantarelli et al (2010). The rest of the factors are rooted in human virtues or lack of it thereof. A list of all factors that lead to project success, both technical and non-technical, were identified. Consequently, a list of all operationalised characteristics/virtues needed for construction industry are drawn from the unethical practices in the industry. Using the success factors drawn from literature, the researcher then matched the underlying explanation for these factors in terms of virtues. From the above list, the following list of virtues (characteristics) were deemed to be important to attain project success:

1. Consulting for advice
2. Communication
3. Capacity to learn and be taught
4. Capacity to draw conclusions
5. Meeting agreed price /honesty
6. Fair remuneration
7. Rendering goods and services without defects
8. Transparency
9. Community service
10. Fair competition
11. Observing laws and regulations
12. Good use of time
13. Attendance of tasks at hand
14. Punctuality
15. Taking on responsibilities
16. Diligence in work

17. Finishing off tasks begun
18. Daring to be different
19. Attention to details
20. Not using common funds for personal gains
21. Self-control
22. Magnanimity
23. Sobriety

These are the virtues that formed the basis for the questionnaire on virtue ethics scale in construction.

3.4.3 Link between factors affecting project management success and ethics

In this chapter, factors that affect project success and failure from literature have been addressed. Some of those factors could have an explanation in form of ethics in terms of virtue or lack of it thereof. Sison (2003) argues that the practice of virtues, (what he terms as moral capital), is excellence of character and relates to human, intellectual and social capital which perfects the human being in all aspects, and is essential for a firm. A virtuous character comes from possessing virtuous habits and virtuous habits come from performing virtuous actions. It can therefore be inferred that all the above technical and behavioural attributes of success in the end are rooted in whether participants in a project perform their actions virtuously or not. Thus, it is possible to establish a connection between virtues and success factors. This is further strengthened by the fact that "moral capital is built upon actions, on the exercise of actions, and not on the mere possession of capacities for action" (Sison, 2003, p. 63). A virtue consists in doing things well because we want to be good and not just for business efficiency. This means that most human actions have a moral significance and that includes professional activities as well. Human actions proceed from the will or desire or feeling of the agent. These actions are performed intentionally and deliberately.

3.5 Research Gap

From the literature reviewed in business ethics in chapter two, virtue ethics scales have been used to empirically measure the virtues of a people or organisation in business. This has not been developed in the construction industry. In the studies on ethics in construction, literature simply looks at the common unethical practices in the industry but does not link them to project management, no studies delve further into the explanations for project management success or failure. It has also been shown that studies have found personal ethics to be important in achieving professional ethics but the extent of that has not been shown in empirical research. The methods used in studying ethics in construction have mostly been perceptions of what goes on in construction and not on what the participants are like or how they behave. Geographically, most of these studies have happened either in Asia or Australia. In Africa, studies have been done in South Africa and Zambia, comprehensive studies on ethics in construction are yet to be done in Kenya.

The review of empirical literature on project management success has shown the key aspects on project management success and factors influencing project management success. These factors are more of causes for either project management success or its failure, but no explanation has been attempted for why this is so. The current study offers personal ethics as a possible explanation for project management success. Further, from the foregoing review of literature, projects are treated as technical systems where the behaviour of participants does not play a role. There is need to look at whether the behaviour of participants affects the overall outcome of the project.

In summary, most scholars have attributed construction project management success to technical reasons rather than actions of individual participants. Issues of ethics and quality of resultant projects have hardly been addressed. It is this gap that the thesis seeks to address. This study thus endeavoured to fill the gap in area of knowledge, methodology, geographical setting and field of study as stated in the above paragraphs.

3.6 Theoretical framework

The theoretical framework brings together the concept of project performance and personal ethics. Constructs of factors influencing project management success, and constructs of personal ethics have been reviewed in this study. These human success factors and personal ethics constructs are investigated on schedule, cost and quality performance, which determines success of a project. In this study, it is being hypothesised that project success is influenced by personal ethics and that personal ethics are manifested in the behaviour of the project participants which in turn will influence the success of the project as illustrated in the conceptual framework in Figure 3.1.

This study is guided by Aristotle's virtue theory. Virtue ethics focuses on the development of a good character of a person which translates into virtuous acts. Virtue ethics provides professionals an opportunity to ask themselves what kind of people they become through their actions and how their decisions impact the lives of others (Fontrodona et al., 2013). Since virtue ethics helps professionals not only to be good but to produce good work, it is a contradiction to see a good professional who produces poor work or a bad professional but who produces good work. Being good professionals in the ethical sense means that they try to do their work well with all the virtues present. As long as people still live in a social community, virtue will continue to remain relevant. And society needs righteous people, those with lofty ideas who hold good and justice in society higher than anything else (Gong & Zhang, 2010). To be able to achieve this, people who can turn external rules such as laws and codes of ethics into internal demands are needed. Gong and Zhang (2010), state that virtue means to treat duty and responsibility as internal requirements, making them key factors in one's moral character so that one cannot help doing so, and that virtue is not a means to profit from external interests. In this sense therefore, any modern profession cannot be without virtue. It is conceived that it is this lack of virtue that continues to create problems in the professions despite advancement in technology. Virtue is cultivated from a person's habit to act, or gradually formed in

life experiences. Therefore, the more one carries out good acts, the easier it becomes for them to act virtuously; the vice versa is also true, the more one in steeped in bad habits, the more that person grows in vice.

Behavioural economics is concerned with how people actually behave (Heap, 2013). Typical project management focuses on technical factors such as processes, policies and procedures rather than on individual factors that may affect project management success. Whilst many factors have been put forth for factors that influence project success, explanations as to why this is so have not been not forthcoming. Cost overruns, time overruns and poor quality in construction has become the norm rather than the exception. And this has not decreased over the past 70 years claims Marom (2012). It is the proposition of this thesis that the single biggest contribution to this continued state of affairs is a lack of personal ethics of the participants.

3.7 Conceptual Framework

The conceptual framework is derived both from operationalising personal ethics, the independent variable and project management success, the dependent variable. Individual factors summed up as personal ethics can be considered as traits which are manifested in behaviour that then affects performance (project management success) with an outcome that is either successful or not.

It could be stated that individuals' behaviour affects the outcome of their work and that they work more productively when they behave in normatively appropriate conduct. That is, the practice of virtues influences personal conduct and the behavioural choices made by individuals. Therefore, it could be summarized that the concept of personal ethics in the construction industry stems from two perspectives; the perspective of behavioural choices made by individuals and the perspective of conduct (personal virtue) through personal actions and interpersonal relationships which in turn affect project management success.

From the literature review on virtue ethics, there are four cardinal virtues (justice, fortitude, prudence and temperance) on which all minor virtues depend. These virtues have further been broken down into specific actions. Since virtue ethics should be examined within a community setting (Murphy, 1999) it follows that the best people to assess others' virtues are those who have worked with them in close cooperation, in this case a project. Construction projects therefore acts as the community for this particular setting. Table 3.8 shows the breakdown of constructs of the main variables used in the study, that is, personal ethics and project management success.

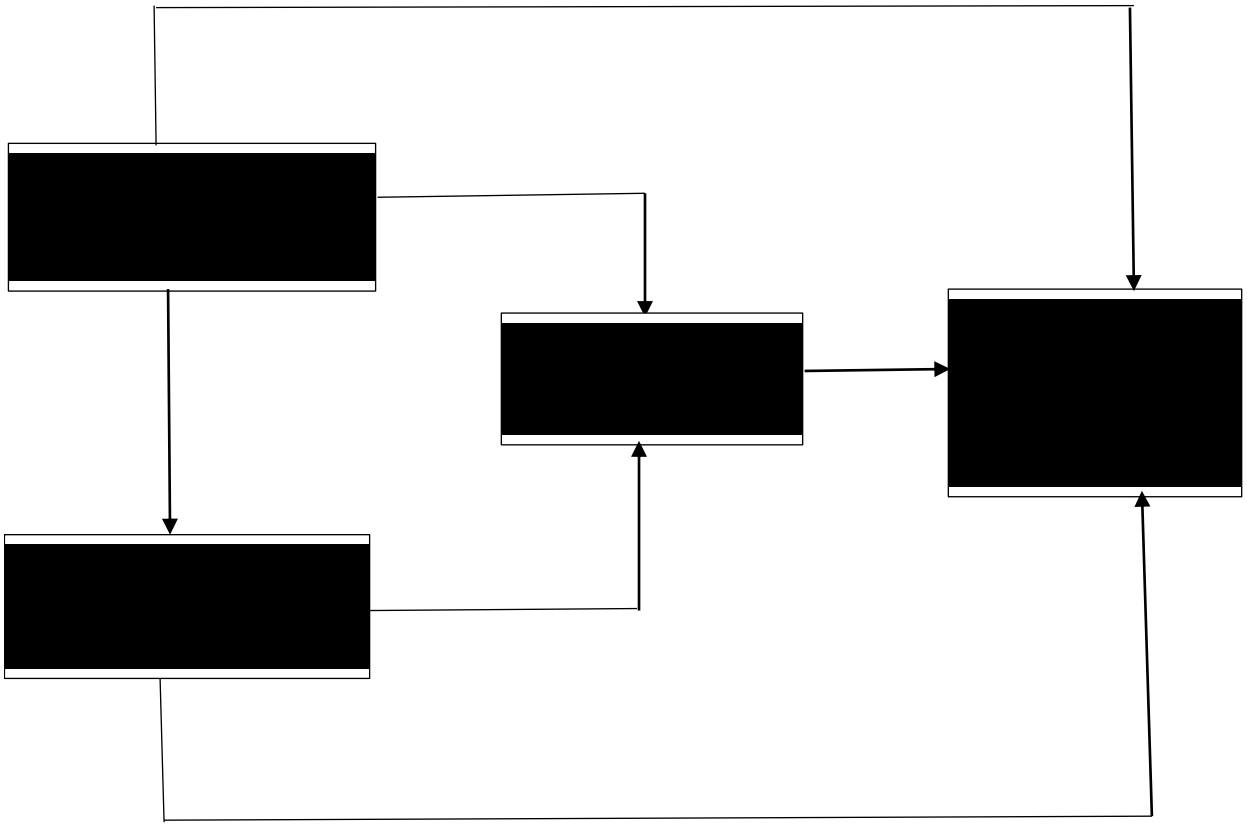
Table 3.8: Variables and constructs used in the study

Independent variable	Dependent variable
PERSONAL ETHICS **Personal virtue** • Prudence • Justice • Fortitude • Moderation/Temperance **Behaviour** • Underhanded • Unscrupulous • Liar • Blame shifter • Vindictive • Fraudulent • Immoral • Catalyst • Hog	**PROJECT MANAGEMENT SUCCESS** • Cost • Time • Quality

Source: Author 2019

Figure 3.1 diagrammatically represents the conceptual framework. Personal ethics of someone are measured by his virtues or behaviour. This is turn has an influence on project performance that is determined by time, cost and quality of the project.

Conceptual Framework



Legend:

Influences

Figure 3.1: Conceptual Framework

Source: Developed for the study by the researcher, 2019.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter outlines the details of the research process of the study. There are seven main sections in this chapter: paradigm, research design, population and sampling, data collection, variables in the study, data analysis and ethical considerations.

4.2 Research paradigm and philosophical perspectives

A research paradigm consists of the following components: ontology, epistemology, methodology, and, methods (Scotland, 2012). Ontological assumptions are concerned with what constitutes reality, in other words *what is*, the study of being (Crotty, 1998). Epistemological assumptions are concerned with how knowledge can be created, acquired and communicated, in other words, what it means to know (Scotland, 2012). Every paradigm is based upon its own ontological and epistemological assumptions. Different paradigms inherently contain differing ontological and epistemological views; therefore, they have differing assumptions of reality and knowledge which underpin their particular research approach. This is reflected in their methodology and methods. Theoretical perspective is the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria. Positivism is a theoretical perspective that informs a range of methodologies including survey, and experimentation. As a theoretical perspective, positivism is an approach to understanding and explaining society and the human world, and grounds a set of assumptions that the researcher brings to their methodology. Methodology is the strategy or plan of action which lies behind the choice and use of particular methods (Crotty, 1998). Thus, methodology is concerned with why, what, from where, when and how data is collected and analysed. Methods are the specific techniques and procedures used to collect and analyse data (Crotty, 1998). The data collected is either be qualitative or quantitative.

All paradigms can use both quantitative and qualitative data. Following the above explanations, the research paradigm of this study is as follows:

4.2.1 Ontological considerations

These are world views and assumptions in which researchers operate. Researchers always bring certain beliefs and philosophical assumptions to their research (Creswell, 2013). A close tie exists between the philosophy that one brings to the research and how one proceeds to use a framework. Philosophy in this case means the use of abstract ideas and beliefs that inform our research (Creswell, 2013). Ontological issues relate to the nature of reality and its characteristics.

The ontological position of realism was adopted in this study. Realism is the view that objects have an existence independent of the knower (Scotland, 2012). Its epistemological stance is that of objectivism. Objectivism is the view that things exist as meaningful entities independently of consciousness and experience, that they have truth and meaning in them as objects and that careful research can attain that objective truth and meaning (Crotty, 1998).

In the discussion about morality and ethics (section 0), the whole concept of ethics is viewed as objective. Moral justification, insofar as it is interpersonal must appeal to objective reasons so that in a moral conversation, the speakers see an objective good or bad. This conversation is neither influenced by the sole authority of the speaker, nor religion nor position. It is a conversation in which all participants agree that good must be sought and evil avoided and the outcome of this conversation must be generalised to all circumstances. It follows therefore that the epistemological stance best suited for this scenario is that of objectivism.

4.2.2 Epistemological considerations

Epistemology is how knowledge is known (Creswell, 2013; Crotty, 1998). Crotty (1998) explains that epistemology is a way of understanding and explaining how we know what we know. There are different epistemological positions as summarised by

Crotty (1998). There is *objectivism* which holds that meaning and therefore meaningful reality, exists as such apart from the operation of any consciousness. *Constructionism* affirms that there is no objective truth and that truth comes into existence in and out of our engagement with the realities in our world. That meaning is not discovered but constructed. A third epistemological stance is *subjectivism* which claims that meaning does not come from an interplay between subject and object but is imposed on the object by the subject.

The epistemological stance adopted in this study is that of objectivism. According to Creswell (2013), the positivist theoretical perspective is one of objectivism. Positivists go forth into the world impartially, discovering absolute knowledge about an objective reality. The researcher and the researched are independent entities meaning, knowledge solely resides in objects, not in the conscience of the researcher, and it is the aim of the researcher to obtain this meaning. Thus, phenomena have an independent existence which can be discovered via research. During the 20th century, post-positivism emerged from positivism. Post-positivism has similar ontological and epistemological beliefs as positivism, but they are slightly different.

Positivist methodology is directed at explaining relationships. Positivists attempt to identify causes which influence outcomes (Creswell, 2009). Their aim is to formulate laws, thus yielding a basis for prediction and generalization. A deductive approach is undertaken. Correlation and experimentation are used to reduce complex interactions to their constituent parts. Verifiable evidence sought via direct experience and observation often involves empirical testing, random samples, controlled variables (independent, dependent and moderator) and control groups.

Similarly, post-positivists seek to understand causal relationships; thus, experimentation and correlational studies are used, however, more than sense-data are collected, participants' perspectives are often sought. Furthermore, as knowledge is tentative, hypotheses are not proved but simply not rejected (Creswell, 2009). Post-positivists believe that nature can never be fully understood. There is a single reality, but we may not be able to understand fully what it is or how to get it because

of hidden variables and a lack of absolutes in nature (Lincoln, Lynham, & Guba, 2011).

The current study was undertaken under the post-positivist approach which engaged survey research and quantitative method of statistical analysis. Post-positivism has the elements of being reductionist, logical, empirical, cause-and-effect oriented, and deterministic based on a priori theories. According to Creswell (2013), post-positivism assumes that we can only approximate nature. The research and statistics it produces, provide a way to make a decision using incomplete data. Validity of research comes from peers (research community) not from the subjects being studied (Lincoln et al., 2011).

Post-positivism understands that though positivism cannot tell the whole truth, its insights are still useful (Serrador & Turner, 2015). Some concepts such as project management success and ethics cannot be fully quantified and only perceptions are taken.

4.2.3 Methodology

The methodology adopted in this study was that of survey design where a sample of participants from the construction industry were randomly selected to represent the general population. The research methods included distribution of a structured questionnaire to participants in the industry with one open-ended question to provide for explanations for some of the respondents' answers.

4.3 Research Design

The research design adopted for this study is the survey design. The survey was done in Nairobi County for building projects that were registered with the National Construction Authority (NCA) from June 2014 and later. This is because NCA started registering projects in 2014.

H1 -The hypothesis of the study was that there is a positive statistical relationship between personal ethics of project participants and project management success.

4.4 Population and sampling

The study area is Kenya specifically Nairobi County. Nairobi was chosen because according to NCA, most consultants and contractors and most percentage of construction projects are geographically located in Nairobi thus it is as nearly as representative as possible to the target population. The choice of location was more due to logistical, time and financial constraints rather than any expectation of atypical project failures and unethical practices. It was assumed that the study area exhibits characteristics that are most likely to be experienced in other parts of the country. The infrastructure sector does not form a part of this study thus only building projects have been investigated. The unit of analysis of the study was building projects, whilst the unit of observation was the project participants. The main participants questioned were the Clients or Developer, Project Manager or Lead Consultant, Architect, Quantity Surveyor, the Engineer, Contractor, Construction Manager and the Client.

4.4.1 Study Population

The accessible population was a list of all projects completed in Nairobi County between June 2014 and April 2017 or at least those that had reached practical completion by the time the researcher went to the field. This is because the study only concentrated on the construction phase of the project and per the definition of project management success, only completed projects can be used to assess the success of the project. June 2014 was chosen because that was the year the National Construction Authority (NCA) begun registering projects. It was assumed that most of these projects would be complete by the time of data collection in April 2017 and that there would still be project memory.

4.4.2 Sample Size

The sampling frame was the list of construction projects completed between June 2014 and April 2017. In Nairobi County, 397 projects had been registered by NCA as at August 2016, out of which only building projects were included in the sample which gave a total of 369 projects. Out of these 369 projects, the number was further reduced by eliminating projects undertaken Contractors who were not gazetted by NCA as at April 15, 2016 according to the Kenya Gazette Notice No. 2693. This elimination was necessary since according to NCA, any contractor who did not appear in the gazette as at that date was not considered to be legally registered. After counter-checking with the gazetted contractors, only 207 projects remained. Of these 207, the researcher was interested only in those projects that had reached at least practical completion. This was the only way to judge if the project had fulfilled its goals of time, cost and quality. Only 107 projects would have been completed by April 2017 according to the data given by NCA.

Of these 107 projects, more information was sought from NCA i.e. the contractor, consultants involved, the developer, and the start and end date. A list of completed projects was obtained from NCA. The list from NCA had proposed start and end dates and the construction period. Thus, any project that did not have this information was left out since there was no way of knowing if it was complete or not. Projects that had clearly not reached completion from the dates provided were also left out. Only projects that had a minimum of at least three consultants, that is the Architect, Quantity Surveyor and Engineer were sampled. Of the 107, only 70 projects remained.

The following formula was used to determine the sample size per (Mugenda & Mugenda, 1999):

$$n = \frac{z^2 pq}{d^2}$$

Equation 1

Where:

n = the desired sample size (if target population is greater than 10,000)

z = the standard normal deviation at the required confidence level (1.96 at 95% confidence level)

p = the proportion in the target population estimated to have characteristics being measured (0.5 if there is no estimate available of the proportion of target population assumed to have characteristics of interest).

q = 1-p

d = the level of statistical significance

Thus, the sample size was:

$$n = \frac{(1 \cdot 96)^2 (0.5)(0.5)}{(0.05)^2}$$

$$n = 384$$

Equation 2

Since the target population was less than 10,000, the required sample size would be smaller. Thus, the final sample estimate would be:

$$n_f = \frac{n}{1 + {}^{n}/_{N}}$$

Equation 3

Where:

$$n_f = the\ desired\ sample\ size (\ when\ population\ is\ less\ than\ 10{,}000)$$

n= the desired sample size (when the population is more 10,000)

N= the estimate of the population size

$$n_f = {}^{\frac{384}{1 + 384}}/_{70}$$

$$n_f = 59.21$$

Equation 4

Approximately 59 projects in total.

