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FRAMEWORK FOR MANAGING MULTI-CULTURAL PROJECT TEAMS

Edward Godfrey Ochieng

A Doctoral Thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy at Loughborough University

Loughborough January 2008
ABSTRACT

The theory and practice of team integration has changed fundamentally over the last five years, driven by the growing demands of multi-cultural team working and greater understanding of cultural issues and diversity in the internationalised construction environment. According to the literature reviewed, the challenge to the construction industry in both developed and developing countries is to address its poor performance on people management by focusing on multi-cultural team working.

Different reports published by governing bodies in developed countries such as the UK continue to highlight that clients need to improve their understanding of how construction can best meet their business needs and help lead the process of creating integrated teams. Consequently, there have been a number of empirical studies on project teams, particularly focussing on measures of team success. However, the consequences of transition from monoculture to multi-cultural project teams remain largely unexplored in construction management research.

The few studies that have been carried out have focussed either on team integration in generic terms or on the experiences of individual construction organisations within the context of developed countries. It is the contention of this research that given the increased global trend towards internationalisation of business operations, there is a need for a greater understanding of the cultural complexity of team integration within both developed and developing countries.

This thesis explored the efficacy of multi-cultural team working in heavy construction engineering in Kenya and the UK. The research employed both qualitative and quantitative methodologies to capture all the relevant experiences of senior managers. The findings revealed a number of multi-dimensional factors that either facilitated or limited the effectiveness of multi-cultural team working. These were synthesised into a framework capturing eight key dimensions that must be taken into account in multi-cultural team working. These factors included leadership style; team selection and
composition process; team development process; cultural communication; cultural collectivism; cultural trust; cultural management and cultural uncertainty. These findings are particularly significant because the existing body of research into poor performance and people management, within heavy construction engineering does not take into account the germane challenges faced by multicultural project teams.

From the findings, the research proposed a framework for managing multicultural project teams on heavy construction engineering projects. Framework validation was by follow-up deliberations, which were conducted with managers in selected organisations in Kenya and the UK. Reflecting on their experiences in managing cross-cultural project teams, the participants confirmed that the proposed integration framework and its eight key factors was central to the effectiveness of multi-cultural team working. However, they also pointed out that the use of the proposed framework cannot be expected instantly to transform multi-cultural project teams into high performing units, factors such as political stability or instability can affect the effectiveness of the framework.

This thesis concludes by reiterating the importance of recognising the intricate connection between international construction projects and the prevailing utilisation of multi-cultural project teams. The participants in the study unanimously agreed that the eight dimensions identified in the research were important areas for understanding and exploring how contemporary multicultural project teams are constructed and managed. It is recommended that future research on multi-cultural construction project teams should take account of comprehensive contextual factors, which include socio-economic variation of heavy construction engineering projects in tandem with multi-cultural team working.
DEDICATION

This thesis is dedicated

To my parents

Mr. Nelson Wilfred Ochanji Ochieng

and

Mrs. Pheobe Omollo Amade Ochieng
ACKNOWLEDGMENTS

Many wonderful and dedicated people have contributed to make my Ph.D. study pleasant and invigorating.

I would like to thank my supervisor Professor Andrew Price who has been tremendously supportive during the whole Ph.D. process. Professor Price has managed to combine excellent overall guidance with detailed and incisive suggestions to overcome the challenges I have met. His special academic qualities were inspirational throughout the research period and I am grateful for all the financial support you provided.

A sincere thank you goes to Professor Tony Thorpe and Professor Chimay Anumba for their sponsorship.

No dissertation has reached publication without much painstaking preliminary work, retyping of endless drafts, and countless hours of proofreading. I am thankful to my sister Dr. Bertha Ochieng for her superb job of providing me with constructive criticisms, useful suggestions, encouragement, and support throughout the conduct of the research and the preparation of this thesis. I appreciate your contributions and time spent with me during the research period.

This research was made possible by the participation of a large number of people and organisations. I wish to express my sincere gratitude to all of them as well as the many company directors who participated. Special thanks go to the senior project managers who provided invaluable information and opinions. Their patience, availability, and interest during the research process were incommensurable. Many thanks go to the senior board members at the European Construction Institute who assisted in arranging interviews. The contributions made by Gareth Williams, Stephen Weatherley, Ed Wilson and Tim Nethercott are gratefully acknowledged with thanks, as are those of Cynthia Agutu, David Wamiti and Joseph Okoto for arranging the interviews in Kenya.
Thanks is also extended to my many friends and colleagues at Loughborough University, especially Dr. Ahmed Ibrahim, Dr. Bernard Baiden and Dr. Esther Obonyo. They all contributed so much to the research through informal discussions, advice, and criticisms, which was gratefully received and much appreciated.

A huge thank you is owed to my wonderful parents Nelson Wilfred Ochanji Ochieng and Pheobe Omollo Amade Ochieng. You are both heroes. Thank you for your undying support and encouragement you have given me throughout my PhD studies, which without this, my research would not have been possible. In addition, I have received invaluable support from my family during this research. A special thank you is owed to my brothers, sisters, nephews and nieces for all their help and encouragement.

My final thanks are to the Lord, for guiding me through the trials and tribulations that I never thought that I would see my way through. You have truly blessed me Father and for that, I devote my being to you. Thank you O’ Lord.
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CHAPTER ONE: INTRODUCTION TO THE RESEARCH

1.1 INTRODUCTION
The construction industry is an important sector of the economy and contributes significantly to Gross Domestic Product (GDP). The industry generates employment and income for a significant percentage of the population, and covers an extensive variety of technologies and practices of scale (UNEP 1996). The UNEP (1996) report estimated that about one-tenth of the global economy is dedicated to constructing and operating homes and offices. Recent statistics by Kenny (2007) estimated that construction is a $1.7 trillion industry worldwide, accounting for five to seven percent of GDP in most nations. The industry consists of construction and repair and therefore serves to maintain the infrastructure. The industry builds public and private housing, non-residential public, (e.g. hospitals and schools), industrial, (e.g. factories and processing plants) and commercial properties (DTI 2004). The plants, which contractors in this industry design and construct, contribute to the manufacturing of many of consumer products. The construction industry also consumes a significant amount of natural resources. The industry consumes at least one-sixth to one of the world’s wood, minerals, water, and energy (UNEP 1996).

Construction activity takes place everywhere there is human settlement. In most countries, the government is a major client for the construction industry (ILO 2007). A comprehensive study by the International Labour Organisation (ILO) (2007) verified that there is a correlation between disposable income and any government investment in construction work. The 1998 statistics indicated that government expenditure in construction varied from US $5 per head in Ethiopia to almost US$ 5,000 in Japan suggesting a heavy concentration of construction output in the rich, developed nations. The ILO further confirmed that Europe accounted for as much thirty percent of global output while the USA accounted for twenty-one and Japan twenty percent. Despite its huge growth in recent years, China absorbed only six percent and India one point seven percent (ILO 2007). Turning to the distribution of construction employment, seventy-seven percent of the construction workforce comes from high-income nations whilst twenty-three percent from low-income nations (ILO 2007).
Since a number of construction workers from developing countries are employed within the informal sector and therefore not counted in official data, the real percentage could be higher. The reason behind the greater employment-generating potential of construction activity in developing nations has been linked to differences in technology. Construction operations are executed using a variety of techniques and technologies depending on the income levels and the relative cost of labour and capital. In developed countries such as Japan, the UK and the USA, machines have largely replaced the workforce in most operations (with the exception of repair and maintenance, which is still very labour intensive), whereas in developing countries where labour is still cheap, the majority of project work is carried out by manual methods with minimal use of machinery and equipment (ILO 2007). Construction is an important industry in both developing countries such as Kenya and developed countries such as the UK. This is not just because it accounts for a relatively high percentage of GDP but because the product of the industry—the building and its environment affects the entire economy (Egan 2002; Mitullah and Wachira 2003).

It is widely accepted that a project is successful when finished on time, within a budget, in accordance with environmental, and legal specifications and to client satisfaction. Unfortunately, due to a number of factors, project performance and project success needs to improve, especially in developing countries. In the UK, construction sector project delivery performance has been criticised for being unreliable. Time and budget overruns are common and much effort and resources are invested in making good defects. As a result, several studies have been undertaken (Mansfield et al 1994; Ngowi 2002) in specific types of projects. These studies usually focus on agricultural, construction, process industries, manufacturing, facilities and service projects.

The construction industry has a long-standing reputation for being adversarial, demonstrated by poor relationships between the client and project teams, which in turn lead to numerous problems including poor project performance and a low number of long-term relationships between members of project teams (Murray and Langford 2003). These problems can be attributed to cultural issues between project teams. Given the supposedly severity of cultural complexity and the obvious failings of the industry’s approach towards its workforce, it is not surprising that Egan’s review
(1998) challenged the industry to address its performance on people management. Most recently, the industry's 'Strategic Forum' laid down challenging targets for the improvement of its people management practices within its 'Accelerating Change' report (Strategic Forum for Construction, 2002). As Dainty (2007) confirmed, the industry needs to address its poor performance on people management by focusing on cultural issues.

The construction industry has been under pressure to evolve into a sector that is constantly changing to fit the needs of the broader context in which the operations are executed. Attitudes towards working have changed dramatically in recent years and there is currently much more emphasis on multi-cultural team working. As construction organisations define more of their activities as projects, the demand for multi-cultural team working grows, and there is increasing interest in reforming the project delivery process. Based on this demand and the previously cited challenge of improving people management, this research has focussed on examining the factors influencing multi-cultural team working and has explored how team integration can be made effective for a multi-cultural project environment. The study is set within the context of project competence which has been an area of significance since the mid-1990s (PMI 1996). The findings of the study will provide clients, project directors, project managers, project leaders, and multinational construction organisations with an extensive framework for managing cultural complexity.

1.2 RESEARCH BACKGROUND
The management and development of project teams in the global context unavoidably leads to a consideration of diversity and related challenges. Within overseas construction projects, it is essential for organisations to help their project managers to appreciate the international nature of the industry and to develop the ability to understand everyday jobsite issues from different cultural perspectives. Bartlett and Goshal (1989) identified the main challenge facing organisations, which are intending to work overseas as being able to introduce practices, which balance global competitiveness, multinational flexibility and the building of a global learning capability. The authors further argued that organisations must develop the cultural sensitivity and ability to manage and leverage learning to build future capabilities if they are to achieve this balance.
Ely and Thomas (2001), and Jehn et al (1999) demonstrated that diversity increases the number of different perspectives, styles, knowledge, and insights that the team can bring to complex problems. The world's most innovative firms, such as Microsoft, took advantage of this by intentionally introducing multi-cultural team working. Unfortunately, in contrast to sectors such as IT, manufacturing, aerospace, the construction industry has not taken into account the issue of cultural complexity and its influences upon different project teams. As established in the literature, all the evidence points to an assimilationist attitude, which largely ignores the needs of different project teams, expecting them to become accustomed to the dominant industry, national or organisational culture (Loosemore and Al Muslmani 1999; Loosemore and Chau 2002). However, current thinking on team integration requires organisations to value explicitly multi-cultural team working, to adapt to it and use it to generate improvements in project work performance and team effectiveness. Still, it should also be noted that linking different individual cultures to project outcomes is controversial. The understanding of the behavioural dynamics of multi-cultural project teams in construction is still in its infancy. Although project teams from different cultures may well bring different perspectives and styles, the necessary conditions, likely consequences, and overall performance implications are yet to be universally accepted.

Existing literature on cultural diversity examines team members' demographical backgrounds and other factors relevant to their cultural characteristics, values, and discernments (Ansari and Jackson 1996; Jackson et al 1992; Kandola and Fullerton 1998; Watson et al 1993). The cultural diversity of a project team has a number of benefits, including the variety of perspectives, skills, and personal attributes that multi-cultural team individuals can contribute. (Maznevski 1994). As confirmed by (McLeod and Lobel 1992) diverse groups generate more ideas of high quality in brainstorming tasks. Culturally diverse teams perform better than homogenous teams when it comes to identifying problems and generating answers (Watson et al 1993). According to Townsend, (et al 1998) organisations that utilise multi-cultural teams make significant gains in productivity. For example, Ng and Tung (1998) established that culturally diverse teams of a multi-branch financial services firm reported higher levels of financial profitability compared to their culturally homogenous counterparts. More recently, Marquardt and Hovarth (2001) established that by assembling the
energy and synergy of individuals from different backgrounds, organisations could generate creative approaches to problems and challenges that are faced by corporate teams in project-based operations.