Therefore, a sample size of 59 projects was to be used. However, since the response rate for the pilot study was about 2/3 of the sample size, all the 70 projects that were obtained from the NCA list were used as the sample to increase chances of response.

4.5 Data collection

This section introduces the research instruments that were used in the study.

4.5.1 Data collection techniques

Data was collected using structured questionnaires. A questionnaire was administered to each of the project participants using research assistants. Each participant was required to answer general questions on demographics and project

statistics. The main questions on ethics required the participant to rate another person in the project based on their activities and behaviour.

A sequence was developed to ensure there was no professional bias in rating others and that the choice of who rates who as random as possible. Thus, how the participants rated each other was predetermined before the questionnaires were administered. That meant that for each project, not all Architects would rate Clients for instance or Contractors rate Quantity Surveyors. The Client/Developer (D), Lead Consultant, Architect (A), Quantity Surveyor (Q), Structural engineer (E), Contractor (C) were the respondents in each project.

Sequence for distribution of Questionnaires

Q	D	E	A	C
C	D	A	Q	E
A	D	C	E	Q
E	D	Q	C	A

Figure 4.1: Sequencing questionnaires

Figure 4.1 shows how the sequencing of questionnaires was done (horizontally) so that in every four projects, it was randomised.

4.5.2 Data collection procedures

On every project, it was hoped that a team existed comprising of the Project Manager or lead Consultant, the Architect if he was not the lead consultant, the Quantity Surveyor who handles financial issues, the Contractor and his sub-contractors and the Client or his representative. These were asked to rate one of the other team members.

4.5.3 Questionnaire design

The questionnaire had three sections. The first section dealt with demographic issues such as age, income levels and gender. There was also a question that asked which incidents the participants had encountered in the project. This was to gauge the level of unethical activities going on in projects.

The second part of the questionnaire asked respondents about the project details; the original contract sum, final contract sum, commencement date, practical completion date, actual project duration in weeks, frequency of accidents, conformance to technical specifications and defects. Respondents were also asked about their perceptions on time, cost and quality and whether they were successful or not. This was adapted from Chan and Chan (2004) on key performance indicators. The construction time and time variation were calculated from project data obtained, while the question on accidents, functionality and the team's satisfaction were perceptions. Two constructs were used to measure quality; degree of conformance to technical specifications and condition of the building with respect to defects at the time of handover.

The third part of the questionnaire was about personal virtue manifested as character traits and behaviour. The unit of analysis was projects while the unit of observation was individual participants in that project.

4.5.4 Item generation and response to pilot study

The questionnaire was designed by borrowing from different fields: Business Ethics, Leadership Studies and Psychology. In these three fields, measurement instruments in ethics have been developed and tested under different circumstances. Specific mention here is the Virtue Ethics Scale (VECS) developed for business managers as amplified in Murphy (1999), Shanahan and Hyman (2003), Chun (2005), Libby and Thorne (2007) and Racelis (2013). This study borrowed heavily from these studies particularly the character traits highlighted. Leadership studies were also of help in

developing some questions since most construction professionals are leaders in their own capacities even before they come together to do a project. Of note is the "Perceived Leadership Integrity Scale" (PLIS) developed by Craig and Gustafon (1998). This work was adopted in developing some of the questions as the authors argue that integrity plays an important role in the success of leaders.

Drawing on the four virtues of prudence, justice, fortitude and temperance, an initial thirty-four (34) items were generated to get perceptions on participants' personal virtues. To avoid social desirability responding that comes with self-rated reports, each project participant was asked to rate another (pre-determined) participant in the project. Consistent with a forced choice of rating, the study adopted a six-point Likert scale response format to avoid a "middle" response which might be used by the respondents who avoid taking a stand on sensitive issues. This scaling has been successfully adopted by Craig and Gustafson (1998).

Additionally, items measuring generalised global perception of virtue traits in a project participant needed for success in construction were also included, in the expectation that perceptions of discrete unethical or ethical behaviours would be consistent with the global perception e.g. transparency, truthfulness, fair competition, diligence, honesty, fairness, mindfulness etc. Respondents responded to questions asking them what virtues they thought were important for a construction participant to have to achieve success in a project.

To measure project management success, questions were developed project details such as contract sum, extension period, final account sum, etc. As only one figure is expected per project, the figure indicated by the quantity surveyor was the one taken since they are the custodians of the project contract details. In the case where the quantity surveyor was not accessible, the figure by the architect, or the contractor was taken. It was noted that most developers were not keen on the figures of the project. These figures helped in the calculation of the variations for time and cost while quality was measured by three perception questions on accidents, conformity

to technical specifications and defects at the time of handover. The measure was taken to be the average mean of all the figures.

Respondents were asked to assess which non-technical factors were most important in achieving project management success. This was to rate the importance of ethics in all these factors on a Likert scale of 1 (not important at all) to 7 (extremely important). The following virtues were included in the questionnaire: moderation, loyalty, trustworthiness, fairness, integrity, dependability, respect, courage, sincerity, responsibility, tolerance, and sobriety. This was important in order to see if this corresponded to the responses on the constructs of the four cardinal virtues.

The developed questionnaire was then subjected to a pilot study to test its suitability. From the pilot study, some loopholes in the questionnaire were observed. For instance, it was noted in the pilot results in the self-rating question that most responses showed the respondents in a positive light even though their peers thought otherwise hence there was need to develop questions to judge socially desirable responding and the question where the respondent rated themselves eliminated. It was also noted that respondents' perception on how successful the project was should be asked even though the success of the project was being measured objectively. Consequently, additional questions were developed to compliment the main instrument and seal any loopholes that may have been discovered from the pilot study. These additional questions were developed to supplement the original set of questions. Therefore, a question was developed to assess the respondents' impression management; these are questions meant to assess the respondents' tendency to present themselves in favourable light as follows:

- To counter socially desirable responding, a question was developed to measure the tendency to give self-reports that are honest but positively biased.
- A question was developed to rate a peer but in a dubious fashion. This question addressed the main question on virtues, but the questions were framed in a negative manner concerning behaviour. Craig and Gustafon

(1998) argue that most leadership scales tend to give the leader in a positive light and hence they developed a dubious scale which shows the negative tendencies of the leader. Kaiser and Hogan (2010) argue that competency ratings of observed integrity behaviours are not a good way to evaluate the integrity of managers and that the dubious reputation method was a better way to predict low integrity managers. Only a few items (9) of the PLIS thought to be relevant to the construction setting were used in this study. This therefore would be the main question rating personal ethics.

The initial 34 items were subsequently re-evaluated after the pilot study and the initial pool reduced by those items that respondents found difficult to rate. For instance, where they were asked to rate whether another participant pays taxes, or observes laws and regulations etc. Most respondents left these blank. These items were removed and replaced with other items that measured the same virtue. For instance, paying tax, engaging in fair competition, doing community service are items under the virtue of Justice, thus they were replaced with items as proposed by Riggio, Zhu and Reina (2010). Six items under the virtue of justice were added; giving credit to others, respect for others, respects rights and integrity of others etc. A final list of 33 items was compiled to measure the virtue of participants.

4.6 Variables in the study

Personal ethics being the independent variable was operationalised into constructs (personal virtue and behaviour) that respondents were asked to rate on a Likert scale. These constructs were categorised into the four cardinal virtues of prudence, justice, fortitude and temperance and manifestations of unethical behaviour (deceitfulness, blame shifting, lying, vindictiveness, fraudulence, immorality, using others as scapegoats, hogging, and catalyst). Personal ethics is therefore a compounded variable of these four cardinal virtues and of behaviour. Personal virtue is constructed positively and tries to identify participants who have particular virtues and so measures personal ethics in a positive light. Behaviour has been constructed in a negative dubious fashion but summarises the virtues in the negative since studies

have shown that such sensitive questions as ethics elicit more honest answers from respondents when asked in the negative (Kaiser & Hogan, 2010). Personal virtue measures ratings on observed behaviour of project participants while dubious ratings ask the participants to estimate the likelihood that their colleagues will engage in unethical behaviour. The behavioural scale reflects both character (e.g. is vindictive) and bad conduct (e.g. fuels conflicts). It thus focuses on the low end of the ethics/integrity continuum.

Project management success, the dependent variable, was also compounded in terms of time, cost and quality and has been operationalised into various constructs. Respondents were asked to rate the projects they were involved in in terms of the operationalised variables. A criterion of success was established from literature. Since all projects are likely to be affected by technical factors, they were be omitted from the criteria.

4.6.1 The dependent variable

Project management success (Y) was the dependent variable in the study and was measured using three construct variables of cost, time and quality. In the questionnaire, questions were asked about the contract period and extension of time. Cost was measured using the contract sum and the percentage increase in cost if any. The percentage variation in cost and time was then measured and various projects' performance ranked based on time and cost.

$$Actual\ construction\ cost = Original\ contract\ sum \pm variations$$

$$Cost\ variance = \frac{Actual\ construction\ cost}{Original\ contract\ sum} \times 100\%$$

Equation 5

Time was taken to be the variation in construction period and was calculated as follows:

$$Actual\ construction\ time = Practical\ completion\ date - Project\ commencement\ date$$

$$Time\ variance = \frac{Actual\ construction\ time}{Original\ contract\ period} \times 100\%$$

Equation 6

The two variables were then categorized as follows:

0-20% represented as 1, indicated that the project was very successful,

21-40% represented as 2 indicated that the project was somewhat successful,

41-60% represented as 3 indicated that the project was somewhat unsuccessful,

61-80% represented as 4 indicated that the project was unsuccessful

81% - 100% represented as 5 indicated that the project was very unsuccessful.

Quality was indicated by two variables the first being the satisfaction levels on the degree of conformance of the project to all technical specifications where it was measured on a five-point Likert scale with 1 representing total satisfaction and 5 representing total dissatisfaction. The second one was the condition of the building with respect to defects at the time of handover/completion. This was measured on a five-point Likert scale with 1 representing defect free and 5 representing totally defective. The scores for the two variables were then added together and an average was obtained. The average was taken to indicate success with the lowest score i.e. 1 being very good quality and the highest, 5, being very poor quality. These scales are reversed to match the scale in time and cost.

Project management success (Y) was taken to be an average score of the three success indicators; cost, time and quality per project then summated for the 59 projects. The overall dependent variable Y is a compounded measure of time, cost and quality as follows:

$$Yi = (Y1, i + Y2, i + Y3, i) \div 3$$

Equation 7

Where, i = 1, 2, . . .59,

Y_i denotes project performance for project i,

$Y_{1,\,i}$ denotes Time variation score for project i,

$Y_{2,\,i}$ denotes Cost variation score for project i while

$Y_{3,\,i}$ denotes Quality score for project i.

To get the mean of the project performance, an average value was obtained for all the 59

projects. Project management success (Y) was then taken to be an average score of the three success indicators; cost, time and quality. Mathematically, this can be expressed as follows:

$$\bar{Y} = \frac{\sum_{i=1}^{59} Yi}{n}$$

Equation 8

Where:

$\bar{\boldsymbol{Y}}$ denotes the mean value of project performance,

$\boldsymbol{Y_i}$ represents project performance for a project i and

$\boldsymbol{n}$ denotes the sample size (59 projects).

4.6.2 The independent variable

Personal Ethics was the independent variable (X) and was measured in terms of observed behaviour and personal virtues. Variables to be considered in the study were justice, fortitude, prudence and temperance. They were further divided into respective constructs. The average mean score of these was then calculated per respondent per project and the overall mean compiled to get the personal ethics of project participants.

Since studies on leadership (Craig & Gustafson, 1998; Kaiser & Hogan, 2010) have shown that ratings on competency are always favourable and rarely identify managers who may lack integrity, the Dubious Reputation Approach was used to measure personal behaviour. This method asks the observer to estimate the likelihood that the person they're rating is likely to engage in unethical behaviour. It is referred to as the dubious reputation approach because it focuses on evaluations of the dark side of personalities. Thus, respondents were asked whether the same person they had rated on virtue would; use underhanded means to get a job, do special favours to get a job, tell a lie, allow someone else to be blamed for their mistake, is vindictive, would falsify records to gain advantage, lacks high morals, fuels conflicts and would take credit for others' jobs. This is the measure that was taken to indicate behaviour and a more accurate depiction of personal ethics.

Variables in the questionnaire that were not analysed

The questionnaire (see appendix 1) has more questions than were used for analysis of data. Some of these questions were added after the pilot study but were not used in the analysis because they were either insignificant or were not reliable. The question of ethical sensitivity for instance was included to judge the ethical sensitivity of the respondents but the reliability analysis showed that they were not consistent and since they did not affect the main variables, were dropped from the analysis. The question on self-rating was also omitted from analysis since the main aim of its inclusion was to show the respondents that there was not bias in asking the questions.

And besides, initial analysis results showed that they were very similar to the question on rating others.

4.7 Data Analysis

Data collected from completed questions were coded and analysed using IBM SPSS statistics version 21. Descriptive statistics and frequencies were used to describe the variables analysed. These included measures of central tendency, measures of dispersion and the shapes of the distributions of the main variables described which help to detect departure from normality for each variable. Factor analysis was used to group the indicators for personal virtues of project participants using principal component analysis. Pearson's correlation analysis was used to test the significance, direction and strength of the linear relationship between the dependent and the independent variables.

Simple regression analysis was used in this study to establish a predictive model between personal ethics of project participants and project management success. Simple regression was preferred since it was the most suitable form of analysis for the hypothesis. Multiple regressions would not do since it has multiple predictors and would have been relevant if each of the virtues were to be studied individually. Multiple variable analysis models' data on the other hand, are often derived from longitudinal studies with one dependent variable measured at different time events, so it would be equally inappropriate. Logistic regression is used where a dependent variable can have only two possibilities, either 0 or 1. Simple regression therefore best suited this study and the nature of the data collected.

4.7.1 Validity and Reliability

Both internal and external validity were considered. Validity is the degree to which a measure accurately represents what it is supposed to (Hair, Black, Babin, & Anderson, 2010). External validity is the extent to which the research results can be inferred to the world at large, while internal validity is the extent to which the

research instrument is free from errors. External validity was increased through selection of the initial measurement instruments based on a review of theoretical and empirical literature so that the variables were those that have been established through research. A very clear criterion was also carried out on instrumentation so that this research can be replicated anywhere else. A pilot study was carried out to test the instrument and refined it before it was administered generally. Internal validity was achieved by randomising the responses required from the participants and from the projects themselves. Internal validity was also achieved by asking questions about the same issues in different ways. Content validity was achieved by measuring the constructs both objectively and using perceptions.

Reliability is the degree to which the observed variable measures the "true" value and is "error free", thus it is the opposite of measurement error (Hair et al., 2010). If multiple measurements are taken, reliable measures should be consistent in their values. Cronbach's Alpha was used to test reliability of the constructs. The generally agreed upon lower limit for Cronbach's alpha is 0.70 (Hair et al., 2010). The results indicate that all the constructs were reliable.

Table 4.1: Reliability results for constructs

Factors	Reliability Cronbach's Alpha	Comments
SDR and IM	0.786	Accepted
Personal virtue of others	0.916	Accepted
Essential character traits	0.788	Accepted
Personal virtue (self)	0.910	Accepted
Behaviour of rated person	0.912	Accepted

Source: Author, 2019

4.8 Ethical considerations

Attempt was made to be as statistically accurate in interpretation of reality as possible. Effect on others was not taken into consideration because this research was driven to gain understanding not influence populations.

Stringent ethical considerations were followed in designing this study. First, permission was sought from the National Commission for Science, Technology and Innovation (NACOSTI) for a clearance permit to conduct the study and the researcher obtained a copy of the proposal for the study after clearance by the Postgraduate School Committee. Second, a letter seeking consent was attached to every questionnaire informing the participants that their participation was voluntary, and they did not have to participate if they did not wish. No identifying information was sought from the participants and they were assured of privacy. They were also informed that the study was intended for research purposes only.

4.9 Field constraints

The major challenge was to get a list of all the projects and the teams. At the time of the study there was no data of all projects either ongoing or completed in Kenya. Therefore, to come up with the list used, involved visiting several offices to collect the data then compiling it into a workable list. The nature of the study elicited hostility from some participants as they were suspicious as to why that information was sought. Some participants became suspicious the minute they saw the word ethics and asked if the researcher or the assistants were private investigators. However, after calmly explaining the purpose of the study and assuring them that the information sought was for purposes of research only, most participants were willing to participate. Getting all the participants in a project to participate proved to be a big challenge.

It was necessary to train the research assistants to understand the project with the same mind that the researcher did, including going through all the questions in a mock interview to make sure that they understood the meaning of the different terms and questions. This took quite a bit of time. Collection of the data from the field itself required a personal touch from the research assistants to get the questionnaires filled and returned. This was a challenge for some assistants and in some cases the researcher had to intervene.

4.10 Conclusion

In conclusion, the methods used in this study for the data collection and analysis were the most suitable to address the research question and objectives. The next chapter presents the data collected and their analysis.

CHAPTER FIVE

DATA ANALYSIS, RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents the analysis and discussion of the data that was collected to determine the relationship between project management success and personal ethics of project participants. It also has descriptions of the respondents, descriptive statistics of the main variables, correlation analysis between the dependent and independent variables and the regression analysis.

5.2 Response rate and Background Information

The data was collected using structured questionnaires. The sections below describe the collected data in detail. A total of 70 projects was targeted with 5 participants each. Out of these, 11 projects were dead ends, that is, there was no lead whatsoever and the contacts provided did not go through. This left a total of 59 projects. Table 5.1shows the response obtained from the 59 projects.

Table 5.1: Response rate

No of participants per project	No of projects	Total No of participants
5	20	100
4	22	88
3	8	24
2	2	4
1	7	7
Total	**59**	**223**

Source: Author, 2019

Out of expected 295 responses, a total of 223 questionnaires were collected, that is, a response rate of approximately 76%, which is quite good. This was mainly due to the administration of the questionnaires by research assistants that ensured the high response rate. Even though in seven of the projects only one respondent was found, these questionnaires were still used in the analysis since ultimately, the researcher wanted to calculate the overall project management success and the compounded personal ethics of all the participants. In addition, it is a small percentage compared to the overall.

5.2.1 General Description of the Respondents

This section entails description of the data that was collected. The respondents included participants in construction projects. They were clients, project managers, architects, quantity surveyors, contractors, and engineers. 93% of all respondents were male which is typical of this industry. Only about 7% were female. The aim of the study was not to find relations in the sample characteristics thus, no analysis beyond description of the respondents is done in this section. Majority (38%) of the respondents were in the age bracket of 25-34 years followed by 35-44 (32%). 68% of the respondents had a bachelor's degree. The income distribution shows that majority (62%) of people in the industry earn a monthly gross income of over Kshs. 90,000 (USD 900). This is considered above the average wage earner and thus construction participants can hardly be considered to be low income wage earners. Table 5.2 gives a summary of the general description of the respondents in terms of their gender, age groups, education level and monthly income.

Table 5.2: Respondents' characteristics

Gender	Frequency	Percent
Male	207	93.24
Female	15	6.76
Total	**222**	**100.0**
Age group		
18-24	5	2.3
25-34	85	38.3
35-44	73	32.9
45-54	42	18.9
55-64	15	6.8
65 or older	2	0.9
Total	**222**	**100.0**
Education Level		
Below diploma	6	2.7
Higher National Diploma	3	1.4
Bachelor's degree	149	67.7
Master's degree	32	14.5
Doctorate degree	1	0.5
Total	**220**	**100.0**
Gross Monthly Income (Kshs)		
Under 30000	4	1.8
30000-39999	5	2.3
40000-49999	11	5.0
50000-59999	20	9.1
60000-69999	12	5.5
70000-79999	16	7.3
80000-89999	16	7.3
0ver 90000	136	61.8
Total	**220**	**100.0**

Source: Author, 2019

Table 5.3 shows frequencies of three demographic characteristics namely; role played by the respondent in the project, experience in years and the type of organization the respondents worked in. 28% of the respondents were quantity surveyors with a paltry 1.3 % being project managers. This could be because the profession is not yet well developed in Kenya. The projects registered with the

National Construction Authority (NCA) were mostly private. 37% of the respondents had 6-10 years' experience and 26.5% had 1-5 years' experience.

Table 5.3: Demographic characteristics of respondents

		Frequency	Percent
Role in the project	Project manager	3	1.3
	Architect	39	17.5
	Quantity Surveyor	55	24.7
	Engineer	44	19.7
	Contractor	47	21.1
	Client/Developer	35	15.7
	Total	**223**	**100.0**
Experience in years	1-5	58	26.5
	6-10	81	37.0
	11-15	42	19.2
	16-20	13	5.9
	over 20	25	11.4
	Total	**219**	**100.0**
Type of organisation	Private consulting firm	128	58.2
	Contracting firm	56	25.5
	Public institution	3	1.4
	Private Institution	17	7.7
	Corporation	6	2.7
	Other	1	0.5
	Business	6	2.7
	Real Estate	2	0.9
	Church	1	0.5
	Total	**220**	**100.0**

Source: Author, 2019

5.3 Qualitative Analysis

The following section highlights the qualitative analysis of the data that was collected from the respondents about their perceptions on project performance and personal ethics. These matters included unethical incidents encountered in projects,

satisfaction of participants with the project performance and their reasons for their satisfaction.

5.3.1 Unethical incidents encountered in projects

Table 5.4 shows the most common incidents encountered in the projects. Delays in decision making (58.7%) was the most common incident, while theft of materials (54.7), poor workmanship (34.1%), negligence of duty (32.7%) and poor-quality materials (30%) followed respectively. Delays in decision making were prevalent especially with clients and architects. This finding is in line with the findings of Mukumbwa and Muya (2013) that the most common unethical practices during project execution were delays in decision making, collusion between contractors and client representatives, and certification of poor-quality works. These incidents were also identified by Vee and Skitmore (2003), Abdul-Rahman et al. (2010), and Bowen et al. (2007). Clients and architects do not realise the impact that this delay causes on the overall performance of the project. Gichure (1997) points out that indecision has its root cause in the dullness of practical intellect and that it is widely accepted that this phenomenon is widely found amongst people who indulge in repeated acts of intemperance.

Table 5.4: Incidents encountered in projects overall

Variable	Frequency (Yes)	Percentage
Delays in decision making	131	58.7
Theft of materials	122	54.7
Poor workmanship	75	34.1
Negligence of duty	73	32.7
Poor quality materials	67	30.0
Constant change of project specifications	66	29.6
Over pricing of items	63	28.3
Non-payment of certificates	60	26.9
Conflict of Interest	55	24.7
Bias in decision making	51	22.9
Poor quality drawings	49	22.0
Unfounded variations and claims	38	17.0
Certifying work not done	38	17.0
Collusion of contractor with consultants	32	14.3
Bribery	32	14.3
Non-payment of workers	30	13.5
Fraud	30	13.5
Failure to enforce specifications & standards	24	10.8
Concealing errors	24	10.8
Unfair wages	24	10.8
Certification of poor-quality works	20	9.0
Bid cutting	19	8.5
Collusion of contractor with client representative	18	8.1
Ambiguous variations	13	5.8
Fabrication of test results	11	4.9
Tampering with signed documents	7	3.1
Profit-sharing contractor with client	4	1.8

Source: Author, 2019

Table 5.5 shows the frequency of incidents encountered in both the successful and unsuccessful projects. In both successful and unsuccessful projects, the incidents that occurred most frequently were ***delays in decision making*** and ***theft of materials.*** Of interest is that '***poor quality materials'*** was a more common incident in successful projects than unsuccessful. Also noted was that ***bribery, fraud and unfair wages*** were encountered more frequently in successful projects than in unsuccessful ones. This suggests that project success can occur in an environment of unfair incidents that occur within the project. Consequently, bribes can be taken and unfair wages paid to bring about project success. Further research can confirm this in future.

Table 5.5: Incidents encountered in both successful and unsuccessful projects

Variable	Successful Frequency	Percentage	Unsuccessful Frequency	Percentage
Delays in decision making	91	57.6	23	65.7
Theft of materials	90	57.0	16	45.7
Poor quality materials	58	36.7	7	20.0
Poor workmanship	57	36.1	15	42.9
Negligence of duty	56	35.4	14	40.0
Over pricing of items	49	31.0	12	34.3
Constant change of project specifications	46	29.1	11	31.4
Bias in decision making	41	25.9	9	25.7
Conflict of interest	39	24.7	12	34.3
Non-payment of certificates	38	24.1	13	37.1
Poor quality drawings	37	23.4	12	34.3
Certifying work not done	31	19.6	7	20.0
Bribery	29	18.4	3	8.6
Fraud	28	17.7	2	5.7
Collusion of contractor with consultants	23	14.6	6	17.1
Unfounded variations and claims	22	13.9	7	20.0
Non-payment of workers	22	13.9	5	14.3
Unfair wages	21	13.3	2	5.7
Concealing errors	17	10.8	6	17.1
Certification of poor-quality works	16	10.1	4	11.4
Bid cutting	15	9.5	2	5.7
Failure to enforce specifications & standards	13	8.2	9	25.7
Collusion of contractor with client representative	11	7.0	4	11.4
Ambiguous variations	10	6.3	3	8.6
Fabrication of test results	8	5.1	1	2.9
Tampering with signed documents	6	3.8	1	2.9
Profit-sharing contractor with client	3	1.9	1	2.9

Source: Author, 2019

5.3.2 Overall satisfaction of participants with outcome of the project

The study sought to establish the overall satisfaction of the respondents with the project and various project participants. The aim here was to find out if despite the outcome of the project, the participants were satisfied with it. A mean of 2.08 for product satisfaction showed that most respondents were satisfied. Finding out about the satisfaction of participants was important because it has been shown by Lehtiranta, Sami Karna, and Julin (2012) that there is an interconnectedness of project success and participants' perception of each other and of the project. Correlations have been found between certain project participants' satisfaction with each other's performance and the owner's perception of project success. Table 5.6 shows the results of overall satisfaction of participants.

Table 5.6: Overall satisfaction of participants

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Product satisfaction	56	1.00	5.00	2.0804	.61407	.377
Client	56	1.00	4.75	2.3146	.90911	.826
Project team leader	56	1.00	5.00	2.1812	.69147	.478
Service of consultants	56	1.00	4.50	2.1351	.64645	.418
Service of contractor	56	1.00	5.00	2.2012	.69916	.489

Source: Author, 2019

5.3.3 Reasons for Respondents' Satisfaction

In an open-ended question the respondents were asked to state their reasons for satisfaction or dissatisfaction with the project. This would enrich the quantitative evidence by capturing the direct experiences of the participants. The responses were then analysed thematically to provide relevant information.

Table 5.7: Reasons for respondents' satisfaction

Reason for satisfaction	Frequency	Percent
Teamwork	46	35.7
Client-induced reasons	30	23.3
Consultants-based reasons	20	15.5
Contractor-caused reasons	17	13.2
Communication	8	6.2
Incomplete project	8	6.2
Total	129	100.0

Source: Author, 2019

The reasons as given by respondents were clustered into six common themes: teamwork, client-induced reasons, consultants-based reasons, contractor-caused reasons, communication and incompleteness of the project. Table 5.8 shows further subdivisions of these reasons into sub-themes. The reason for satisfaction for most participants was teamwork. It appears with the highest frequency. Most participants were satisfied with their projects where there was good teamwork amongst the members. This included good leadership, cooperation especially from the client and contractor, where there were timely decisions, no delays and minimal variations in the work. Generally, in projects where these were experienced, participants were totally satisfied with the project.

The client-induced theme comprised mostly of points of dissatisfaction. 23.3% of participants were dissatisfied with the projects for various reasons that were mostly caused by the clients. These had to do with delays in decision making, in payments and in material delivery especially where clients decided to procure the materials themselves. Participants were also dissatisfied with constant revision of the scope of the project, changes in design especially where the clients did not include the consultants, too many variations, financial constraints, and therefore, lack of

payment of certificates, and fee disputes. In a few projects, participants were happy with the timely payments by the clients and their close monitoring of the project.

The third theme was consultant-based reasons. It appears that even though consultants are useful in a project, sometimes they're the very reason why participants are dissatisfied with it. And this mostly had to do with delaying information crucial for the progress of the work. Lack of details, poor quality drawings, delays in issuing drawings or in approvals; all these and more caused dissatisfaction.

The fourth most frequent theme was that related to contractors. Their efficiency or lack thereof, lack of programs, poor quality work, delays and slow progress was cause for a lot of dissatisfaction in most projects.

Communication in general proved vital in projects. Where there was no communication, there was a lot of dissatisfaction. Communication theme mostly covered issues such as rocky relationships between client and consultants or consultant and contractor relationships. There was also the issue of delayed drawings, poor communication between the consultants and the client or amongst themselves. For projects to run smoothly, efficient communication amongst all participants is key.

Finally, in some cases, projects simply stalled due to client indecision or fee disputes or financial constraints. Projects also stalled where the contractor encountered cash flow problems due to increased scope of the project or where the consultant fee was not commensurate with the scope of the works. In some of the projects, the clients increased the scope of work without increasing the consultants' fees and this was not well taken by consultants leading them to abandon the works. This however was not very common.

In their study, Toor and Ogunlana (2009) found that most high-rated critical success factors are related to project planning and control, personnel and involvement of client. The themes above seem to corroborate their study. Doloi et al. (2012) also found that the most significant factors inducing construction delay was client's influence especially due to delay in approval process, design and scope changes and lack of organizational protocol. Anantatmula, (2010) states that clarity in communications and defining roles and responsibilities are a given for project performance and can act as an enabler or a barrier. Thus, we see that from the open-ended questions themes have arisen that are indeed important towards project performance. What is interesting for the study is that some of these reasons still find their way into unethical practices in construction, especially delays in decision making, adversarial relationships between consultants and contractors or clients and consultants, ambiguous variations just to name a few (Mukumbwa & Muya, 2013; Bowen et al., 2012; Vee & Skitmore, 2003). Important to note also, is that most of these incidents are caused by people and not due to technical reasons. It would seem, therefore, that the incidents that most affect projects whether in a positive or negative way are people-induced. Indeed, as Bowen et al. (2007) states, "People are the most valuable asset; trust and personal relationships are more important; the need for professional integrity; fairness is most important, and that business ethics flow from personal ethics into the work environment" p. 204

Table 5.8: Thematic analysis reasons for satisfaction with projects

Reason for satisfaction them	Sub-themes
Teamwork	Good leadership, cooperation between client, contractor and team; timely decisions
	Excellent service from all and good relationship in the team
	Good team work
	No delays, timely execution of works, minimal variations
	Time, cost, quality, were met
Client-induced reasons	Delays in decision making, in payment of certificates, in material delivery
	Constant revision of project scope, changes in design without inclusion of consultants
	Financial constraints
	Too many variations
	Non-payment of certificates, fee disputes especially where scope was increased
Consultants-based reasons	Close monitoring
	Timely payments
	Long procedures for acquiring information
	Delays in approvals, issuing of drawings, information
	Lack of details, poor quality drawings, crucial information
	Lack of proper leadership, non-attendance of site meetings
	Project estimates were clear

Contractor-caused reasons	Efficiency of contractor / on schedule most of the time
	Lack of a program of works
	Inexperience of contractor; more conversant with civil than building works
	Shoddy work
	Unexplained delays
	Collusion with consultants on variations
	Defective work
	Progress too slow occasioned by delayed payments
	Rocky client/consultant, consultant/contractor relationship
Communication	Good coordination between main contractor and subcontractor and main contractor and consultants
	Delayed drawings, poor communication between architect and consultant and between client and project participants
Incomplete project	Project stalled due to client indecision, fee dispute
	Project still going on after stalling due to finance constraints
	Contractor cashflow issues due to increased scope, fee not commensurate with scope

Source: Author, 2019

5.3.4 Importance of Personal Ethics to Project Success

Table 5.9 shows that the respondents felt that personal ethics of project participants was very important to the successful completion of a project. This is important because it shows the overall perception of participants on personal ethics.

Table 5.9: Importance of personal ethics to project success

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Personal ethics	56	1.00	2.40	1.6250	.32916	-.332	-.220

Source: Author, 2019

5.3.5 Ethical Sensitivity, Impression Management and Socially Desirable Responding

This statistic was to gauge whether the respondents were biased or not in their responding. To judge their ethical sensitivity, respondents were asked questions indicating the degree of ethical reservation they would have about performing certain acts. Item scores ranged from 1 to 7, with higher scores indicating higher ethical sensitivity. Respondents' mean item scores were used as indices of their dispositions to perceive ethical dimensions of behaviour.

The impression management subscale was adopted from Craig and Gustafson (1998) consisting of 20 items relevant to construction designed to assess the respondent's tendencies to deliberately present themselves in favourable light. Subjects responded to a 7-point Likert scale (1-7). Participants' mean item scores were used as their scale scores. To the extent that personal virtue and project success are socially desirable conditions, ratings of other's behaviour could be influenced by socially desirable responding. That is, respondents wishing to show themselves in a favourable light

might be reluctant to disclose that they worked with an unethical colleague or client or that the project they took part in was not a success. Thus, it was hypothesised that personal virtue would be significantly and positively correlate to impression management.

Table 5.10: Ethical Sensitivity and Impression Management of Respondents

	N	Minimum	Maximum	Mean	Std. Deviation
Ethical sensitivity	216	4.50	6.90	5.7931	.44825
Impression management	216	1.30	5.80	3.8634	.88911
Socially desirable responding	209	1.30	5.50	3.2837	.85896

Source: Author, 2019

Table 5.10 shows the respondent's ethical sensitivity and their tendency to present themselves in a favourable light. Responses were divided into two categories namely, Socially Desirable Responding (SDR) and Impression management (IM). The total score in each category was calculated and an average score was taken to represent a general response in all the projects. A mean of 5.7 in ethical sensitivity shows that the respondents were highly sensitive in judging dimensions of ethical behaviour. A low mean for impression management and SDR means that respondents generally had a favourable opinion of themselves and were thereby influenced by socially desirable responding. Ethical sensitivity demonstrated an unsatisfactory internal consistency, with Cronbach's Alpha of 0.507 while IM and SDR demonstrated a favourable internal consistency with Cronbach's Alpha of 0.786. Because of this lack of internal consistency in ethical sensitivity instrument, the results were not used further in the analysis.

5.4 Statistical Description of Project Performance and Personal Ethics

In this section, results of the data collected about the projects are presented using descriptive statistics. The dependent variable (Y) was project performance hereby referred to as Project Management success (PMS) and the independent variable (X) was Personal Ethics measured by perceptions of participants in the project regarding their colleagues' observed virtues. Personal ethics was measured using Virtue Ethics Scale and using the Dubious Reputation method on behaviour.

5.4.1 Project Performance

Project performance, also referred to as project management success was calculated using the tenets of time, cost and quality. The time and cost variations from the time of implementation of the projects to the end were calculated together with adherence to specifications which was taken to measure quality. The three were averaged for each project and project management success established as explained in section 0. The results indicated that 76.09% of the total projects were found to be successful.

Figure 5.1 shows that 76.09% of the total projects were found to be successful.

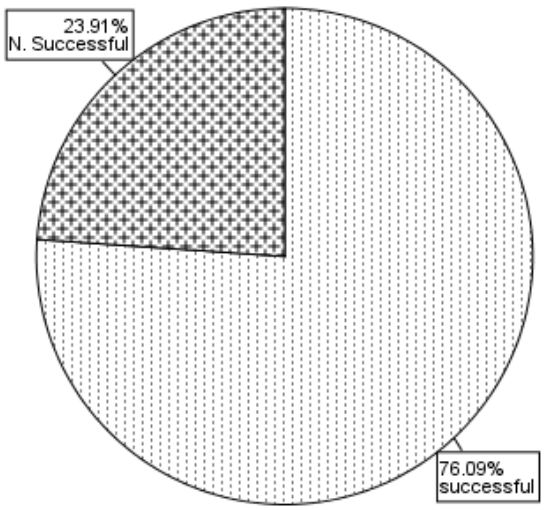


Figure 5.1: Representation of successful to unsuccessful projects

Descriptive analysis using measures of central tendency, deviations and distribution are presented below. Table 5.11 shows descriptive statistics for success indicators; Cost, Quality and Time, and Project Management Success (Y). The findings show the projects were successful on average. The projects were of good quality and the cost and time were also found to be within the range for successful projects.

Table 5.11: Descriptive statistics for Project Performance

	N	Min	Max	Mean	Std. dev	Skewness		Kurtosis	
						Statistic	S.E	Statistic	S.E
Project performance	46	1.00	3.83	1.8188	.67570	.993	.350	.415	.688
Cost	53	1	5	1.53	1.154	2.193	.327	3.593	.644
Time	49	1	5	2.33	1.463	.815	.340	-.684	.668
Quality	55	1.00	3.00	1.6909	.37873	1.081	.322	1.943	.634

Source: Author, 2019

The performance (success) of each project was determined using the Y variable (project management success). The Y variable was measured on a Likert scale of 1 (successful) to 5 (not successful) thus, projects with a mean value of 2.4 (which is half-way) and below were taken to be successful while those above that score were taken to be unsuccessful. In other words, Project Management success was the inverse of project's non-performance

Respondents were then asked to rank their perception of project success. Respondents' perceptions were that overall, the projects were very successful. However, the projects were not considered successful in terms of one of the indicators which was time meaning that the performance of the projects in terms of cost and quality was much better compared to time. Table 5.12 shows the results.

Table 5.12: Respondents perception of projects' success

	N	Min	Max	Mean	Std. Dev	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Success in time	56	1.00	5.00	2.5741	1.21062	.416	.319	-.733	.628
Success in cost	56	1.00	4.00	1.6560	.75015	1.349	.319	1.290	.628
Success in quality	56	1.00	4.00	1.2812	.48093	3.653	.319	18.142	.628
Overall performance	56	1.00	3.75	1.4030	.57872	2.304	.319	5.974	.628

Source: Author, 2019

A paired sample t-test was done to compare the actual (calculated) and perceived project management success. The results in Table 5.13 reveal that there was a significant difference between the calculated project management success and the perceived project management success. What this implies is that participants in the project tended to rate the success of the projects a bit higher than what it really was. This suggests that there could be factors other than those stated herein that participants look at to define success other than the traditional cost, time and quality. As Lehtiranta et al. (2012) concluded in their study that the interconnectedness between project success and several relationships between participants suggests that project success should be examined from a more holistic perspective than the traditional measures in terms of budget, schedule and specifications. These results also indicate that there was a significant difference between the calculated measure of quality and the perceived quality. Generally, participants thought the projects were of a much better quality than what had been measured. This could also mean that

there were other factors that participants looked at to gauge quality other than specifications although it is fair to say that quality is really hard to measure.