It has also been ascertained that communication in multi-cultural teams stimulates the formation of an emergent team culture. Unlike a homogenous or monoculture team, a multi-cultural team cannot refer to a pre-existing identity because hardly any camaraderie exists among team members (Earley and Mosakowski 2000). Thus, they develop and depend on a team culture of straightforward rules, performance expectations, and individual perceptions. Earley and Mosakowski further confirmed that an effective multi-cultural team has a strong emergent culture as shared individual prospects facilitate communication and team performance. This suggests that the positive effect and trust generated by the perceived shared understanding can fuel performance improvement and boost team effectiveness. Most importantly, effective interaction among project team members can facilitate the formation of a strong emergent team culture (Pearson and Nelson 2003). Nonetheless, multi-cultural teams are particularly susceptible to communications problems that may affect team cohesion. Individuals in multi-cultural project teams have different perceptions of the environment, motives and behaviour intentions. Shaw (1981) argued that the effects of such differences could be visible in lower team performance due to impeded social cohesion. Further research on team cohesion and team performance showed a positive correlation between these two variables (Elron 1997; Evans and Dion 1991). Elron (1997) asserted that cohesive teams respond faster to changes and challenges and are more efficient.

Managing cultural differences and cross-cultural conflicts is in general the most common challenge to multi-cultural teams (Marquardt and Hovarth 2001). However, there has been limited research on “people issues” within multi-cultural teams in construction management literature. The dominant focal point has been on “research for management” rather than “research of management.” Richardson (1996) noted that the recognition of techniques such as lean production and business process re-engineering are indicative of this point of view, as they mirror fashions in mainstream management, which are themselves based on a traditional culture of prescription and control. People management in construction has become an important topic within
the construction industry (Dainty et al 2007; Egan 1998). The industry needs to address its poor performance in people management by focusing on cultural issues (Dainty et al 2007). Cultural issues among team individuals can cause conflict, misunderstanding and poor performance (Shenkar and Zeira 1992). Five of the most distinctive challenges managers face include are developing team cohesiveness; maintaining communication richness; dealing with coordination and control issues; handling geographic distances and dispersion of teams; managing cultural diversity, differences and conflicts (Marquardt and Horvarth 2001). Construction project managers from different countries are likely to translate and respond differently to the same strategic issues or team tasks because they have distinct perceptions of environmental opportunities and threats. An awareness of cross-cultural issues is therefore an essential competence of a manager's ability to address the common challenges faced by multi-cultural construction project teams.

While many researchers have investigated culture in construction (Kandola and Fullerton 1998; Meek 1998; Barthorpe et al 2000; 1999), understanding of cross cultural management factors on multi-cultural project teams is insufficiently developed. Furthermore, the industry has not responded to cultural issues facing its workforce within the construction industry. Multi-cultural project teams have merits from many points of view. Heavy international engineering construction projects involve multinational project teams from different political, legal, economic, and cultural backgrounds. As the environment is becoming more complex and changes are faster, multi-cultural construction project teams must improve their ability to address such external challenges. Multi-cultural construction project teams have a wider range of perspectives. Within this diversity of views, solutions for old problems are often found, however, this requires a certain level of integration. The sense of belonging to a group gives a feeling of safety and comfort to a team member (Schein 1985). This feeling gives the team better options for responding to project challenges. It also breaks the comfort zones and creates innovative solutions to project issues that might arise. Although concerns about cultural issues seem to be discussed widely by the construction research community, formal analysis on, cultural issues affecting multi-cultural projects teams emerge as a largely unexplored theme (Kwan and Ofori 2001; Thomas et al 2002; Widmen 2004). This research highlighted
the problems related to team integration and made a number of recommendations for effective multi-cultural team working.

1.3 CULTURAL COMPLEXITY
A number of authors have demonstrated the importance of culture in organisations (Kwan and Ofori 2001; Thomas et al. 2002; Widmen 2001). The question which arises is how to approach the cultural issues within construction organisations. Vonsild (1996) argued that a number of international projects have undoubtedly been carried out without anyone ever noticing that cultural differences may have caused unforeseen frustrations and hurdles. However, a number of international projects never reach optimal levels of operation, successful handover to the local authorities or indeed client satisfaction because cultural differences have augmented other difficulties that may have been encountered (Vonsild 1996). For example, Vonsild (1996) noted that during the “World Congress on Project Management conference in Paris” one Danish company presented a case story in management of multi-cultural projects in North Africa. The project involved interested contractors from three continents-Korea, Libya, the UK and Denmark. The project was to be finished in two years with a profit of 2 million US dollars. According to Vonsild (1996), after six years the project was finally completed, but at a loss of 1 million US dollars. As Vonsild (1996) writes, it was impossible to draw up project plans and agreements to everyone’s satisfaction. Organisational relationships were never quite clear. Language and cultural differences made intercultural communication difficult.

As presented above, the cultural counterweight that each contractor brings to a project is more often than not insentient. As Hofstede (1980) claimed, part of our culture may be cognisant and explicable to others. We know and can articulate what is deemed polite behaviour and polite language. However, from the literature reviewed few of us are completely aware of our actions-and ways of thinking-are determined by more hidden or in fact unconscious values (Hofstede 1980; 1983; 1991; 2001). For instance, Vonsild (1996) suggested that it may include patterns of interpersonal relationships, attitudes towards authority, approaches to carrying out a task, concern for efficiency, communication patterns, work and learning styles.
Hofstede (1980) noted that cultural norms and values are passed on from generation to generation. It is essential to affirm that no one culture is right and another wrong, but within each cultural project team, whether national, international, ethnic or organisational, there is a shared project goal of what is considered right or wrong, logical and illogical, normal and abnormal, fair and unfair (Widmen 2001). These norms affect the way project teams communicate and behave and the project structures which they create. Applied to heavy engineering projects, when contractors come from the same or similar cultural backgrounds, there will be diminutive perception of cultural differences. Evidence shows that, when contractors bring different norm expectations to the project it can lead to cultural clashes and disturb the smooth running of the project (Kwan and Ofori 2001). According to Thevenet (1999, p.10), culture can assist the organisation in dealing with management problems. From the findings and literature reviewed, there was no construction organisation interested in the culture itself. The focus on culture was on solving actual problems, project strategy, re-organisation, mobility of project teams and communication. It is essential to note that culture is not just a tool used to address project problems.