Table 5.13: Paired sample T-Test between Project management success and perceived success of the projects

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair1	Cost - Success in cost	.14906	1.31295	.18035	-.51095	.21284	-.826	52	.412
Pair 2	Time - Success in time	.04048	1.30855	.18694	-.41634	.33538	-.217	48	.829
Pair 3	Quality - Success in quality	.42273	.46823	.06314	.29615	.54931	6.695	54	.000
Pair 4	Project performance - Success overall	.55471	.69176	.10199	.34928	.76014	5.439	45	.000

Source: Author, 2019

5.4.2 Personal Virtue

The second objective of the research was to determine the personal ethics of construction project participants. Personal virtue was one way in which personal ethics, the independent variable was measured, the second was through behaviour which is presented in Section 5.4.4. Respondents were asked to rate one other participant in the project on various virtues based on observed character traits. This question was designed to measure overall the personal virtues exhibited by participants. The scale was consistent with a forced-choice orientation, to avoid a middle response used by respondents who avoid taking a stand on sensitive issues (Craig & Gustafon, 1998). A six-point Likert scale was used, and choices ranged from strongly disagree (1) to strongly agree (6). The questions were based on the four cardinal virtues of prudence, justice, fortitude and temperance. The scores in each category were summed together and a mean score was obtained in the four

categories to make a conclusion on the participants' virtues in the various projects. To match the Y variable, the scale was reversed so that 1 was coded to be totally virtuous while 6 represented totally vicious. Table 5.14 shows a summary of the compounded constructs into four main virtues of prudence, justice, fortitude and temperance. From the mean it shows that participants exhibited temperance more followed by prudence, fortitude and justice last even though the overall score shows that all participants were virtuous.

Table 5.14: A summary table of the Participants' Virtue

Rating others	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Prudence	56	1.40	3.20	2.1754	.34573	.553	.319	.503	.628
Justice	56	1.63	3.75	2.3866	.44329	.754	.319	.741	.628
Fortitude	55	1.61	3.91	2.3183	.39484	1.279	.322	3.695	.634
Temperance	56	1.00	3.50	2.0424	.46545	.993	.319	2.185	.628
Overall Personal Virtue	55	1.71	3.68	2.2821	.37024	1.219	.322	2.817	.634

Source: Author, 2019

The figures on Table 5.15 represent the inverse of personal virtue. That is, the less the value, the more the virtue and vice versa. Thus, we could say it is measuring the degree of lack of virtue perceived by participants in their colleagues since the higher the figure, the less the virtue. Measure is therefore the inverse of the figure.

Table 5.15: Participants' Virtue

Rating others	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Overall Personal Virtue	55	0.28	0.59	0.4562	0.06675	-0.159	.322	0.118	.634

Source: Author, 2019

Overall, the personal virtue of participants is just below the mean, thus indicating that they are virtuous.

5.4.3 Perceptions on virtues

Table 5.16 shows that all virtues were found to be important for the successful delivery of projects. The most important virtue according to the respondents was responsibility followed by integrity and trustworthiness. The virtues considered least important according to the results were moderation**,** loyalty and courage. These are minor virtues of the virtue of temperance and fortitude. Although these two scored low, all of the virtues were statistically significant.

Table 5.16: Perceptions on important virtues for successful delivery of a project

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Moderation	56	1.00	4.50	2.4253	.68346	.757	.940
Loyalty	56	1.00	4.60	2.2131	.74395	1.401	1.853
Trustworthiness	56	1.00	3.00	1.7500	.42179	.318	.598
Fairness	56	1.00	4.50	2.0295	.61232	1.557	5.024
Integrity	56	1.00	2.00	1.5417	.31202	-.367	-.822
Dependability	56	1.20	3.00	1.8077	.40215	.612	.332
Respect	56	1.00	3.00	1.8631	.46934	.587	.622
Courage	56	1.25	3.67	2.1155	.46490	.995	1.778
Sincerity	56	1.00	3.00	1.7661	.40005	.387	1.173
Responsibility	56	1.00	2.20	1.5039	.33203	.130	-.919
Tolerance	56	1.00	4.00	2.0238	.54538	.946	2.254
Sobriety	56	1.00	3.67	1.7842	.49445	1.154	3.048

Source: Author, 2019

5.4.4 Behavioural Ethics

This variable construct was designed to rate participants using behaviour and not the virtues (optimal traits) that is, the dark side of personality. It still measures personal ethics but in another way. The construct describes the behaviour of construction participants from the view point of their colleagues. As Kaiser and Hogan (2010) pp.220 stated: "*The best predictor of future behaviour is past behaviour; reputation is a summary of past behaviour and is, therefore best data source we have about future behaviour*. The construct would distinguish between ethical behaviour and virtues of participants; hence to vary it, the questions were worded negatively. This approach was used successfully by Craig & Gustafon (1998) and Kaiser & Hogan (2010) to measure integrity of leaders. Table 5.17 shows the different constructs used

to measure behaviour and their scores. A low mean indicates that the participants were highly unlikely to be engaged in those activities described therein.

Table 5.17: Participants' Behaviour

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
use underhanded means	56	1.00	3.50	1.5586	.59758	1.464	.319	2.137	.628
do special favours to get a job	56	1.00	3.50	1.7101	.57512	.965	.319	1.164	.628
tell a lie	56	1.00	4.00	1.6914	.57298	1.463	.319	3.676	.628
allow someone to be blamed	56	1.00	4.00	1.6173	.66804	1.523	.319	3.025	.628
vindictive	56	1.00	3.25	1.3946	.44446	1.640	.319	4.079	.628
falsify records	56	1.00	4.00	1.5274	.66109	1.681	.319	3.102	.628
lacks high morals	56	1.00	3.50	1.3985	.51144	1.795	.319	4.083	.628
fuels conflicts	56	1.00	2.75	1.1628	.33650	3.087	.319	11.003	.628
takes credit for others	56	1.00	3.25	1.5143	.55299	1.275	.319	1.133	.628

Source: Author, 2019

Since this was just one statistic on participants' behaviour, all the constructs were combined into one and the inverse of that is what actually measures the participants' behaviour as shown on Table 5.18. The inverse was to match the participants virtue which was measured in the positive.

Table 5.18: Participants' Behaviour-Overall

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Participants' Behaviour	56	0.3	1.0	0.7414	0.16149	-0.270	.319	-0.191	.628

Source: Author, 2019

Table 5.18 (0.74 out of a maximum of 1) shows that the participants' behavior was not dubious at all meaning that the likelihood that these participants would engage in unethical behavior was highly unlikely. This shows their behavior was commendable hence it can be implied that they are ethical. A summary of the descriptive statistics for all the variables, that is dependent and independent is shown on Table 5.19.

Table 5.19: Summary of the variables on Personal Ethics

Statistics

		Project performance	Personal Virtues	Participants' behaviour	Impression management
N	Valid	46	55	56	55
	Missing	10	1	0	1
Mean		.6184	.4562	.7414	.2861
Median		.6333	.4568	.7364	.2833
Mode		.86	.28[a]	1.00	.29
Std. Deviation		.19978	.06675	.16149	.03891
Variance		.040	.004	.026	.002
Skewness		.059	-.159	-.270	.372
Std. Error of Skewness		.350	.322	.319	.322
Kurtosis		-1.071	.118	-.191	.173
Std. Error of Kurtosis		.688	.634	.628	.634
Range		.74	.31	.70	.19
Minimum		.26	.28	.30	.20
Maximum		1.00	.59	1.00	.39

a. Multiple modes exist. The smallest value is shown

Source: Author, 2019

5.4.5 Histograms of Variables

Histograms show the distribution of the various variables which reflects the normality of the variables for inferential statistics Table 5.32 and Table 5.33 show that the variables were subjected to Shapiro Wilk's tests of normality. As the Figure 5.2, Figure 5.3 and 5.4 show, there was no violation of the normality assumption at 95% level of confidence as shown on Table 5.32.

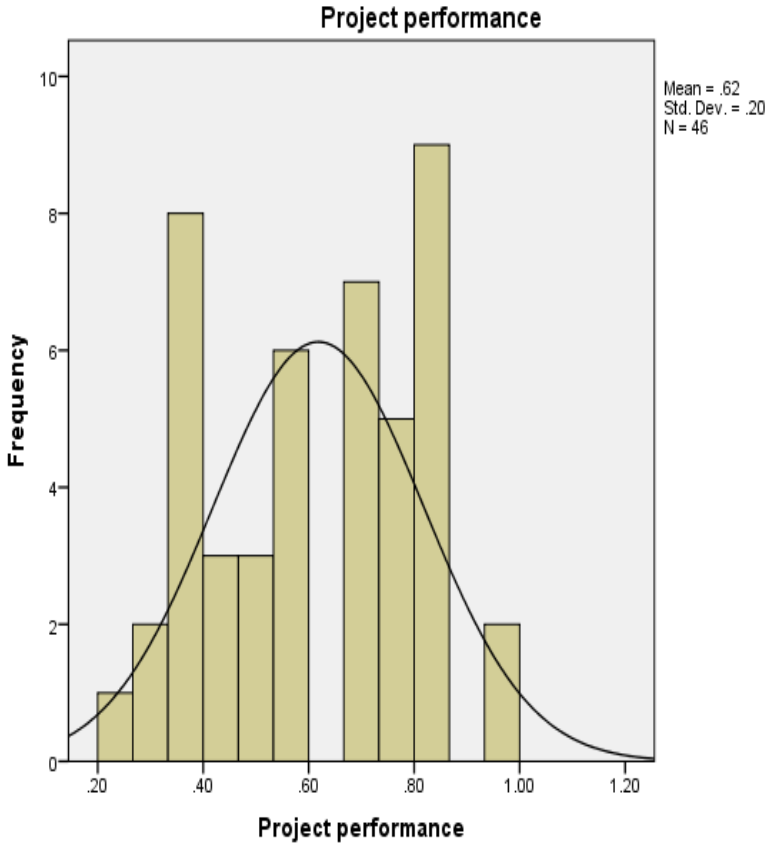


Figure 5.2: Histogram showing Project Performance

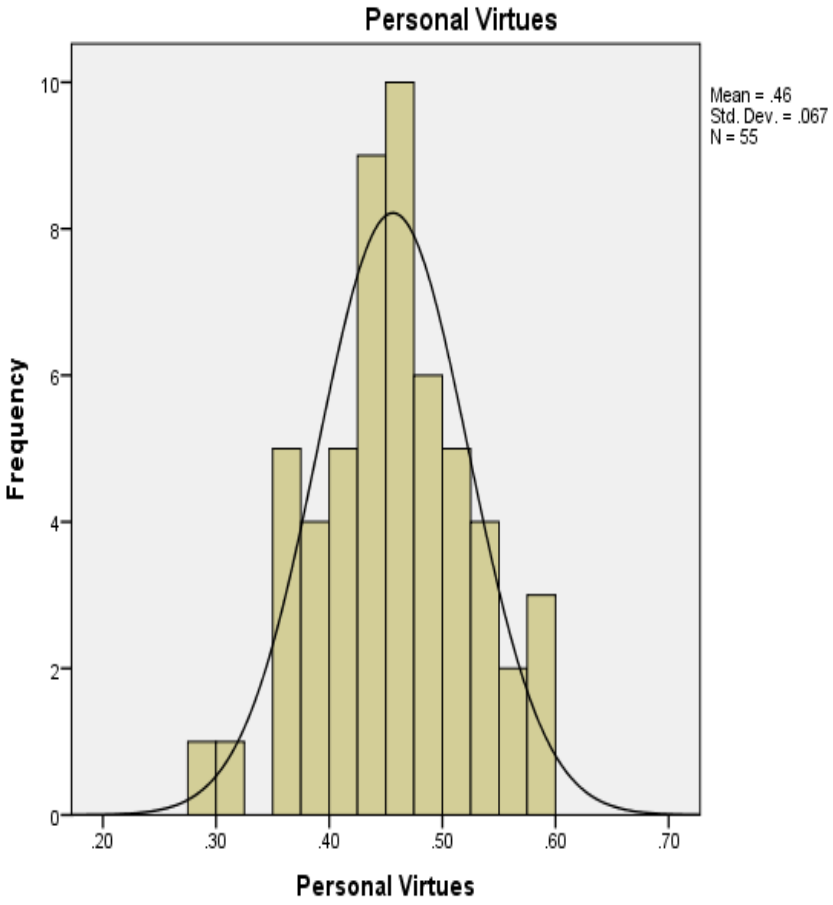


Figure 5.3: Histogram showing distribution for Personal Virtues

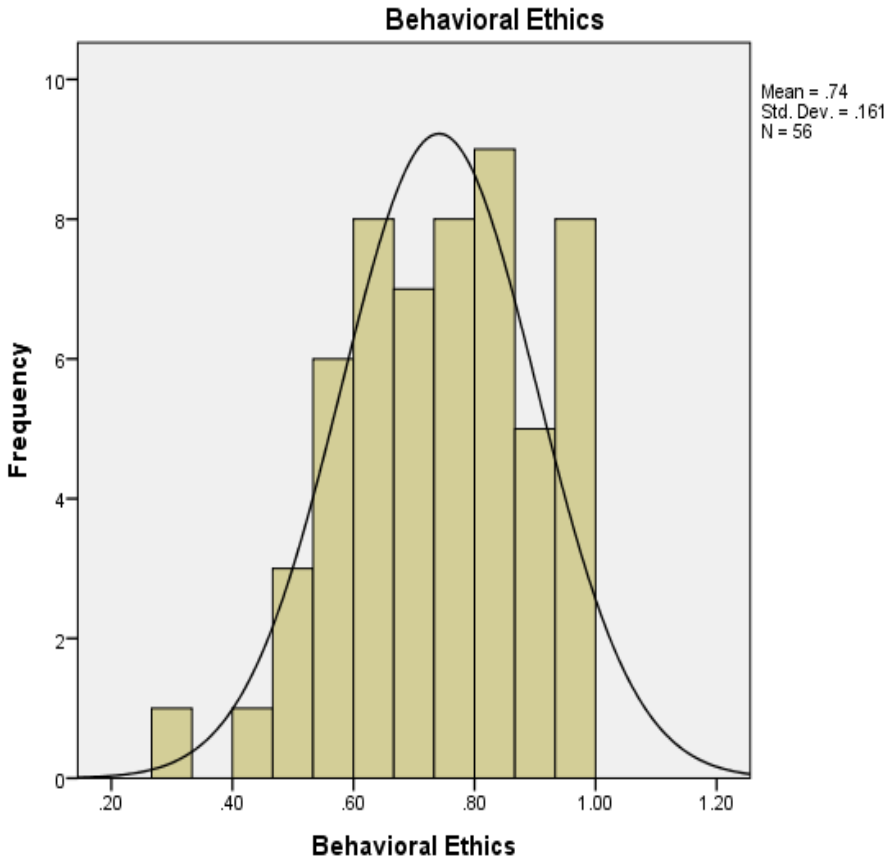


Figure 5.4: Histogram showing behaviour of participants

5.5 Relationship between Project Management Success and Personal Ethics

The third objective was to analyse the relationship between project management success and personal ethics of participants and this is presented in this section and section 5.6. Following the statistics describing the dependent variable (Project Management Success) and the independent variable (personal virtue and behavioural ethics), the next section deals with the correlations between them. Table 5.20 below shows correlation analysis between the dependent variable, project management success and the independent variables of personal virtue and behaviour. Also included is Impression Management (IM) which measures socially desirable responding. There was a significant relationship between project performance and

behaviour of participants and none between performance and personal virtues or impression management.

Table 5.20: Correlations between the variables

		Correlations			
		Project performance	Personal Virtues	Behavioural Ethics	Impression management
Project Performance	Pearson Correlation	1	.077	.369*	.101
	Sig. (2-tailed)		.613	.012	.504
	N	46	46	46	46
Personal Virtues	Pearson Correlation	.077	1	.382**	-.003
	Sig. (2-tailed)	.613		.004	.984
	N	46	55	55	55
Behaviour of Participants	Pearson Correlation	.369*	.382**	1	-.025
	Sig. (2-tailed)	.012	.004		.854
	N	46	55	56	55
Impression Management	Pearson Correlation	.101	-.003	-.025	1
	Sig. (2-tailed)	.504	.984	.854	
	N	46	55	55	55

Source: Author, 2019

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

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

Note: ***Only participants' behaviour is significant at 5% significance level since its p-value of 0.012, is less than 0.05.***

5.5.1 Correlation between PM Success and Impression Management

Since project performance measures the success of the project while IM queries the respondent's behaviour, it was expected that there should be no correlation between the two nor with personal virtue since it measures the respondents' rating of each

other's virtues and behaviour. Indeed, there was no correlation whatsoever between the variables, evidence of discriminant validity.

5.5.2 Pearson correlation coefficient of Project Management Success (Y) and Personal Virtue

The relationship between the dependent variable, Project Management Success (what is being referred to as project performance) and the independent variable is considered here. There was no statistically significant linear relationship between PM Success and personal virtues of participants. Detailed discussion of why this is so is elaborated in the discussion of results in section 5.7. The Table 5.21 shows a summary of the results of correlation analysis between the independent and dependent variables.

Table 5.21: Summary Correlation Analysis

	Project Performance	Personal Virtues	Behavioural Ethics	Impression Management
Project Performance	1	.077	.369*	.101
Personal Virtues		1	.382*	-.003
Participants' behaviour			1	-.025
Impression Management				1

Notes: * $p < 0.05$ (significant at 5% significance level)
Source: Author, 2019

5.5.3 Participants' Behaviour

As has been shown in section 5.5 this variable measures the expectation that participants would behave unethically. The results in Table 5.21 indicate that there is a correlation between project management success and the behaviour of participants. This dubious reputation is thus a better way of measuring the integrity of participants than using the Virtue Ethics Scale.

5.5.4 T-test to compare mean difference between personal virtue and behaviour

A sample t-test was carried out to show whether there was a significant difference in the way respondents answered the question on personal virtues and the one on behaviour. The null hypothesis stated that there is no significant difference between the mean value in the questions. The *p*-value was found to be $p<0.001$, therefore, the null hypothesis at 5% level of significance was rejected. In conclusion, it can be said that there was a significant difference in how the two questions were answered even though the two questions were about the same rated person.

Table 5.22: Difference between personal virtue and behaviour of participants

	Paired Differences					t	df	Sig. (2-tailed)
	mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Personal Virtue – Behaviour	.773	.423	.057	.658	.887	13.56	54	.000

Source, Author, 2019

5.6 Regression of Project Management Success and Personal Ethics

This section presents the regression analysis for the independent variables on project management success. The scatter diagrams show the kind of relationship the two variables have with the dependent variables followed by linear and multiple regression analysis.

5.6.1 Scatter Diagrams for the Independent Variables

The Figure 5.9 shows the scatter diagram of project performance and personal virtues. As can be seen, there appears to be no visible relationship at all between the two variables, supporting the correlation analysis of no significance.

shows some relationship between the two variables of project performance and participants' behaviour (what is here referred to as behavioural ethics) and it is a linear relationship. The two variables are now regressed against the independent variable to find out which is the best predictor.

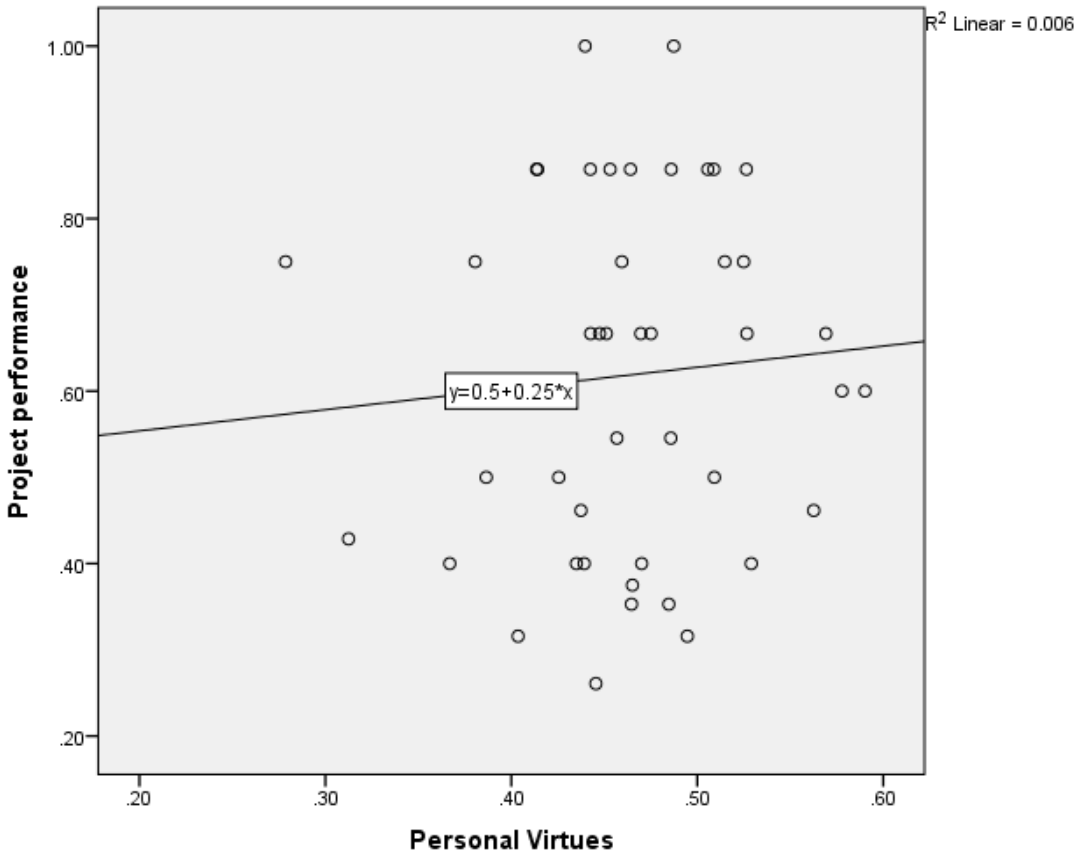


Figure 5.5: Scatter plot of Project Performance and Personal Virtues

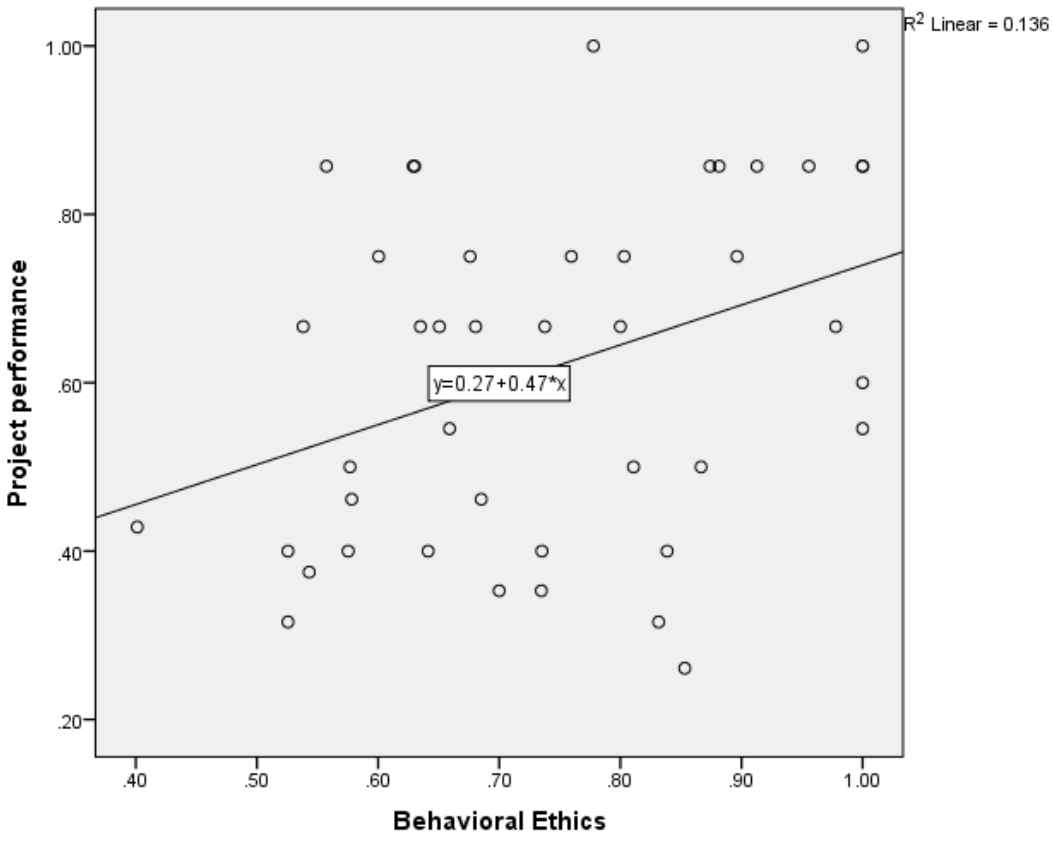


Figure 5.6: Scatter plot of Project Performance and Participants' Behaviour

5.6.2 Personal Virtue

A simple linear regression was conducted with PM Success (project performance) as the dependent variable and personal virtue as the independent variable to find out which of them is a best predictor of project performance. The findings showed that the model was not good in predicting project performance, F=0.260; p=0.613. Personal virtue was not a statistically significant predictor of project performance, p=0.613. It was also found to explain only 0.6 % of the variation in project performance, R^2=0.006.

Table 5.23: Regression model summary for Personal Virtue and PM Success

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077[a]	.006	-.017	.20145

Source: Author, 2019

a. Predictors: (Constant), Personal Virtues

Table 5.24: ANOVA for Personal Virtues

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.011	1	.011	.260	.613[b]
	Residual	1.786	44	.041		
	Total	1.796	45			

Source: Author, 2019

a. Dependent Variable: Project performance

b. Predictors: (Constant), Personal Virtues

Table 5.25: Coefficients of regression for Personal Virtue

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.505	.225		2.243	.030
	Personal Virtues	.246	.482	.077[a]	.510	.613

Source: Author, 2019

a. Dependent Variable: Project performance

The model is as follows:

$$y = 0.505 + 0.246x$$

Where Y = project management success

X = Personal virtue

5.6.3 Participants' Behaviour

A simple linear regression was conducted with project performance as the dependent variable and participants' behaviour as the independent variable. The findings reveal that the model was a good predictor of project performance. Overall participants' behaviour was found to be significant at 5% significance level. The model explained 13.6% of the variation in project performance.

Table 5.26: Regression model summary for Participants' Behaviour

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.369[a]	.136	.116	.18782

Source: Author, 2019

a. Predictors: (Constant), Participants' behaviour

Table 5.27: ANOVA table for Behaviour

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.244	1	.244	6.915	.012[b]
	Residual	1.552	44	.035		
	Total	1.796	45			

Source: Author, 2019

a. Dependent Variable: Project performance
b. Predictors: (Constant), Participants' behaviour

Table 5.28: Regression coefficients for Participants' Behaviour

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.266	.137		1.942	.059
	Participants' behaviour	.474	.180	.369	2.630	.012

Source: Author, 2019

a. Dependent Variable: Project performance

The model was as follows:

$$\boldsymbol{y = 0.266 + 0.474x}$$

Where Y = project management success

X = participants' behaviour

A multiple linear backward regression was conducted to establish which was the best predictor model as shown on Table 5.29.

Table 5.29: Multiple linear regression model summary table

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.374[a]	.140	.100	.18955
2	.369[b]	.136	.116	.18782

Source: Author, 2019

a. Predictors: (Constant), Participants' behaviour, Personal Virtues

b. Predictors: (Constant), Participants' Behaviour

Table 5.30: ANOVA table for Multiple Linear Regression

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.251	2	.126	3.494	.039[b]
	Residual	1.545	43	.036		
	Total	1.796	45			
2	Regression	.244	1	.244	6.915	.012[c]
	Residual	1.552	44	.035		
	Total	1.796	45			

Source: Author, 2019

a. Dependent Variable: Project performance

b. Predictors: (Constant), Participants' Behaviour, Personal Virtues

c. Predictors: (Constant), Participants' Behaviour

Table 5.31: Coefficients for Multiple Regression Model

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.343	.221		1.553	.128
	Personal Virtues	-.218	.488	-.068	-.447	.657
	Participants' behaviour	.506	.196	.394	2.588	.013
2	(Constant)	.266	.137		1.942	.059
	Participants' behaviour	.474	.180	.369	2.630	.012

Source: Author, 2019

a. Dependent Variable: Project performance

From Table 5.29 to 5.31, the results indicate that the best predictor model is participants' behavioural as opposed to personal virtue. These results from the backward regression analysis are not surprising, in a study to assess integrity of managers, Kaiser and Hogan (2010) found that results in integrity competency measures (that is, those that are worded positively) always tend to be positive and rarely identify managers who may lack integrity. Thus, competency ratings are unlikely to identify managers with integrity issues. This is true of personal virtue measures too. It can be seen from the results that respondents will mostly respond positively to such questions. However, in the dubious reputation approach (participants' behaviour) where the ratings do not rely on observed virtues but tends to rely on the dark side of participants, there was found to be a positive correlation with project management success.

The implication of the regression analysis is that in order to measure personal ethics and how it relates to project management success, it is better to use the dubious reputation method than the virtue scale method. It also means that personal ethics does have a role in project management success, but it has to be measured it in a particular way.

5.6.4 Evaluating for the assumptions of Regression Analysis

This section examines individual variables for meeting the assumptions required for regression analysis. The assumptions examined are normality, homoscedasticity (homogeneity of variance) and independence of the residuals (multicollinearity).

5.6.4.1 Normality Test for Residuals

The most fundamental assumption in univariate and therefore multivariate analysis is normality, referring to the shape of the distribution for an individual metric variable and its correspondence to the normal distribution, the benchmark for statistical methods (Hair, Black, Babin, & Anderson, 2010). Linear regression analysis assumes that the residuals should be normally distributed. Normal Q-Q plot was used to test

for the normality of the residuals. If all the values tend to lie on the straight line cutting across the diagonal, then the variable is said to assume normality. Normality of the residuals was analysed using Kolmogorov-Smirnov test and Shapiro-Wilk test as well as a normal Q-Q plot. The results are presented on the Table 5.32 and Figure 5.7.

Table 5.32: Normality test of Residuals

Tests of Normality

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.091	46	.200*	.981	46	.631

Source: Author, 2019

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

From the Table 5.32, all the p-values for Shapiro Wilk and Kolmogorov Smirnov were greater than 0.05 (0.631 and 0.200 respectively). This shows that the residuals were normally distributed hence normality assumption of the residuals was not violated.

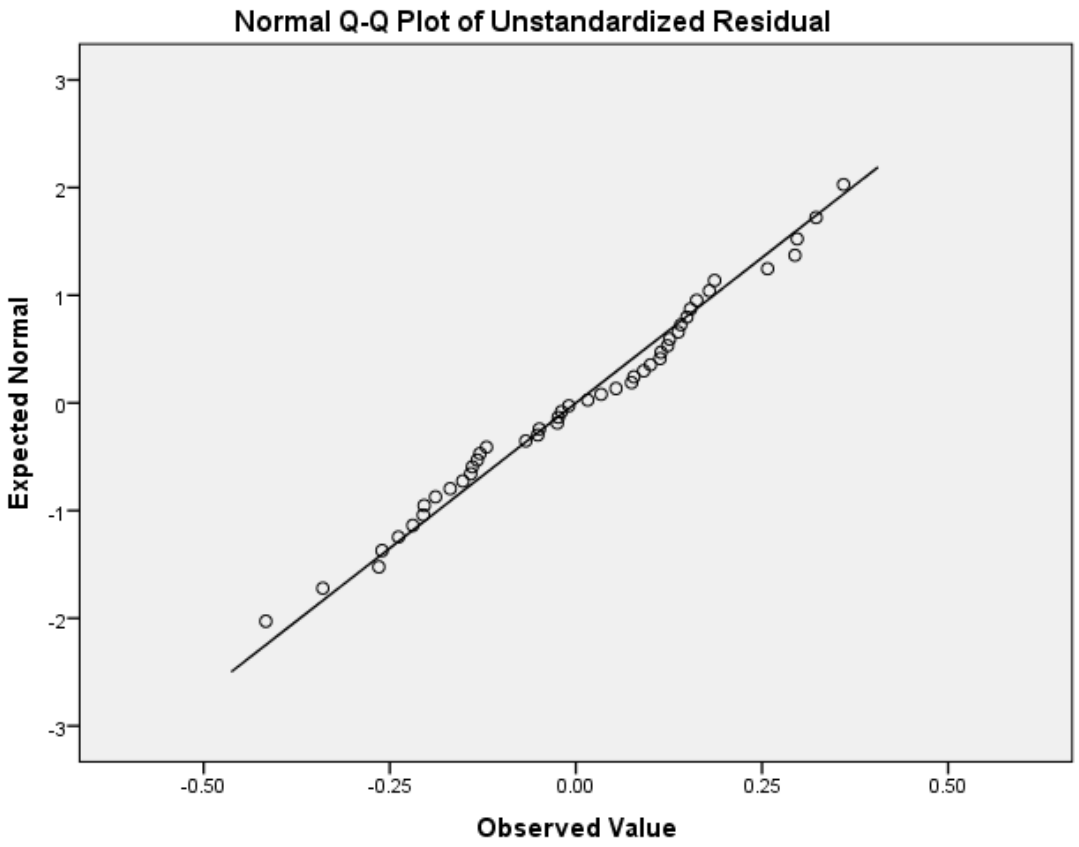


Figure 5.7: Normal Q-Q plot

The results in the Normal Q-Q plot confirmed that the residuals were normally distributed. This was indicated by the alignment of the residual values along the diagonal line.

5.6.4.2 Homoscedasticity

Homoscedasticity is the constant of variance. It is related primarily to dependence relationships between variables. It refers to the assumption that dependent variables exhibit equal levels of variance across the range of predictor (independent) variables (Hair et al., 2010). In regression analysis, the residuals are assumed to be the same across all values of the independent variables. A residual scatter plot for predicted scores and standardized residual values, also known as errors of prediction, was used to test for homoscedasticity. This assumption is met if the scores are randomly

scattered about a horizontal line which is the case here hence non-violation of the assumption. Results are presented in Figure 5.8.

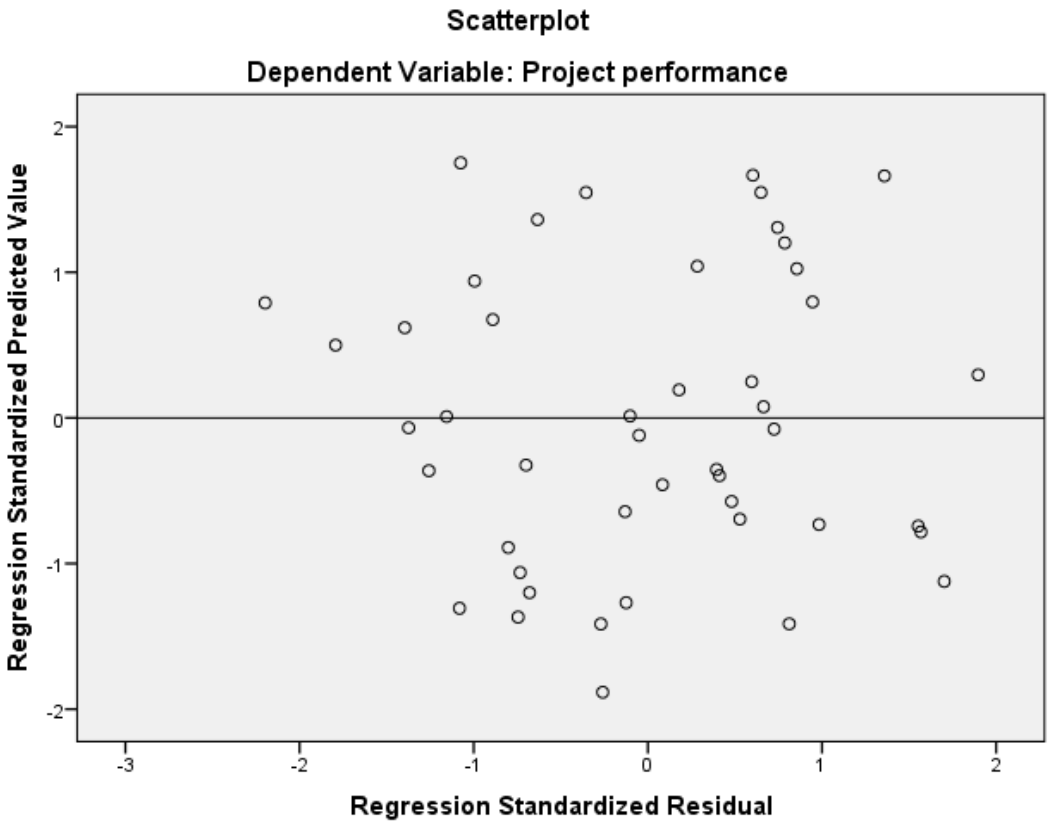


Figure 5.8: Scatter plot of standardised predicted values versus residuals

In the Figure 5.8, the scores appear to be randomly scattered indicating homoscedasticity in the residuals.

5.6.4.3 Multicollinearity

Multicollinearity refers to the high correlation among the predictor variables. In linear regression analysis, independent variables are assumed not to be highly correlated with each other. Variance Inflation Factor (VIF) and Tolerance tests are used to test for multicollinearity. Multicollinearity exists if a tolerance value is

below 0.2 and also if the VIF value is above 5. In this case, the VIF values are below 5 and the Tolerance values are above 0.2. Hence there was no violation of the assumption.

Table 5.33: Tests for Multicollinearity

	Tolerance	VIF
Personal Virtues	.865	1.156
Behavioural Ethics	.865	1.156

Source: Author, 2019

Further, the test was also performed on each of the constructs for behaviour and found that there was no multicollinearity. Thus, all the statistical assumptions for the variables were fulfilled.

5.7 Construction Ethical Character Scale (CECS)

The fourth objective was to develop a virtue ethics scale for the construction industry which is hereby named the construction ethics scale. This is not a statistical or Likert scale, on the contrary; a construction ethical character scale is simply a virtue ethics scale that applies to participants in the construction industry. Ethics scales enable us to classify people according to their beliefs about the ethical decisions they make (Racelis, 2013). Ethics scales can moreover help us to be more aware of the virtuous qualities of people. Inspecting virtues also helps us understand them in connection with the practices in which they are developed (Shanahan & Hyman, 2003; Racelis, 2013).

Racelis (2013) states that one of the criticisms that has been labelled against virtue ethics is that it does not help in identifying who is virtuous and how to determine whose action is virtuous. There have been empirical studies in which virtue ethics scales have been developed in the field of business ethics especially works by Murphy (1999), Shanahan and Hyman (2003), Chun (2005) and Racelis (2013) with

the aim of assessing the link between virtues and specific variables. Racelis (2013) states that a virtue ethics scale is an organisational virtue scale, but it can be assumed that a personal ethical system can be attributed to organisations.

From the above statements, it is implied that the virtue ethics scale developed in this study, even though it shows personal virtues, does reflect the character of the construction industry. The respondents were asked to rate each other in the project. The results were subjected to an exploratory factor analysis which is a multivariate statistical analysis method that identifies the underlying dimensions to represent the different items on the questionnaire (Racelis, 2013). Factor analysis was done using principal axis factoring and orthogonal varimax rotation. The respondents answered questions on both the virtues and behaviour of their colleagues in the project. The factors were chosen using an eigenvalue cut-off of 1.0. All the items that did not contribute to a simple factor structure and failed to meet a minimum criterion of having a primary factor loading of 0.5 or above were eliminated. The findings indicate the latent factors defining the virtues which participants in the construction industry in Kenya possess and their behaviour. Figure 5. shows a scree plot for the factors and the different loadings. Out of 29 factors that were loaded, about 25 had an eigen value of 1.0 and above meaning that the rest were not significant or did not cluster into any component.