But what does cultural complexity mean? As Sackmann (1997, p.2) writes the concept of cultural complexity “includes both ideas: simultaneously existing multiple cultures that may contribute to a homogenous, differentiated, and/or fragmented cultural context”. Consequently, the cultural complexity perspective suggests in project settings culture is much more complex, pluralistic, varied, contradictory, or inherently “paradoxical” than it appears at first sight. Denton (2004) defined cultural complexity as a set of constructs by which societies may be distinguished along the lines of developmental sequences. A number of management researchers have shown the importance of the concept of culture in organisations. In their analysis of the literature on organisational learning, Wang and Ahmed (2003, p.11) suggested that there is a strong emphasis on the cultural perspective of the learning organisation. Soderberg and Hoden (2002) argued that a learning organisation becomes the “knowledge-creating organisation, a new kind of communicating entity...that necessitates new forms of intercultural communication know-how” and that the key engine of learning is the multi-cultural team”. As discussed above, cultural complexity is an indistinctly term that has a diverse range of meanings in both
business and project settings. For the purpose of this study, cultural complexity is used to describe managerial attitudes towards managing multi-cultural project teams.

1.4 PROJECT CULTURE

In recent years, project culture has become an important research area in construction management, particularly at the project level. Thomas et al (2002) and Uher and Loosemore (2004) identified project culture as one of the important elements affecting the outcome of construction projects. From the literature reviewed, it emerged that process and project improvement, and cultural shifts have been encouraged for the effectiveness and competitiveness of the construction industry (APCC 1997; Egan 2002; Latham 1994; RCBCI 2002). In particular, the need for a unified and positive project culture has become a vital issue for project performance (Korzilius, 1998; Newcombe 1997). In this study, participants identified an integrated project culture as one of the key determinants for project success because it was found to improve the communication flow for team members to understand each other's objectives with ease. So what does project culture mean?

Widmen (2004) defined project culture as "the general attitude toward projects within the business". The attitude refers to the way an individual views a project situation or condition and then conduct themselves accordingly. Gareis and Huemann (2000) suggested that achieving the right project culture is one of the project objectives during the project management process. Gray and Larson (2000) asserted that it is the project manager's responsibility to form a project culture that supports teamwork and high levels of personal motivation, as well as to quickly identify and resolve project issues that may threaten the aims and objectives of a project. Being recognised as one feature of the project environment, the culture developed within a project depends on the project leadership and organisational structure which is accepted for the project (Widmen 2001). According to Gupta (2003), and Kwan and Ofori (2001) factors that mostly influence project culture include:

- individuals within a project team,
- client environment;
- project objectives;
• type of parent organization;
• the project prehistory; and
• prior working relationships.

The above reviewed literature shows that project culture does to contribute towards the performance and project success. In the context of this research, it was found that a constructive project culture should be developed in order to produce effective multi-cultural project teams. Walker (2002, p.129) stated that the advantages of a strong culture are “enhanced effectiveness that contributors learn to live together and are less narrow minded, and that it reconciles conflicts”. Different project cultures will lead to different project results. Consequently, it is essential for the project manager to introduce a project culture designed to align organisational goals and objectives with those of the individual partners (which helps to minimise conflicts), to enhance communication and coordination. As presented in the findings of this study, common elements of project culture include trust, cooperation, teamwork and effective communication. A perfect project culture in construction project culture should be cooperative and collaborative (CRC for Construction Innovation 2004). The reviewed literature confirmed that different project culture would have different impact upon performance and outcome of the project culture. It could be argued that the need for a integrated project culture is the most significant problem on multi-cultural project teams. In spite of project culture popularity and widespread appeal, there are many issues that need to be given serious consideration before implementation. As part of this research, the focus would be to understand the practical implications of project culture on multi-cultural project teams.

1.5 ASPIRATION OF THE CONSTRUCTION INDUSTRY
As established in this research, construction operations are so complex and multidimensional that major heavy construction engineering projects in many developing countries are often performed as joint ventures with firms from developed nations. A good understanding of multi-cultural team working is therefore particularly beneficial to developing and developed countries. According to Clark and Ip (1999), trans-global economic developments offer an opportunity to introduce products utilising up-to-date knowledge in a cost-effective manner. In any
construction project, it is essential for the senior managers to be cross-culturally competent. Multi-cultural team working calls for cultural understanding and sensitivity in terms of personnel management by the concerned clients. The specific cultural and behavioural issues include language, communication, and the understanding of cultural differences.

In the last ten years, there has been a growing research interest in soft issues like social and cultural factors, which affect people management on projects (Dainty et al 2007; Egan 1998). The interviews held in both Kenya and the UK revealed that cultural dynamics causes challenges in heavy construction engineering projects among other internal and external issues. In addition, cultures are very dynamic, which creates another challenge to clients and project managers within the construction industry. Addressing the poor performance of multi-cultural project teams remains an aspiration within the construction industry.

For effective management of multi-cultural project teams, there is a need to examine if cultural complexity can be effectively managed. Due to the demand of international construction projects involving multi-cultural project teams, there is a growing trend towards discussing cultural complexity more openly within the construction industry. This has been influenced by clients in both the developing and developed countries demanding for improved people management strategies. There is a need for increased research efforts in understanding influential factors that affect managing cultural complexity in multi-cultural project teams. There is mounting evidence and opinion indicating that integrated team working is a primary key in efforts towards improving product delivery within the construction industry (Egan 2002). Given the uniqueness of culture to particular project teams, and its persistent influence in societies and organisations this study presents a balance between the experiences of project managers from a developed and developing country. The outcome is an integrated framework that should be of benefit to a broad range of professionals and non-professionals working with multi-cultural project teams within the construction industry.
1.6 RESEARCH IN MULTICULTURAL PROJECT TEAMS

Multi-cultural project teams have become very common in recent years. Contemporary literature in international management has identified the management of multi-cultural teams as an important subject in human resource management. Most of the studies have focussed on the positive effects of using multi-cultural teams. Early and Mosakowski (2000) stated that multi-cultural teams are used because of a belief that they out-perform monoculture teams, especially when performance requires multiple skills and judgement. It is the contention of this thesis that because of inadequate research into construction-specific multi-cultural teams, construction organisations have not capitalised on this asset. Consequently, many of the construction organisations that are expanding globally are unable to respond to cultural factors affecting their project teams.

This research is based on heavy construction engineering project work, which is typically performed by a number of multidisciplinary and multifunctional teams. The term heavy engineering, as used in this study, is intended to encompass industrial projects which include power plants, pharmaceutical plants, refinery plants, highways and pipelines. Heavy engineering, projects can range from small to very large, and they are usually carried out for the client by contractors and sub contractors. Clients can include oil, chemical, pharmaceutical, food manufacturing and water companies all over the world (on and offshore). The nature of these projects means the wealth of heavy engineering design and construction industry is inextricably bound up with the health of the world’s economies (GTI 1999). For this reason, contractors and sub contractors work with a cross section of clients in a variety of economic sectors.