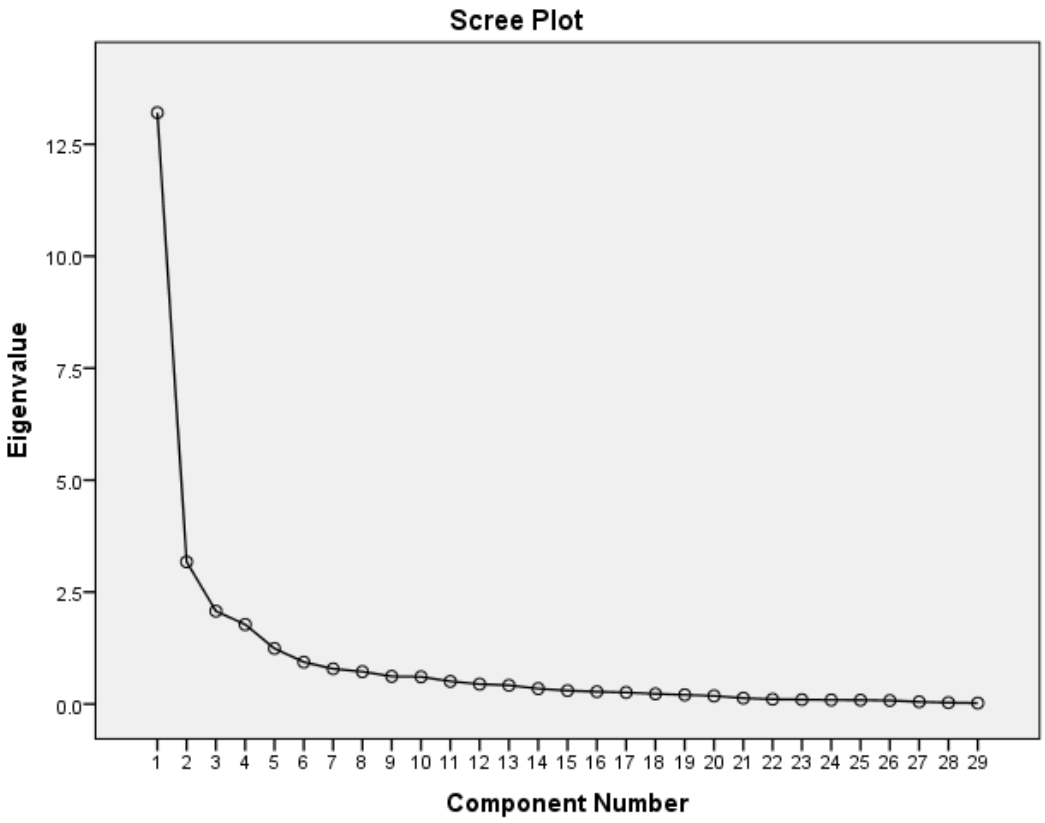


Figure 5.9: Scree plot of virtues of participant

Table 5.34 shows the rotated matrix factor, that is a table which shows the loadings of all the constructs and how they grouped into components. As can be seen, 25 of the 28 loaded onto component 1, and there were three other minor loadings on component 2, 3 and 4 respectively. The factors that did not load were: “easy to work with in a team” and “gives credit to others when credit is due”, so they were omitted from the components. What this implies is that of all the constructs, the ones that load onto one component all describe one factor which is the task of the researcher to find one word, in this case virtue that can describe all the loadings onto different components, a task which is done on Table5.35.

Table 5.34: Rotated Factor Matrix

	Component				
	1	2	3	4	5
Transparent	.856				
Diligent	.834				
Truthful	.830				
Undertakes difficult tasks	.817				
Perseveres in good	.799				
Fair dealings with others	.787				
Renders services without defects	.786				
Friendly	.759				
Adheres to schedule	.735				
Self-control	.733				
Tasks at hand	.719				
Pays attention to details	.709				
Easily anticipates	.706				
Courageous	.705				
Polite	.684				
Keeps time	.678				
Easy decision making	.660				
Finishes off tasks	.653				
Sober	.648				
Accepts responsibility	.635				
Patient	.591		-.513		
Gives credit where it's due	.572				
Easy to communicate with	.566	.496			
Meets agreed price	.550			-.563	
Dares to be different	.505		.487		
Consults for advice		.582			
Easy to work with					
Easily loses temper			-.614		
Eigen Values	5.123	3.488	1.735	1.565	1.108
% of total variance	25.617	17.439	8.674	7.827	5.540

Source: Author, 2019

Table 5.35 describes the virtue ethics scale following the rotated factor matrix as named by the researcher. These are then the virtues that describe the participants in the construction industry.

Table 5.35: Virtue Ethics Scale for Construction Participants

Factor	Variables
Integrity/honour	Transparent, diligent, truthful, undertakes difficult tasks, perseveres in good, fair dealings with others, services without defects, friendly, adheres to schedule, self-control, tasks at hand, pays attention to details, easily anticipates, courageous, polite, keeps time, easy decision making, finishes off tasks, sober, accepts responsibility, patient, gives credit, easy to communicate with, meets agreed price, dares to be different.
Affability	Easy to communicate with, consults for advice
Accommodating	Patient, dares to be different, does not easily loses temper,
Fairness	Meets agreed price

Source: Author, 2019

The first factor describes a person who is just, hardworking and honest (Integrity). The second factor describes someone who is available for others (affable), third factor (accommodating) describes one who is forbearing, understanding, tolerant and the fourth factor describes one who is fair. This suggests that construction participants have integrity, are affable, accommodating and fair. These qualities then are those that one should strive to look for in construction participants and they are also the ones that help us understand them in their various practices.

Scree Plot for Behaviour of Participants

An exploratory factor analysis was then done for the behavioural traits and yielded the following scree plot.

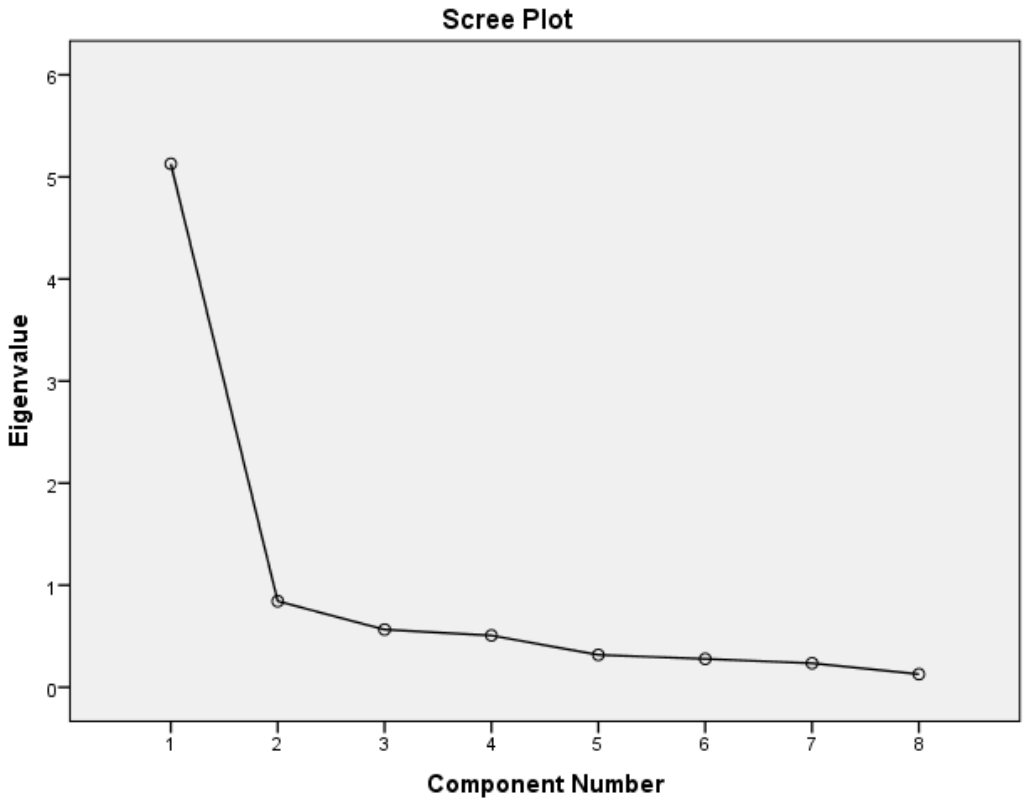


Figure 5.10: Scree plot for behavioural traits

The Figure 5.10 shows that all the factors loaded on to one component with the cut off value of 1.0. The Table 5.36 shows a unidimensional factor. All the constructs loaded on to one factor meaning that all the constructs can be grouped into just one factor that describes a person with such qualities**.**

Table 5.36: Principal axis rotation matrix factor

Component	1
Use underhanded means to get a job	.723
Do special favours to get a project	.741
Tell a lie	.835
Allow someone to be blamed for their mistake	.807
Vindictive	.806
Falsify records to help work situation	.789
Lacks high morals	.841
Fuels conflicts	.853
Eigen Values	**5.128**
% of total variance	**64.101**

Source: Author, 2019

The fact that all the factors loaded onto one component suggests a uni-dimensional component meaning that all the constructs can be grouped into just one component to describe the behavior of a construction participant. It can be said that the one factor that describes all the above is unethical, immoral, bad. Thus, to achieve success, one needs to avoid someone with such behaviour. The results on Table 5.18 showed that the construction participant is highly unlikely to exhibit such behaviour, it is thus highly unlikely that the participant would be unethical and since it is a unidimensional component describing the constructs, the virtue ethics scale is thus taken to represent the virtues of a construction participant.

5.8 Discussion of findings

The following is a discussion of significant results presented above. The relationship to past research is highlighted and some unexpected findings are noted:

The first objective of this research was to determine the performance of construction projects in Kenya. This objective was tackled by looking at the state of the industry as it was at the time of data collection. Data on projects was collected and analysed and respondents asked about the projects, incidents they encountered on the project and how satisfied they were with the project. According to the results obtained in Figure 5.1, 76% of the projects included in the sample were successful. This means that of the 59 projects that were sampled, at least 45 of them were finished on time, within budget and met the required specifications. Table 5.11 shows the breakdown into the constructs of time, cost and quality. This success may be attributed to the projects being private. The unsuccessful projects were mostly caused by technical reasons like lack of funds which led to the projects stalling or delays mostly caused by the client due to indecision or fee disputes. This finding is backed by similar findings in Toor and Ogunlana (2009) and Doloi et al. (2012) which established that most participants were satisfied with the outcome of the Table 5.7 due to teamwork and client-induced reasons despite the unethical incidents being observed. However, the paired T- sample results in Table 5.13 showed that there was a significant difference between the perceptions of participants on how successful they thought the projects were and the calculated success. Generally, the participants thought highly of the overall performance and quality of their projects. This difference suggests that participants attach to success of a project more than just the traditional tenets of time, cost and quality. Participants value such things as good relationship between the team members and with the client which was manifested in the reasons for their satisfaction shown in Table 5.8.

There was a significant difference between the calculated project management success presented on Table 5.11 and the perceptions of the participants on how successful the projects were presented on Table 5.12. This could suggest that the participants' perception of success may have been based on factors other than just time, cost and quality. This is normal as the term success in construction tends to mean different things to different people (Ika, 2009). Which implies that project has multiple dimensions, supporting what several authors (McLeod et al., 2012; Tabish

& Jha, 2011; Howsawi et al., 2011) already found out about success. The parties that were paid on time and had good leadership and team work, were quite happy and termed the project as successful. This would be in line with consequential ethical concepts such as Utilitarianism where something is considered good/ethical when it satisfies or makes the majority happy.

Of interest is that there were many unethical incidences that were identified yet the projects were still classified as successful. Table 5.6 shows that participants were very satisfied with the outcome of the projects. This finding is interesting since one would expect that with unethical incidents encountered on Table 5.5 in the projects, overall satisfaction would be low. Common unethical practices such as delays in decision making and theft of materials, poor quality, bribery, unfair wages and fraud were more frequent in the successful projects suggesting that these practises did not affect the projects. The study did not go in to the reasons why there were delays in decision making and the ethics of it since it did not form part of the objectives, but this could be an area to explore in future. There were incidents of theft of materials, of collusion, and of poor-quality materials just as observed by Mukubwa and Muya (2013) and Vee and Skitmore (2003) in their respective studies. This finding suggests that it is normal for project participants in Kenya to encounter such incidents in projects and not to view them as odd at all which could imply an established culture of unethical incidents. A lack of a strong ethical culture that tolerates inappropriate behaviour allows inappropriate behaviour to spread in a way that would make unethical incidents likely (Rockness & Rockness, 2005).

The second objective of the study was to determine personal ethics of construction participants in terms of virtues and behaviour. Personal ethics had two surrogates in personal virtues and behaviour of participants. The results showed that participants are virtuous and well behaved thus ethical (Table 5.14 and Table 5.17). Results also showed that the participants' perception was that personal ethics is very important in achieving success (Table 5.9) and that most virtues were important in project delivery (Table 5.16). While the participants rated themselves and others as very

virtuous, they did not fail to mention that they had witnessed several unethical incidents on the projects which suggested that some of them were involved in these incidents. If participants were virtuous as they responded, then their work ought not to be just successful, it must be good if it is being done by good, virtuous people. Good in the sense that it is of high quality and standards and also, ethical or moral since it is not possible for work to be good in one sense and not the other. Ethics is about being good people. A person may be efficient, not because they are a good person, but because it pays. The major factors that affect project management success on Table 5.5 show that there are a lot of factors that affect project success have their root cause in ethics. As Gichure (1997) points out, for work itself to be worthy, it must be done with quality, with detail, with aesthetics and with finesse. And so, it is a contradiction that participants are virtuous while at the same time there were unethical incidents in the projects.

The third objective was to find out the relationship between personal ethics of participants and project management success, personal ethics being measured in terms of personal virtue and behaviour. In the context of this work, personal ethics was operationalised to mean ethics that refer to the individual and not professional or business ethics and that manifest in individual behaviour. Thus, personal ethics should not be taken in the philosophical sense in this case. In the analysis on personal virtue of participants and its relation to project performance on Table 5.20, there was found to be no significant correlation between the two, which result was unexpected. According to these results construction participants' virtues do not affect their work and therefore success. This could suggest that whatever good character construction participants have does not impact on their work and that there is a disconnect, between their virtue and their work. Gichure (1997) states that, "technique without morality is not only a disaster but to a certain extent, an impossibility because in the long run it would eventually lead to a reversal of values" (p. 172). Being technically competent does not necessarily mean someone is morally good, but neither does it mean that someone who is virtuous is always successful. If people are good, they will work well so there is the intermarriage between their virtue and work.

Professionalism requires that one makes the greatest possible effort to produce perfect work according to the particular practice and this requires the development of certain habits or virtues and rejection of vices opposed to those virtues. As MacIntyre (2007) asserts, virtues not only help in the pursuit of goods internal but also aid in protecting practices from corruption which may be occasioned by the exclusive pursuit of external goods such as profits. Rockness & Rockness (2005) concluded in their study that the failures at Enron, WorldCom, Tyco, HealthSouth reflected unethical behaviours accompanied by a culture of accepting unethical behaviour. They exhibited great success for a time, but the end result was failure.

A lack of correlation simply shows a lack of influence not causation. However, a look at the tables of factors influencing success in Table 3.5 shows that there are many factors that have their roots in lack of virtue or presence of virtue. These factors can be as a result of both lack of professionalism or lack of virtue. A lack of virtue does not necessarily lead to project failure, but its absence is likely to contribute to it. The whole idea behind virtue ethics is to encourage professionals who are virtuous as well as good workers. It is easier to perform well at work when one is already trying to be ethical even though it may be difficult. The lack of significant relationship between the virtues of these participants and project performance thus suggests that even if there are good people in the industry, their virtue does not influence their work and this could suggest that unethical incidents in construction are likely to go on because people's virtues do not influence their work. The rules of the industry are observed, and consequences weighed against the likely benefits or costs and decisions made on that basis but not on the basis of the integrity of the people who have got the jobs and so the cycle of corruption goes on. The fact that personal virtue did not have any significant relationship with PM Success could also be interpreted to mean that the outcome of the project is not really affected by how virtuous or not a person is. Someone could be virtuous and still produce poor outcomes, or a bad person could still have a good outcome. There is a difference between someone who is unethical and one who is simply inept or ineffective. For

instance, someone could be quite ethical but lazy or careless and that could affect their work.

Participants know that virtues are important as reported on Table 5.16. Ethics is not just about solving ethical dilemmas. It's about developing character, that is, encouraging development of virtue as permanent dispositions of the ethical person. But how do we go about this? The construction industry is so diverse! There needs to be a way to teach ethics to participants of the construction industry given the diverse nature of the industry, and to assign this responsibility to someone or institution. If people in construction industry are virtuous as the results show but there isn't a significant relationship with PM success, it could lead to a situation where people do not take personal responsibility for the results of their work. Construction will always have problems because unlike other professions that have a single code of ethics, construction participants don't. Clients come first but sometimes it is those clients who are the cause of unethical practices. Attention needs to be paid to professionalism and the holistic approach to virtue that leads to success.

The study also found that there was a positive linear correlation between project management success and the behaviour of project participants. Thus, the better-behaved a professional is, the more likely the project will be successful. These results showed more of what was expected and this could be attributed to the fact that respondents had to rate their colleagues based on negative behaviour, on the likelihood that they could have negative traits. This tended to yield results that were more realistic and thus the positive correlation. In their study Creasy and Anantatmula (2013) concluded that projects that fall short of their planned expectations can be avoided by considering the project manager's personality traits and dimensions. They contended that attention should be given to project managers on an individual basis as it pertains to their understanding of project management. Their study supports the finding that the behaviour of project participants is important in project management success and is part of the "soft skills" in project management that needs to be given more attention. Allen and Davis (1993) suggest

that personal and ethical surrogates of professional behaviours should be scrutinised thoroughly when used as indicants of future ethical behaviour. Thus the researcher infers that in construction, to study the integrity, ethics or leadership of participants, the Dubious Reputation Method by Craig & Gustasfon (1998) provides the best results.

A simple linear regression was conducted with project performance as the dependent variable and participants' behaviour as the independent variable which was the indicator for personal ethics. The findings revealed that the model was a good predictor of project performance. Overall participants' behaviour was found to be significant at 5% significance level. The model explained 13.6% of the variation in project performance.

The model was as follows:

$$\boldsymbol{y = 0.266 + 0.474x}$$

Where Y = project management success

X = participants' behaviour

The results on Table 5.17 showed that there is statistical significance between the personal ethics of project participants and the project outcome. However, this personal ethics has to be measured using the dubious reputation method of participants' behaviour and not using personal virtues as participants tend to answer all questions positively. This does not necessarily mean that virtue has no role to play in project management success. What it simply means is that the measure of personal virtues is unlikely to identify participants with integrity issues or unethical behaviour. This agrees with the observation by Kaiser and Hogan (2010) in their study to measure integrity of leaders. Investigation of ethics in a private and personal capacity is indeed difficult especially if the outcome is likely to reflect negatively on the participants. "The complexity of influences, the indeterminacy of defining what ethical behaviour is, and the difficulty of getting "true" responses from the sample all

pose formidable problems to studying and understanding the subject matter" (Allen & Davis, 1993, p. 455). The results on Table 5.19 suggest that while consultants may have high personal ethics and virtues in their work, this will have no significant relationship to the project outcome, which implies that the opposite may also be true, participants may have no personal ethics at all and still be successful in their work. This is informed and supported by the results on Table 5.5 that showed unethical incidents encountered in successful projects. This could suggest that participants in construction are concerned about keeping external rules but regard their private lives as unrelated to their work.