Attitudes towards project management have changed dramatically in recent years (GTI 1999). There is much more emphasis today on team working. As argued in this study, initiatives through better understanding of multi-cultural team working aim to reduce adversarial culture between parties and promote mutually beneficial working practices which bring out cost reductions. The thesis has demonstrated the potential for using the various cultural dimensions that have been already used in the general practice of international management (e.g. Earley, 1993; 1994; Peterson et al 1995) to enhance multi-cultural team working in construction projects. To ensure that the findings encapsulated the key contextual issues in multi-cultural team working,
cultural differences between participants from Kenya and the UK were investigated in a valid and reliable manner, and assessed against the leadership variables of interest.

1.7 RESEARCH QUESTIONS
The key research questions posed include:

1. What factors affect multi-cultural team performance?
2. What types of determinants are at play in multi-cultural project teams, and which of these are critical to team performance?
3. What degree of cultural complexity exists in heavy construction engineering projects in Kenya and the UK?
4. What are the challenges faced by project managers in developing effective project delivery process for large, heavy, construction engineering work?

1.8 AIMS AND OBJECTIVES
The research aims to develop a framework for managing multi-cultural construction project teams. The resulting framework provides a holistic and structured team integration approach, which also engenders a more effective way of managing cross-cultural issues within a project environment.

1.9 OBJECTIVES
The specific objectives developed to achieve the aim of the research were to:

1. identify the critical success factors for heavy construction engineering projects in Kenya and the UK;
2. establish the importance of team integration in ensuring project success;
3. review current practice in Kenya and compare this to the practice in the UK;
4. identify the factors contributing to the development of an appropriate culture and the realisation of efficient multi-cultural team integration process;
5. propose a framework which can be applied in addressing cross-cultural complexity in multi-cultural project teams; and

6. validate that framework through focus groups and workshops.

1.10 RESEARCH PROCESS

An exploratory literature review of the performance of projects within the heavy construction-engineering sector in Kenya and the UK was conducted. The review revealed the sector’s poor performance in people management that could be addressed through the realisation of improving the integration of multi-cultural teams. An in-depth review of project teams and their integration was performed. The research questions were developed from the literature review. The research aim and objectives were then confirmed and an appropriate research methodology selected. A number of semi-structured interviews with project managers were conducted to identify industry-specific examples of how cultural issues engender multi-cultural project teams. There was also a complementary use of a postal questionnaire to investigate a wide range of behavioural, cultural, and socio-environmental issues. Figure 1.8 provides a flow diagram summarising the research process.
Chapter One

An exploratory literature review of the cultural complexity in the UK and Kenya.

Chapter Two

In-depth review of cultural complexity in team integration and project delivery process.

Chapter Three

Establish research aim and objectives.

Chapter Four

Key research questions developed.

Appropriate research methodology selected.

Semi-structured interviews and postal questionnaire.

Selected organisations to interview.

Selected organisations to survey.

Data analysis carried out. NVIVO and SPSS software used.

Chapter Five and Six

Discussion of results

Chapter Seven

Develop and validate a framework for improving project performance in multi-cultural teams.

Chapter Eight

Conclude on research findings and make recommendations for future research work.

Chapter Nine

Figure 1.10: Research methodology flow chart
1.11 FRAMEWORK
A framework of the key issues affecting the integration of multi-cultural project teams was developed and validated by two focus groups in Kenya and UK. Each group comprised senior managers who collectively agreed that the framework:

1. sufficiently highlighted the key factors of cultural complexity that have to be tackled within a multi-cultural project team that is determined to deliver high performance; and
2. Provide a generic applicability and establish a basis for building an understanding and awareness of cultural differences and how they are to be manage.

1.12 THESIS STRUCTURE
Chapter One introduces the research. It comprises an introduction to the subject, the research background, and justification for the research, research questions, aim, and objectives. The chapter briefly delineates the research process and the key findings.

Chapter Two presents a review of project management theory, practice, and research. It builds the theoretical foundation of the research. It reviews the construction industry in Kenya and the UK. It also discusses the nature of the product and the methods for delivering projects. In addition, it also compares construction project delivery within Kenya and the UK. Finally, the chapter summarises the current-state-of-the-art, which culminates in a discussion on key cultural issues for further research.

Chapter Three reviews some of the cultural and project challenges facing the construction industries in Kenya and the UK. It defines and distinguishes between cultural and project factors. The main issues discussed include complexity in construction project development as well as cultural complexity.

Chapter Four gives a detailed description of the research design and includes methodologies, research types, sampling strategies, and data collection techniques. Based on this assessment, the most suitable research strategy for this study emerged as one that involved combining both qualitative and quantitative methods. In addition, Chapter three also validates the chosen methodology in the light of the current field.
Chapter One

Chapter Five analyses the qualitative findings relating to the four research objectives. Findings from data collected through semi-structured interviews are presented in the chapter. The chapter discusses the participants’ accounts of managing multi-cultural project teams in heavy construction engineering projects.

Chapter Six contains the survey findings relating to monitoring project team performance, achieving team goals, integrated supply team, project team performance, aligning goals within the team, maintaining team affiliations, managing obstacles to integration and effective formation of multi-cultural teams.

Chapter Seven contains a discussion synthesising the interview, survey and validation results reported in chapter five, six, and seven. The chapter also shows how these results either confirm or contradict existing literature and, where appropriate, makes suggestion regarding the possible modifications to existing theory.

Chapter Eight is devoted to the development of a cross multi-cultural project performance framework. The need for the framework and an overview of the variables of the framework are discussed. The chapter gives a detailed description of the proposed integrated framework. It also discusses the validation of this framework.

Chapter Nine presents the main conclusions of the research. These are drawn from the research findings as well as the recommendations for the industry. Suggestions for further work have been provided.
Figure 1.12: Outline of thesis
CHAPTER TWO: REVIEW OF CONSTRUCTION AND PROJECT PERFORMANCE IN KENYA AND UK

2.1 INTRODUCTION
To explore adequately cultural complexity in Kenya, this chapter initially commences with an overview of project management. Key issues in project management theory are discussed. This is followed by an overview of the construction industry and its project performance within the Kenya and UK construction industries. The main thrust of this research is to examine problems being experienced in the management of multi-cultural project teams on heavy construction engineering projects. A review of the Kenyan and UK construction industry has been performed and this review provides an analytical definition of the problem and the theoretical background for this research. Finally, a summary of the construction characteristics in Kenya and the UK are discussed.