Two observations could be made from the findings above; the first being that in construction, virtue of participants or lack of it does not influence outcome of projects and the second is that the outcome of projects is what matters. The thing about humans is that one could be a crook and still be efficient but that would not make them a good manager. To be good people with strong personalities we need character that is grounded on virtues as its pillars. Virtues reinforce our personality rendering it stable and even-tempered. A virtuous person poised with the right measure in all things, upright, self-possessed and well-rounded may not always be successful but will be good for the practice and for the good life. Virtues are a short-hand way of summarising the ideals that define good character. A virtue according to Aristotle is an excellence (Murphy, 1999) and as such should have an impact on the outcome of one's work.

The second thing that can be drawn from these results is that the construction industry is largely utilitarian in nature. That is, the end or profit is always more important in construction than the means of getting the profits which is manifested in finishing on time, making profits but still an industry that could be corrupt and full of unethical behaviour where the end justifies the means (Bowen et al., 2012; Ho, 2011; Mason, 2009; Vee & Skitmore, 2003; Mukumbwa & Muya, 2013). Rule-based utilitarianism is where participants only observe rules which if followed by all will maximize outcomes for the majority of individuals (Craig & Gustafon, 1998). In this

case, money and profits, and therefore small values are not observed which eventually lead to the whole project being finished late or costly but since everyone in the end benefits and no law has been broken, everyone is happy.

Virtues are those goods by reference to which, whether we like it or not, we define our relationships to those other people with whom we share the kind of purposes and standards which guide practices. Practice might flourish in societies with different codes; what they could not do is flourish in societies in which virtues were not valued, although institutions and technical skills serving a unified purpose might as well continue to flourish (MacIntyre, 2007). This would explain why the construction industry continues to have a bad reputation for corruption and unethical practices.

The fourth objective was to develop a construction ethics scale for construction participants. The results of this are covered in section 5.7, Table 5.34 and Table 5.35. An ethics scale is a measure developed to evaluate the ethics of a class of people, in this case, construction participants. The scale was developed in asking the participants to rate each other's virtues. The extracted components matrix on Table 5.35 shows that construction participants are people of integrity and honour, they are affable, accommodating and fair in their dealings. Even though there was no correlation of personal virtue with project management success, yet virtue is needed to end unethical incidents in the construction industry.

Interesting findings emerged in the course of using the two instruments of personal virtues and the behavioural ethics. One was the failure of the personal virtues to show any correlation to project performance contrary to theory while the behavioural scale showed correlation. This finding seems to suggest that although participants are aware of the importance of virtues and personal ethics in project delivery, they are unable to turn this into positive influence on the project. Further research is needed to show how personal virtues might be incorporated to influence project success since even though the findings show that personal virtues does not influence project performance, yet unethical incidents continue and these may be stopped if virtues influenced work. It is possible that the lack of correlation was because the measures

of personal virtue were worded positively and that respondents did not want to be seen to be the ones who rated their colleagues negatively. The behavioural scale having shown a positive correlation, future research should word the ethics scale in the negative, to facilitate this. These results are only the beginning, it is hoped that future research will develop this scale further which should be able to serve both theoretical and applied goals. From a theoretical viewpoint, perceptions of participants in construction are crucial in developing a holistic understanding of how virtue ethics can be used effectively to influence success in construction. From an applied point of view, this scale can prove useful in a number of ways. First, a general ethics scale for organisations and firms could help in identifying the kind of people involved in projects. Second, this can be adopted as part of a feedback process on a project depending on its outcomes and used for future decisions on choice of project team. The bottom line here is that construction industry continues to experience unethical incidents despite findings showing that the participants are virtuous and this therefore is a disconnect.

Some limitations of the present research are noteworthy. The research merely intended to establish if personal ethics was one of the influencing factors on project delivery. The results offer an explanation not causality therefore inferring causality from the results obtained would be inappropriate. The second limitation is that since only personal ethics was being measured here, it was not possible to control other factors (as shown on Table 5.5) that affect project success. And thirdly, since we see that behaviour of participants affects project management success, further research could be carried out to find out how personal ethics, in conjunction with those other factors (86.4%), affect project management success, and if possible, use a method that will allow for drawing causal inferences. Fourthly, it is difficult to measure people's behaviour or ethics, and that these were merely perceptions about behaviour. A longitudinal study in this case where behaviour of participants is observed throughout the life of the project would probably be more appropriate. Perceptions about someone's virtues do not necessarily show us if that person is ethical or unethical.

Despite these limitations, this research has shown that it is possible to assess the personal ethics and behaviour of project participants. The findings have also shown that it is possible to measure the short-term success of a project. The results have further shown that project participants will tend to rate projects in a positive light because it reflects on their personal character despite there being pertinent issues affecting the project. In addition, project success, just like theory informed us, means different things to different people and has to be more than just cost, time and quality. The client role in project success is crucial, especially in relation to the other participants and whether he fulfils his obligations or not. This has a significant bearing how other participants perceive the whole project.

There is need to incorporate in the education of a construction participant the relation between virtue and good work, and relation between good work and a good person. Only in this way will participants stop being careless and committing faults that cost the industry millions of shillings.

5.9 Conclusion

The chapter presented the analysis of the results and the major findings. The characteristics of the population were described in the descriptions and a qualitative analysis about the perceptions on project management success and ethics given and finally, the relationships presented in the correlations and regression analysis. A discussion of the results and how they relate to previous research was then presented. The summary of the major findings and contribution are now presented in the next chapter.

CHAPTER SIX

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents a summary of the findings and how the aim and objectives of the study were achieved. Based on the findings, the study gives conclusions and recommendations and areas for further research.

6.2 Summary of Findings

The results of the findings are presented in chapter five of this research. The findings of this study are based on a survey conducted on 59 projects in Nairobi Kenya. The findings support the overall objective that personal ethics influences project management success. Table 5.11 and Table 5.12 show the results for project performance. Generally, 76 percent of the projects were found to be successful. Personal virtue of the participants is presented in Table 5.15culminating in a virtue ethics scale of construction participants. This scale showed that participants exhibit integrity, affability, amiability and fairness. A cross evaluation of the same participants using behavioural traits shows that participants are very well behaved with a mean of 0.74. In the study, it was found that there was no significant correlation between the personal virtues of project participants and successful delivery but that there was a significant correlation between behaviour of participants and the outcome of the project and in effect personal ethics. Regression analysis showed that the degree of explanation of project management success by personal ethics R^2 is 13.86%. On a balance of probability, a percentage of more than 10% should be statistically significant.

6.3 Achievement of aim and objectives of study and contribution to knowledge

The main contribution to knowledge is that personal ethics of participants explains 13.86% of the variation in project management success and should thus be

considered as one of the main factors influencing project performance. All the objectives of the study were achieved and consequently, the aim of the research as such. The main aim of this research was to establish the influence of personal ethics of project participants on project performance and has been fulfilled in the specific objectives as stated below:

The specific objectives were:

6.3.1 To Establish Performance of Construction Projects in Kenya

This objective was achieved through the measurement of the constructs of time, cost and quality as a function of project management success. Levels of success were measured through percentage derivations and through assessment by participants. These are presented in section 5.4.1, Table 5.11 and 5.12. A major contribution achieved in this objective was that project management success is achievable regardless of unethical incidents that occur in the project.

6.3.2 Personal Ethics of Project Participants

The second objective was to determine the personal ethics of project participants. This objective was achieved through measuring of personal virtues and behaviour of participants. This is presented in sections 5.4.2 and 5.4.4 and Tables 5.15 and 5.18. The major contribution of this objective was that construction participants in Kenya are quite virtuous and well behaved despite unethical incidents in the projects.

6.3.3 Relationship between Personal Ethics and Project Performance

The third objective was to establish the relationship between personal ethics of project participants and project management success. This objective was achieved in section 5.5 and section 5.6 of the thesis. In the correlation analysis, it was established that there is a positive significant correlation between participant behaviour, hence personal ethics and project management success. However, personal virtue showed no significant correlation with project performance, a result which was unexpected.

This could be because, virtue is something that takes time to grow in someone and thus while respondents were rating each other, they were merely giving what they thought their counterparts possessed which may not have coincided with the actual inherent characteristics of the individuals. In the regression analysis, it was established that there is a significant relationship between (behaviour) personal ethics and project management success with 13.86% of the personal ethics explaining project outcome.

6.3.4 Develop an Ethics Scale for Construction Participants

The fourth objective was to develop an ethics scale for construction participants in the industry. This objective was fulfilled in section 5.7 and on tables 5.34 and 5.35. A virtue ethics scale for construction participants was established. After factor analysis and principal matrix analysis were done, it was established that the virtues exhibited by construction industry participants are integrity, affability, accommodation and, fairness. Even though personal virtue did not show any significant correlation with project performance, it does not mean an ethics scale is not useful after all, correlation does not show causation. Classifying people according to their virtues and behaviour helps us to be more aware of virtuous qualities of people and to understand them in conviction with the practices in which they are developed.

This scale can be used in future to look for qualities needed for participants in the industry which could be through aptitude tests, interviews and seeking recommendations from previous employers. There is, however, need to integrate personal virtues into tangible work results, and this could be done by training industry participants on the importance of cultivating virtues not just in personal life but to affect work too.

Having achieved the four objectives of the study the aim of the research was consequently achieved in which case personal ethics does have a place in project

management success and for that reason it is imperative that it be included in the factors that affect project outcome.

6.4 Conclusions drawn from the Study

The following conclusions are drawn from the study findings:

1. The first study objective sought to determine the success of construction projects in Kenya. The indicators for project management success were time, cost and quality. The majority of projects were found to be successful thus there was successful project delivery even though incidents of unethical practices were noted in these projects. It can therefore be concluded that there is an established culture of unethical incidents that are not considered significant enough to affect the success of the project.

2. The second objective sought to establish personal ethics of project participants in Kenya. It was established that participants are virtuous and well behaved thus, had personal ethics. However, it was concluded that the participants do not know how to translate this directly into project delivery thus making the industry largely utilitarian where the means justify the ends.

3. The third objective was to determine the relationship between personal ethics of project participants and project management success. It was found that there existed a positive linear relationship between personal ethics and PMS that explained 13.86% of project management success. It was therefore concluded that personal ethics is a significant factor that ought to be included in factors influencing project management success, however, the manner of measuring it would have to be via dubious character and not virtue.

4. The fourth objective sought to establish an ethics scale for construction participants. After an exploratory factor analysis, it was established that out of all the virtues that a construction participant needed were integrity, affability, accommodation and fairness. Even though personal virtues had no significant

relationship with PMS, behaviour (which is a manifestation of virtue or lack of) showed a significant linear correlation with project performance. This scale could help in getting the participants who would have the right behaviour needed to deliver. It was therefore concluded that these were the important virtues to look for in future participants and that participants themselves expect these virtues in their fellow colleagues.

In conclusion, project management success is influenced by personal ethics of project participants. However, that influence is too complex for the normal construction project participants to incorporate in project management. Consequently, industry players detach their personal behaviour from their work and mainly rely on ruled based and consequential ethics where in many cases the end justifies the means. They operate in an environment where so long as the ends are achieved, and everyone is happy, that is all that matters without considering how far personal actions may impact on the overall. This study affirms that personal ethics of construction participants is important and there needs to be a paradigm shift in the industry.

There are limitations in methodology on measuring project management success and personal ethics that may have rendered the R^2 insignificant, however, virtue remains very important and though it is not realistic to finalise it now, it has been recommended as an area of further studies. Finally, even though virtue was not correlated to project performance, behaviour was and virtue underlies behaviour.

6.5 Implications

In brief, the behaviour of those participating in projects should be given attention as it is likely to affect the project outcome. The use of the Dubious Reputation Method can be used to learn the behaviour of participants and therefore their personal ethics and how that influences project management success.

6.5.1 Implications for Theory

Observations made in this study have major implications for theory in construction project management. One of the clear implications of this study is that the personal ethics of project participants need to be considered when setting out a project. This research has shown that personal ethics accounts for 13.86% of the variation in project management success. Considering that previous research has shown that critical factors that affect project success are numerous, this is a high percentage to be simply ignored and has to be included in the factors affecting project management success.

The second is that project management success has to be viewed to include the sentiments of all participants and not just limited to the iron triangle. Participants viewed such things as payment on time, teamwork, and good leadership as important for defining success.

Thirdly, the observation that the industry is largely utilitarian implies that the industry needs to look beyond profits and that the goodness of people need to transform into tangible actions that affect their work so as to get rid of a culture of unethical incidents and corruption in the industry.

Lastly, Project Management needs to adopt virtue ethics like it has been done in business related courses. This would also call for a change in the way ethics is taught from school all the way to Continuous Professional Development (CPD). The industry has to pay attention to more than just rule-based ethics to change that occurs within, starting with the person.

6.5.2 Implications for Policy

There is need for collaboration between industry and regulatory bodies and teaching institutions on ethical education in construction. Emphasis needs to be on impacting behaviour of those receiving this education and not just a set of theory tools to solve

ethical dilemmas. It has to be orientated towards moral behaviour and acquiring virtues.

Another implication is that there needs to be a way to curb unethical incidents especially from the client's side. Surprisingly most issues seem to be caused by the client, which is self-defeatist. The results have also shown that though there are several unethical incidents that occur in the industry, projects are still considered successful. This, in the long run could lead to serious repercussions in the industry. Most problems that affect project management success are caused by clients such as delayed decision making, non-payments, constant changes in design etc. This poses a serious selection problem since generally contractors and consultants do not select the client, it is the clients who select contractors and consultants.

Finally, the ethics scale could be adopted as part of feedback process on a project depending on its outcomes and could help in selection of future project teams. Construction Project Management could employ this scale in recruitment or replacement of same. The scale could also for used in project evaluation and in conflict management of construction disputes.

6.6 Areas for Further Research

In the process of this study, the researcher finds several research areas where further study might be necessary for the refinement and enrichment of the insights so far gotten from the study, particularly regarding the ethics of consultants and contractors in a project. Five areas can be highlighted as follows: -

(1) Validation of the Construction Ethical Character Scale developed in this study.
(2) Multiple regression analysis to consider personal ethics together with all other factors affecting success of a project should be done find out what significance they hold jointly. A great challenge is to isolate ethics from other factors that may lead to success or failure of projects. Additionally, a

simulation of the influence of personal ethics of participants on project management success should be done to establish effects of various policy or practice decisions might influence the explanatory and explained variables in the project delivery action.

(3) Multiple regression analysis of the relationship between project management success, and personal ethics, exploring both linear and non-linear relationships that might aid to boost the R2 value observed in this study. Additionally, the influence of gender on the personal ethics active in a construction project should be explored.

(4) A more elaborate qualitative analysis of the indicators of project performance and the various aspects the personal ethics of project participants, in order to bring out the 'chemistry' of the variable constituents and their interactions.

(5) A study to find out what is taught on personal and professional ethics, what is expected and whether the unethical incidents witnessed in the industry are due to technical incompetence or due to lack of training in ethics and just how far ethics training in construction industry professions goes.

Finally, it is necessary to study the ethics of project clients. In this study, a major incident that emerged in most projects was delay in decision making especially by clients. Further research could be done to establish the ethics behind the clients' decision-making in construction projects and why it takes so long.

6.7 Conclusion

Project management success in a given project is significantly influenced by the personal ethics of project participants. However, that influence is too complex for the normal construction project participant to incorporate in the project management endeavour. Consequently, industry players detach their personal behaviour from their work and mainly rely on rules-based and consequential ethics whereby in many cases the end justifies the means. They operate in an environment where so long as the ends are achieved, and everyone is happy, that is all that matters without considering how far personal actions may impact on the overall process and product of the

management. This study affirms that personal ethics of construction project participants is crucial and should therefore be purposefully and fully incorporated in the project planning and evaluation in order to boost the project delivery. This calls for a paradigm shift in the industry.

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APPENDICES

Appendix I: Research Permit

THIS IS TO CERTIFY THAT:
MS. ADELINE MERCY DINDI
of JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, 0-100 Nairobi,has been permitted to conduct research in *Nairobi County*

on the topic: *THE PLACE OF ETHICS IN CONSTRUCTION PROJECT DELIVERY*

for the period ending:
30th December,2017

Permit No : NACOSTI/P/15/6617/5040
Date Of Issue : 25th February,2015
Fee Recieved :Ksh 2,000

.....
Applicant's Signature

.....
Secretary
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 4290

CONDITIONS: see back page

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
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Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

25th February, 2015

NACOSTI/P/15/6617/5040

Adeline Mercy Dindi
Jomo Kenyatta University of Agriculture
And Technology
P.O. Box 62000-00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"The place of ethics in construction project delivery"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for a period ending **30th December, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are required to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. S. K. LANGAT, OGW
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix II: Consent Letter

DINDI M. ADELINE

P.O BOX 17780-00100

NAIROBI

6th March 2017

Dear Participant,

My name is Adeline Dindi and I am a PhD student in the Department of Construction Management at Jomo Kenyatta University of Agriculture and Technology (JKUAT). For my thesis, I am examining the ***influence of personal ethics of project participants on Project Management Success.*** Because you have been part of the team of a construction project that is now completed, I am inviting you to participate in this research study by completing the attached surveys. Your participation in this survey will help me understand the role personal ethics of the project team has on the success of the project.

The attached questionnaire will require approximately 30 minutes to complete. There is no compensation for responding nor is there any known risk. To ensure that all information will remain confidential, please do not include your name. Copies of the thesis will be provided to the Board of Post Graduate Studies, JKUAT and to National Commission for Science, Technology and Information (NACOSTI). If you choose to participate in this research, please answer **ALL** questions honestly and promptly.

Participation is strictly voluntary and you may refuse to participate. The data collected will provide useful information regarding how to improve project delivery in the construction industry in Kenya. Your responses will not be identified with you personally, nor will anyone be able to determine which company you work for. Nothing you say on the questionnaire will in any way influence your present or future employment with your company.

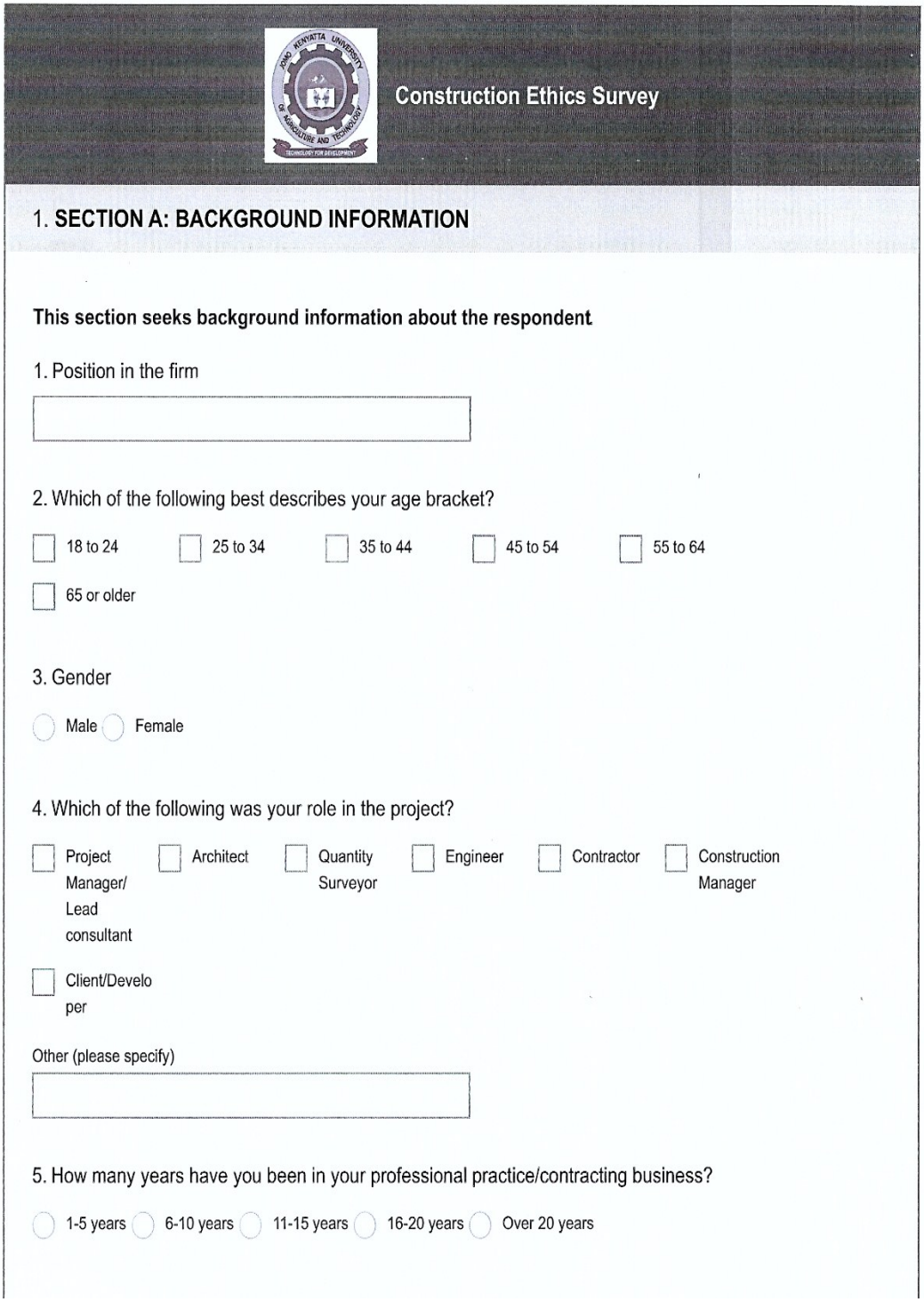
Completion and return of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me at the number listed below. If you are not satisfied with the way this study is being conducted, you may report (anonymously if you so choose) any complaints to the Board of Postgraduate Studies JKUAT at bps@jkuat.ac.ke. Thank you for taking the time to assist me in my educational endeavours.