2.2 OVERVIEW OF PROJECT MANAGEMENT
Project management and research into it continues to grow and develop. In response to projects being developed in new sectors, countries and application areas the demands on project management continue to change as shown in this chapter. These changes alter the way project management is viewed and practiced and this is reflected by the literature. After re-examining some of the failures or poor performance (Kivaa 1999; Lema and Price 1998; Mbatha 1986 and 1993; Msita 1998; Rwelamila 1996; Rwelamila et al 1999 and 2000; Talukhaba 1988; 1999), one could suggest that in developing countries the causes often originated in poor management, unclear team roles, and goals. In recent years, the discipline of project management has changed in its application dramatically to accommodate emerging management processes and philosophies related to organisational development. Numerous studies have already examined changes to the field (Lewis et al 2002 and Maylor 2001) using many different approaches, resulting in diverse and at times contradictory findings.
Turner (2006(i); 2006(ii); 2005) articulates the fundamentals of project management theory and addresses a hugely important challenge for the research community. Turner argues that the study of project management is theoretical and unhelpful in the politics of research, particularly research funding. Turner further highlighted that much of project management research lacks explicit statements of its theoretical underpinning. Since theory helps to direct researchers into productive lines of enquiry, the lack of explicit theory hampers the pursuit of research and the development of a cumulative foundation in the advancement of knowledge. Turner (2006) offers a theory that takes mathematics as its model. He defines a set of premises from which he develops a series of corollaries and dilemmas. When combined with a small proportion of empirical observations, these propositions provide a statement of the domain of project management theory, its nature, governance, and functions. By taking this mathematical approach, Turner introduces a theory that works as follows: if the natures of projects are as defined, then certain consequences follow as a matter of logic.

One of the main weaknesses of normative theory in project management is that it treats failures according to the theory aberrations. It offers no reason why deviation has occurred, nor how to correct it other than to say, “Do it right next time” One could, suggest, therefore that knowing what normative theory prescribes is not enough to secure the right behaviour. In construction management research, a theory is needed that will help to understand the conditions and drivers that lead functional behaviour so that it can be influential in addressing the root causes of these failures. As Turner (2006) stated, theories that are descriptive in this way are often referred to as positive as opposed to normative.

One of the key questions that have occupied the research community is whether project management is a profession. As Turner noted, the answer seems to be at best “not yet.” He further claimed that, before it can become a profession it needs to be recognised as an academic discipline, and that has not yet been achieved. There are number of reasons blocking its recognition as an established academic discipline. One reason is that there is no second theory of project management. It is empirical knowledge rather than theoretical knowledge. Another reason is that it is not clear from the literature where it sits in the academic community. One could suggest that it
could sit in either the management faculty, the engineering faculty, the faculty of the built environment or the computer sciences faculty. From publications in the International Journal of Project Management (IJPM) and research carried out to date, it could be suggested that it sits in the faculty of built and environment. From the above, it can be observed that project management as an academic discipline is coming of age.

2.2.1 Previous research on Project Management

It is arguable whether project management is used consistently and generically. Results of work by Crawford (2002) have found variations in project management, knowledge, and practices between sectors, nations, and application areas. Due to the variation in understanding and application of project management, it is vital to understand which kinds of projects dominate the literature on project management. From the literature search, Crawford (2002) suggested that it is difficult to establish the conclusive distribution of project size or practice over industries, as responses to surveys are at times subject to sample bias. The influence of industry bias is observed by Evaristo and Van Fenema (1999 p.276) who note that the present knowledge based on the management of projects originates from large capital construction projects. In a second study, Betts and Lansley (1995) found that the most frequently addressed industry was construction, followed by papers covering information, service and the process industries. From the above review, it could be suggested that project management is heavily influenced by research originating from the construction industry. If, as Evaristo and Van Fenema (1999 p.270) have found, this sector represents only a small proportion of the total number of projects executed, then one could argue there is an associated risk that research findings may be unthinkingly and untenably transferred between industry sectors.

In order to understand fully the field of project management, it is imperative to understand how it has changed over time. Project management is regularly facing new challenges, as the tools, methods and approaches to management that are included in the discipline are applied to different areas, for different ends, in different cultures. As an emerging field, it is worth noting that project management continues to grow and has come along way from its origins in the 1950s, with academics and practitioners adding new insights into the already wide range practice options (PMI
2000). The literature reviewed, suggested that during the 1950s, the application of network analysis, and planning techniques, like PERT and CPM formed the focus of development in project management (Stretton 1994). Evidence shows (Stretton 1994) that in the 1960s Cost/Scheduling Control System Criteria (C/SCSC) gained popularity within the defence and aerospace industries. The developments in the field of project management in the 1960s and 1970s also included the introduction of two key profession associations: International Professional Managers Association (IPMA) and Association of Project Management (APM).

According to Stretton (1994) in the 1970s, the focus of project management research was on developing tools and techniques, particularly critical path analysis but also earned value analysis. In the 1980s, the focus was on success factors on projects, before choosing appropriate tools to manage the project. It required an understanding of factors that will influence success. In the 1990s, the focus switched to success criteria. Before appraising appropriate success factors, and hence appropriate tools, you need to know how the project will be judged successful at the end, and have the entire project team focusing on the same end objectives (Stretton 1994). This research led to a measured improvement in project performance with success rates doubling for one third of two thirds of projects. From the above, it is worth noting that the research of the last three decades of the twentieth century made an important contribution to project performance but it has not been enough as will be shown in the next section.

2.2.2 Recent changes of Project Management

The development in project management discussed in the preceding sections of this chapter, shows that changes in the practice of project management have continued at a steady pace. The rates at which new ideas are introduced to a field depend on a variety of factors. For example, Pascale (1990) linked variations in this rate to times of sagging fortunes and managerial panic. Whilst many would argue this is an important strategy, the introduction of new ideas to project management can also be linked to the emergence of new application areas and inclusion of new practitioners. As a result, a number of practitioners have introduced new perspectives and challenged existing patterns of project management. Consequently, Urli and Urli (2000) suggested that the field of project management has undergone very important
developments during the last ten years, which include the expansion of project management into new fields of practice. Evidence shows that, for the last fifteen years seven studies stand out as relevant to an analysis of trends in the field of project management.

Betts and Lansley (1988) analysed the first ten years worth of publications in IJPM Theristocleous and Wearne (2000), examined the frequency of project topics between 1984 and 1998. Zobel and Wearne (2000), concentrated on four project management conferences between 1996 and 1998. Morris et al (2000) documented the review of possible changes to the UK Association for Project Management Body of Knowledge. Morris et al (2000) further provided a description of contemporary project management studies by examining the popular topics in publications and book reviews from IJPM, PMJ, and PM Network between 1990 and 1999. Urli and Urli (2000), further examined tendencies for the association of keywords in all papers identified as relevant to project management in the electronic database ABI-INFORM, published from 1987-1996. Their study is unique, in that, it highlights the most significant themes as defined by academics rather than a priori classification. Finally, Kloppenborg and Opfer (2000), focussed on tendencies within the field of project management, looking for past, present and future trends. Table 2.2.2 provides a comparison that identifies trends in project management literature.
Table 2.2.2: Comparison of identified Trends in Project Management

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Table Key: An interest in the topic (√); A lack of interest in the topic area (×); An increasing interest in the topic area (††); A decreasing interest in the topic area (††)

Although the above studies examined different periods, using different methods the understanding of cultural complexity on these projects remains weak. An analysis of the seven studies, however, makes known some topics that are consistently regarded as significant. Topics that at least two of studies recognise as significant include: performance planning; risk; context / environment; information management; leadership; monitoring and control; project organisation and scheduling. In the remainder of this section, modern thinking on, and future directions for project management are discussed.
2.2.3 Modern thinking in Project Management

Organisational developments in recent years have been the significant emergence of project management across a number of industries and sectors. According to Whittington et al (1999), there has been an increase in new developments and new initiatives being pursued through projects and programmes. Recent industry reports, for example, (KPMG 2000) confirm the growing adoption of project management standards and practices across large numbers of organisations, including the launch of project management centres of excellence within a number of UK government departments (OPSR 2003). Despite the number of developments in practice, a number of authors highlighted that the current conceptual base of project management continues to attract disparagement for its lack of relevance to practice, and as a result, to improved performances of projects across a number of industrial sectors (Hobday 2000; Kloppenborg and Opfer 2000; Koskela and Howell 2002; Meredith 2002; Morris 1994).

A review of literature reveals that there is no single theoretical base from which to explain and guide the management of projects. There are instead a number of theoretical approaches, many of which overlap. According to Winter et al (2006), these operate both for individual aspects of project management (e.g. control, risk, leadership) and for the discipline as a whole. From the strands discussed, the most dominant strand of project management thinking is the rational, universal, deterministic model, which emphasises the planning and control dimensions of project management (Checkland 1989; Morris 2002; Winch 2004; Yeo 1993). It is that the first strand arrived at by critical path analysis and scheduling. It has however been criticised for failing to adequately deal with the emergent nature of front-end work. It tends to assume that all projects are the same, and in accounting for satisfactory human issues, which are often the most significant e.g. (Cooke-Davies 2004; Cicmil 2003). The second strand of thinking is more theoretically based and emerged in the late 1960s and 1970s from the literature on organisational design (Lawrence and Lorsch 1967). The third strand appeared in the 1980s. It is concerned, for example, with major projects (Morris and Hough 1987). These studies emphasised a wider view of projects, recognising the importance of the front-end and managing exogenous factors, as well as the more traditional execution focused endogenous ones.
As claimed by Williams (2002), issues facing both practitioners and researchers now seem to be well beyond the hard systems perspective so often related with project management. Morris (2000), for example, analysed papers in journals and book reviews published in the Project Management Journal, International Journal of Project Management, and the Project Management Network. Morris concluded that there is a need, fundamentally, to refine the subject and its research paradigm. Morris further suggested that there is a need to understand the linkages between project management and business performance, project managements’ generic responsibilities, and supply chain management. Morris also identified topics of increasing interest, which include integrated performance; metrics programme management, portfolio management and the front-end (focusing on issues such as governance, value management, project leadership, and project sponsorship). Examples of this latter research area include certification, maturity benchmarking and knowledge management. An emerging interest in typographical issues, which help categorise particular practices was also observed (Crawford 2002; Yeo 2000).

2.2.4 Future research on Project Management

In 2003, the UK’s Engineering and Physical Sciences and Research Council (EPSRC) funded a research network (Rethinking Project Management) to define a research agenda aimed at inspiring and broadening the field of project management beyond its current conceptual foundations. The proposed directions of project management discussed in this section are not meant to be the agenda for future research but one to inform people working in the field and those keen to develop new research in project management. As Winter et al (2006) notes, the principal finding of the Network was the need for new thinking in the areas of project complexity, social process, value creation, project conceptualisation and practitioner development. From the literature reviewed, the above-mentioned five research areas are not new to academics and experienced practitioners but this is not what the Network aimed to achieve. As illustrated in Table 2.2.5 the five directions shown are the key principal areas in which new ideas and approaches are needed. They will direct practitioners in the management of projects. To illustrate fully the different types of concepts and approaches that are required, the five directions are presented under three particular headings: theory about practice, theory for practice, and theory in practice.
2.2.5 Theories about Practice; Theories for Practice; and Theory in Practice

According to Winter et al (2006) 'theory about practice' is reference to theory that helps researchers to understand practice, although from a particular perspective which does not necessarily have immediate practical application. In the case of 'theory for practice' Winter et al suggested that this refers to concepts and approaches that do have practical application and in addition he revealed the three directions in which new thinking is required. From the three categories, the Network found that there was significant differences in theory and knowledge constructed on the basis of studying projects and project management processes as: pre-existing, given, before researchers become conscious of them; theory and knowledge which takes practice and emerges under specific conditions of power, structures, history and intentions of the actors in a specific local context and reflecting lived experience of practicing project managers.

In essence, the Network suggested that there needs to be much more emphasis on research focusing on concepts and theories closely reverberating with these realities so as to provide practitioners with practical concepts and approaches more in alignment with contemporary thinking. With the final heading, 'theory in practice' Winter et al stated that it covers how practitioners learn their craft and practice their craft using relevant theory from the already published literature. In summary, one could suggest that the third dimension is used to capture the emerging debate about skills, competencies, and practitioner development. As illustrated in Table 2.2.5, a 'from' position is highlighted for each direction, the dominant position (as we perceive it) and a 'towards' position representing the new direction of thought, vis-à-vis, a new direction for future research (Winter et al 2006).
Table 2.2.5: Directions for future research in project management
Source: Winter et al. 2006

<table>
<thead>
<tr>
<th>Theory ABOUT Practice</th>
<th>Direction 1</th>
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<tbody>
<tr>
<td><strong>The Lifecycle Model of Projects and PM</strong></td>
<td><strong>Theories of the Complexity of Projects</strong></td>
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<tr>
<td><strong>From:</strong> the simple lifecycle-based models of projects, as the dominant model of projects and project management. And <strong>from:</strong> the (often examined) assumption that the lifecycle model is (assumed to be) the actual ‘terrain’ (i.e. the actual reality ‘out there’ in the world).</td>
<td><strong>Towards:</strong> the development of new models and theories, which recognise and illuminate the complexity of projects and project management, at all levels. And <strong>towards:</strong> new models and theories which are explicitly presented as only partial theories of the complex ‘terrain’.</td>
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</table>

**Implication**

The need for multiple images to inform and guide action at all levels in the management of projects, rather than just the classical lifecycle model of project management, as the main guide to action (with all its codified knowledge and techniques). Note: theories ABOUT practice can also be used as theories FOR practice.