Sincerely,

Adeline Dindi

Cell: 0721 811195 email: adindi@jkuat.ac.ke

Appendix III: Questionnaire



Construction Ethics Survey

1. **SECTION A: BACKGROUND INFORMATION**

This section seeks background information about the respondent

1. Position in the firm

2. Which of the following best describes your age bracket?

☐ 18 to 24 ☐ 25 to 34 ☐ 35 to 44 ☐ 45 to 54 ☐ 55 to 64

☐ 65 or older

3. Gender

◯ Male ◯ Female

4. Which of the following was your role in the project?

☐ Project Manager/ Lead consultant ☐ Architect ☐ Quantity Surveyor ☐ Engineer ☐ Contractor ☐ Construction Manager

☐ Client/Developer

Other (please specify)

5. How many years have you been in your professional practice/contracting business?

◯ 1-5 years ◯ 6-10 years ◯ 11-15 years ◯ 16-20 years ◯ Over 20 years

6. What is the highest level of education you have completed?

☐ Below Diploma ☐ Diploma ☐ Bachelors degree ☐ Masters degree

☐ Doctorate degree

Other (please specify)

7. What type of organisation do you work in?

◯ Private consulting firm ◯ Contracting firm ◯ Public Institution ◯ Private institution ◯ Corporation

Other (please specify)

8. Please indicate personal monthly gross income

☐ Under Kshs 30,000 ☐ Kshs 30,000-39,999 ☐ Kshs 40,000-49,999 ☐ Kshs 50,000-59,999 ☐ Kshs 60,000-69,999 ☐ Kshs 70,000-79,999 ☐ Kshs 80,000-89,999

☐ Kshs 90,000 and over

9. Which of the following incidents have you encountered in this particular project? (Please tick all that apply)

◯ Theft of materials
◯ Conflict of interest
◯ Unfounded variations and claims
◯ Collusion of contractor with consultants
◯ Unfair wages
◯ Collusion of contractor with client representative
◯ Bid cutting
◯ Over pricing of items
◯ Bribery
◯ Fabrication of test results
◯ Certification of poor quality works
◯ Poor quality drawings
◯ Poor quality materials
◯ Poor workmanship
◯ Failure to enforce specifications and standards
◯ Tampering with signed documents
◯ Non-payment of certificates
◯ Non-payment of workers
◯ Profit sharing of contractor with client
◯ Bias in decision making
◯ Fraud
◯ Concealing errors
◯ Negligence of duty
◯ Delays in decision making
◯ Ambiguous variations and fluctuations
◯ Constant change of project specifications
◯ Certifying work not done

Other (please specify)

2. SECTION B: PROJECT DETAILS

This section seeks background information about this project and your overall satisfaction about it. Kindly fill in the details.

10. Original contract sum in Kshs (approximately)

11. Original contract period in weeks

12. Project commencement date

13. Approximate final contract sum in Kshs

14. Total agreed extension of time

15. Practical completion date

16. Actual project duration in weeks

17. Using any number from 0 to 10, where 0 is no accidents to 10 is frequent accidents, what number would you use to rate this site?

18. How satisfied were you with the degree of conformance of the project to all technical specifications?

Completely dissatisfied	Mostly dissatisfied	Somewhat dissatisfied	Neither dissatisfied nor satisfied	Somewhat satisfied	Mostly satisfied	Completely satisfied
○	○	○	○	○	○	○

19. What was the condition of the building with respect to defects at the time of handover/completion?

Totally defective	Major defects with major impact on the client	Some defects with some impact on the client	Minor defects with no significant impact on client	Defect free
○	○	○	○	○

20. How successful would you say this project was in terms of time, cost and quality?

	Completely unsuccessful	Unsuccessful	Somewhat unsuccessful	Neither unsuccessful nor successful	Somewhat successful	Successful	Very successful
Time	☐	☐	☐	☐	☐	☐	☐
Cost	☐	☐	☐	☐	☐	☐	☐
Quality	☐	☐	☐	☐	☐	☐	☐
Overall	☐	☐	☐	☐	☐	☐	☐

21. Overall, how satisfied or dissatisfied were you with the following?:

	Completely dissatisfied	Mostly dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Mostly satisfied	Completely satisfied
The product	○	○	○	○	○	○	○
The client	○	○	○	○	○	○	○
The project team leader	○	○	○	○	○	○	○
The service of the consultants	○	○	○	○	○	○	○
The service of the contractor	○	○	○	○	○	○	○

22. Give reasons for number 21 above

3. SECTION C: PROJECT PARTICIPANTS' ETHICS

The section below asks questions on character traits and ethics, both individual and that of the other participants in the project. Kindly answer honestly.

23. To what extent do you consider the following behaviour ethical?

	Totally unethical	Unethical	Slightly unethical	Don't know/Not sure	Slightly ethical	Ethical	Totally ethical
Telling a client/consultant you're angry with them	○	○	○	○	○	○	○
Becoming sexually involved with client/consultant	○	○	○	○	○	○	○
Sending holiday greeting cards to clients	○	○	○	○	○	○	○
Telling a client "I'm sexually attracted to you"	○	○	○	○	○	○	○
Working under the influence of alcohol	○	○	○	○	○	○	○
Using profane language in meetings	○	○	○	○	○	○	○
Ignoring questionable behaviour of a colleague	○	○	○	○	○	○	○
Helping file a complaint against a colleague	○	○	○	○	○	○	○
Using illegal substance in your personal life	○	○	○	○	○	○	○
Concealing personal errors	○	○	○	○	○	○	○

24. Please rate how much you agree with each of these statements.

	Very untrue	Untrue	Somewhat untrue	Unsure/Don't know	Somewhat true	True	Completely true
I have never dropped litter on the street	☐	☐	☐	☐	☐	☐	☐
I have some pretty awful habits	☐	☐	☐	☐	☐	☐	☐

	Very untrue	Untrue	Somewhat untrue	Unsure/Don't know	Somewhat true	True	Completely true
I always obey laws even if I am unlikely to be caught	☐	☐	☐	☐	☐	☐	☐
I have taken sick leave from work even though I wasn't sick	☐	☐	☐	☐	☐	☐	☐
I don't gossip about other people's business	☐	☐	☐	☐	☐	☐	☐
I never swear	☐	☐	☐	☐	☐	☐	☐
I sometimes drive faster than the speed limit	☐	☐	☐	☐	☐	☐	☐
I never cover up my mistakes	☐	☐	☐	☐	☐	☐	☐
It's alright with me if some people happen to dislike me	☐	☐	☐	☐	☐	☐	☐
I sometimes tell lies if I have to	☐	☐	☐	☐	☐	☐	☐
I rarely appreciate criticism	☐	☐	☐	☐	☐	☐	☐
It would be hard for me to break any of my bad habits.	☐	☐	☐	☐	☐	☐	☐
I have said something bad about a friend behind her/his back.	☐	☐	☐	☐	☐	☐	☐
I have not always been honest with myself	☐	☐	☐	☐	☐	☐	☐
I always know why I like things.	☐	☐	☐	☐	☐	☐	☐
When my emotions are aroused, it biases my thinking.	☐	☐	☐	☐	☐	☐	☐
I don't always know the reason why I do the things I do.	☐	☐	☐	☐	☐	☐	☐
I am not a safe driver when I exceed the speed limit.	☐	☐	☐	☐	☐	☐	☐
I never regret my decisions.	☐	☐	☐	☐	☐	☐	☐

	Very untrue	Untrue	Somewhat untrue	Unsure/Don't know	Somewhat true	True	Completely true
I sometimes lose out on things because I can't make up my mind soon enough	☐	☐	☐	☐	☐	☐	☐

25. In each of the following statements, kindly rate the participant that has been selected for you.The Developer/ PM/Architect/QS/Engineer/Contractor/ ...(tick one)

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Consults for advice	○	○	○	○	○	○
Is easy to work with in a team	○	○	○	○	○	○
Is easy to communicate with	○	○	○	○	○	○
Easily anticipates next course of action	○	○	○	○	○	○
Easily makes decisions	○	○	○	○	○	○
Meets agreed price	○	○	○	○	○	○
Has fair dealings with others	○	○	○	○	○	○
Renders services without defects	○	○	○	○	○	○
Is transparent	○	○	○	○	○	○
Keeps time	○	○	○	○	○	○
Attends to tasks at hand	○	○	○	○	○	○
Is truthful	○	○	○	○	○	○
Is patient with others	○	○	○	○	○	○
*Easily loses temper	○	○	○	○	○	○
Undertakes difficult tasks effectively	○	○	○	○	○	○
Perseveres in doing good	○	○	○	○	○	○
Accepts responsibility for own actions	○	○	○	○	○	○
Is courageous	○	○	○	○	○	○
Is diligent	○	○	○	○	○	○
Finishes off tasks begun	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Gives credit to others when credit is due	○	○	○	○	○	○
Adheres to schedule	○	○	○	○	○	○
Dares to be different	○	○	○	○	○	○
Pays attention to details	○	○	○	○	○	○
Has self control	○	○	○	○	○	○
Is polite	○	○	○	○	○	○
Is friendly	○	○	○	○	○	○
Is sober	○	○	○	○	○	○

26. Which of the following character traits do you feel are essential for the successful delivery of a project?

	Not at all important	Low importance	Slight importance	Neutral	Moderately important	Very important	Extremely important
Moderation	☐	☐	☐	☐	☐	☐	☐
Loyalty	☐	☐	☐	☐	☐	☐	☐
Trustworthiness	☐	☐	☐	☐	☐	☐	☐
Fairness	☐	☐	☐	☐	☐	☐	☐
Integrity	☐	☐	☐	☐	☐	☐	☐
Dependability	☐	☐	☐	☐	☐	☐	☐
Respect	☐	☐	☐	☐	☐	☐	☐
Courage	☐	☐	☐	☐	☐	☐	☐
Sincerity	☐	☐	☐	☐	☐	☐	☐
Responsibility	☐	☐	☐	☐	☐	☐	☐
Tolerance	☐	☐	☐	☐	☐	☐	☐
Sobriety	☐	☐	☐	☐	☐	☐	☐

27. In each of the following statements, kindly rate yourself. Generally, I ...

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Consult for advice	○	○	○	○	○	○
Am easy to work with in a team	○	○	○	○	○	○
Am easy to communicate with	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Easily anticipate next course of action	○	○	○	○	○	○
Easily make decisions	○	○	○	○	○	○
Meet agreed prices	○	○	○	○	○	○
Have fair dealings with others	○	○	○	○	○	○
Render services without defects	○	○	○	○	○	○
Am transparent	○	○	○	○	○	○
Do community service	○	○	○	○	○	○
Engage in fair competition	○	○	○	○	○	○
Pay taxes	○	○	○	○	○	○
Observe laws and regulations	○	○	○	○	○	○
Make good use of time	○	○	○	○	○	○
Keep time	○	○	○	○	○	○
Attend to tasks at hand	○	○	○	○	○	○
Am truthful	○	○	○	○	○	○
Am patient with others	○	○	○	○	○	○
Do not easily lose temper	○	○	○	○	○	○
Undertake difficult tasks effectively	○	○	○	○	○	○
Persevere in in doing good	○	○	○	○	○	○
Accept responsibility for own actions	○	○	○	○	○	○
Am courageous	○	○	○	○	○	○
Am diligent	○	○	○	○	○	○
Finish off tasks begun	○	○	○	○	○	○
Dare to be different	○	○	○	○	○	○
Adhere to schedule	○	○	○	○	○	○
Pay attention to details	○	○	○	○	○	○
Do not use common funds for personal gains	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
Have self control	○	○	○	○	○	○
Have a big heart	○	○	○	○	○	○
Am polite	○	○	○	○	○	○
Am friendly	○	○	○	○	○	○
Am sober	○	○	○	○	○	○

28. In this question tick the response that best describes the person you rated in Question 25 above.

	Never	Rarely (10% of the time)	Occasionally (30% of the time)	Sometimes (50% of the time)	Frequently (70% of the time)	Usually (90% of the time)	Every time
Would use underhanded means to get a job	☐	☐	☐	☐	☐	☐	☐
Would consider doing special favours to get a project	☐	☐	☐	☐	☐	☐	☐
Would tell a lie	☐	☐	☐	☐	☐	☐	☐
Would allow someone else to be blamed for their mistakes	☐	☐	☐	☐	☐	☐	☐
Is vindictive	☐	☐	☐	☐	☐	☐	☐
Would falsify records if it would help their work situation	☐	☐	☐	☐	☐	☐	☐
Lacks high morals	☐	☐	☐	☐	☐	☐	☐
Deliberately fuels conflicts	☐	☐	☐	☐	☐	☐	☐
Would take credit for others' ideas	☐	☐	☐	☐	☐	☐	☐

29. In general how important do you think the personal ethics of project participants is to the successful completion of a project?

Not at all important	Low importance	Slightly important	Neutral	Moderately important	Very important	Extremely important
○	○	○	○	○	○	○

Appendix IV: Code Book

ID	Y	X(PV)	X(BH)	IM
1	0.8571	0.4141	0.5573	0.2747
2	0.5000	0.4255	0.8667	0.2920
3	0.6667	0.4696	0.5382	0.2576
4	0.7500	0.4594	0.8963	0.2667
5	1.0000	0.4873	1.0000	0.2817
6	0.6000	0.5778	0.7259	0.2643
7	0.8571	0.4641	0.6290	0.2703
8	0.8571	0.4531	0.6302	0.2985
9	-	0.3608	0.3000	0.3004
10	-	0.3653	0.8889	0.2000
11	0.7500	0.3805	0.6005	0.2556
12	0.8571	0.4135	0.8741	0.3187
13	0.6000	0.4240	0.7097	0.2833
14	0.8571	0.5057	0.9556	0.2439
15	0.8571	0.4860	1.0000	0.2299
16	0.6667	0.4751	0.9778	0.2548
17	0.4000	0.3669	0.5256	0.2685
18	0.6667	0.4475	0.6349	0.3257
19	0.4000	0.4391	0.7352	0.2445
21	-	0.3691	0.5037	0.2730
22	0.4000	0.4701	0.8386	0.2342
24	0.5455	0.4568	1.0000	0.2347
25	0.6667	0.4426	0.6506	0.2508
26	0.4286	0.3125	0.4012	0.2283
27	0.6667	0.4511	0.6804	0.2703
28	0.8571	0.5264	1.0000	0.2920

30	0.4615	0.5626	0.5782	0.3429
31	-	0.5852	0.7389	0.3571
32	-	0.5336	0.9630	0.3252
33	-	0.3645	0.7948	0.3636
35	0.6667	0.5267	0.8000	0.2817
36	-	0.3980	0.8103	0.2867
37	0.3158	0.4036	0.5256	0.3371
38	-	0.4595	0.8208	0.3077
39	0.7500	0.5249	0.7595	0.3170
40	-	0.3852	0.6616	0.2691
41	0.8571	0.4425	0.9127	0.3571
42	0.5000	0.5092	0.5768	0.2204
43	1.0000	0.4397	0.7778	0.3179
45	0.5000	0.3865	0.8108	0.2915
46	0.3158	0.4946	0.8316	0.2618
47	-	-	0.8148	-
49	0.7500	0.5148	0.8031	0.2906
50	0.4000	0.5290	0.6413	0.2805
51	0.3529	0.4646	0.7348	0.2545
52	0.4615	0.4374	0.6852	0.2484
53	0.8571	0.5089	0.8815	0.3050
54	0.3750	0.4651	0.5432	0.3021
55	0.6000	0.4249	0.7296	0.3000
58	0.4000	0.4350	0.5753	0.2850
63	0.6667	0.5691	0.7376	0.2778
64	0.2609	0.4455	0.8532	0.3333
65	0.3529	0.4847	0.7000	0.3297
67	0.5455	0.4858	0.6590	0.2967
68	0.7500	0.2786	0.6759	0.3922
69	0.6000	0.5902	1.0000	0.2899

Note:

Y = Project Management Success (dependent variable)

X (PV) = Personal virtues

X(BH) = Participants' behaviour

IM = Impression management

Calculation of Project Management Success (Y)

Project management success was calculated as follows:

$$Y = \frac{n}{(Y1 + Y2 + Y3)}$$

Where, Y = Project management success

Y_1 = Time variance

Y_2 = Cost variance

Y_3 = Quality

n = Total number of the respondents (sample size)

Cost Variance = (Approximate final sum – Original contract sum)/Original Contract Sum *100.

Time was taken to be the Time Variance and was calculated as follows:

Time Variance = ((Actual project Duration in weeks-Original Contract Period in weeks)/ Original Contract Period in weeks) *100.

The two variables were then categorized into various categories as follows:

0-20% represented as 1, indicated that the project was quite successful, 21-40% represented as 2 indicated that the project was somewhat successful, 41-60% represented as 3 indicated that the project was somewhat unsuccessful, 61-80% represented as 4 indicated that the project was quite unsuccessful while 81% and above represented as 5 indicated that the project was very unsuccessful.

For Quality, it was indicated by 2 variables namely; the satisfaction levels on the degree of conformance of the project to all technical specifications where it was measured on a five point Likert scale with 1 representing total satisfaction and 5 representing total dissatisfaction, and the condition of the building with respect to defects at the time of handover/completion. This was measured on a five point Likert scale with 1 representing defect free and 5 representing totally defective. The scores for the two variables were then added together and an average was obtained. The average was then taken to indicate success with the lowest score i.e. 1 being very good quality and the highest, 5, being very poor quality.

Calculation of Personal Virtues X(PV)

Personal Virtue was taken to be an inverse of the average score of all questions asked in Q 25. The scores ranged between 1 to 6 with 1 being most ethical and 6 being least ethical (hence the inverse).

Calculation of Participants' Behaviour X(BH)

Behavioral ethics was taken to be an inverse of the average score of all questions asked in Q 28

The scores ranged between 1 to 6 with 1 being most ethical and 6 being least ethical (Hence the inverse).