<table>
<thead>
<tr>
<th>Theory FOR Practice</th>
<th>Direction 2</th>
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<tr>
<td><strong>Projects as Instrumental Processes</strong></td>
<td><strong>Projects as Social Processes</strong></td>
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<tr>
<td><strong>From:</strong> the instrumental lifecycle image of projects as a linear sequence of tasks to be performed on an objective ‘out there’, using codified knowledge, procedures and techniques, and based on an image of projects as temporary apolitical production processes.</td>
<td><strong>Towards:</strong> concepts and images which focus on social interaction among people, illuminating the flux of events and human action, and the framing of projects (and the profession) within an array of social agenda, practices, stakeholder relations, politics and power.</td>
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**Direction 3**

<table>
<thead>
<tr>
<th><strong>Product Creation as the Prime Focus</strong></th>
<th><strong>Value Creation as the Prime Focus</strong></th>
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<tbody>
<tr>
<td><strong>From:</strong> concepts and methodologies, which focus on: product creation-the temporary production, development, or improvement of a physical product, system, or facility etc-and monitored and controlled against specification (quality) cost and time.</td>
<td><strong>Towards:</strong> concepts and frameworks, which focus on: value creation as the prime focus of projects, programmes, and portfolios. Note, however, ‘value’ and ‘benefit’ as having multiple meanings linked to different purposes: organisational and individual.</td>
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**Direction 4**

<table>
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<tr>
<th><strong>Narrow Conceptualisation of Projects</strong></th>
<th><strong>Broader Conceptualisation of Projects</strong></th>
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<tr>
<td><strong>From:</strong> concepts and methodologies which are based on the narrow conceptualisation that projects start from a well-defined objective ‘given’ at the start, and are named and framed around single disciplines e.g. IT projects, construction projects, HR projects etc.</td>
<td><strong>Towards:</strong> concepts and approaches which facilitate: broader and ongoing conceptualisation of projects as being multidisciplinary, having multiple purposes, not always pre-defined, but permeable, contestable and open to renegotiation throughout.</td>
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**Theory IN Practice**

<table>
<thead>
<tr>
<th><strong>Practitioners as Trained Technicians</strong></th>
<th><strong>Practitioners as Reflective Practitioners</strong></th>
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<td><strong>From:</strong> training and development which produces: practitioners who can follow detailed procedures and techniques, prescribed by project management methods and tools, which embody some or all of the ideas and assumptions of the ‘from’ parts of 1 to 4.</td>
<td><strong>Towards:</strong> learning and development which facilitates: the development of reflective practitioners who can learn, operate and adapt effectively in complex project environments, through experience, intuition and the pragmatic application of theory in practice.</td>
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</table>
From Table 2.2.5, it can be asserted that the clearest pattern observed from all the practitioner inputs to the network is total complexity of projects and programmes across all industries at all levels. It includes all manner of aspects, such as, including an array of stakeholders, the different agendas, theories, practices, and discourses operating at different levels within different groups, in the ever-changing fluctuation of events. Therefore, there is a need to introduce new theories about actual project management practice, which would recognise and clarify the complexity of projects and project management. A second pattern that emerges from the network is the need to introduce new theories for practice, which would include new images, concepts, frameworks, and approaches to help practitioners deal with complexity in the midst of practice. From the above table it is concluded that as well as the need for new theories 'about' and 'for' practice, future research in the field needs also to focus on the area of theory 'in' practice, that is, the actual application of theory in the midst of action.

Table 2.2.5, shows that the aim of the network was to contribute to the enrichment of the field beyond its current intellectual foundations so reflecting the need to re-examine in a constructive way the relationship between project management research and the field to which it is applied in industry. One of the key aims was to examine how existing theories, concepts, and methodologies underpinning project management could be developed and extended to enhance the relevance of the knowledge generated in the research process for practical action in project environments. As illustrated in Table 2.2.5, two important implications for research arise. Directions 1-5 mirror the concerns of practitioners in the following areas: project complexity, social process, value creation, project conceptualisation, and practitioner development. In addition, directions 1-5 highlight the need for an interdisciplinary application to conceptualise and theorise project management practice and a cautious consideration of the methodological issues by academics in order to facilitate the creation of knowledge professed as useful by practicing senior managers in organisations and projects.

Evidence from the above literature strongly suggests that industrialised nations (e.g. the UK) have made a remarkable improvement in the management of projects. The UK construction sector now operates throughout the world. As the domestic market
has matured emerging economies have come to offer more opportunities, so much so that about half of UK all contracts are now carried out overseas. It, therefore, could be argued that due to a lack of investment in research, it has become difficult for construction firms in Kenya to solve their problems more effectively and efficiently. The above literature review suggests that research on project management in Kenya is scant. The evidence is convincing that there was a need for this research to be carried out. In order to facilitate improvements in Kenya, this study reviewed existing strategies on cultural complexity. A review of the Kenyan and the UK construction industry is discussed in the following section.

2.3 KENYA

Kenya lies across the equator on the East coast of Africa as shown in Figure 2.3. From the map, it can be observed that it borders Somalia, Ethiopia, and Sudan to the North, Uganda to the West, Tanzania to the South and the Indian Ocean to the East.

![Figure 2.3: Map of Kenya](Source: www.Reliefonline.org/Kenya/Kenya_map.htm (2007))
Kenya was a British colony and protectorate from the 1890s until independence in December 1963 (PER 2004). The country's first president was Jomo Kenyatta. He was also the leader of the ruling party, the Kenya African National Union (KANU). He set Kenya into a single party state. The party has maintained its political dominance. After his death in 1978, Daniel Arap Moi, who remained in office for twenty-five years, succeeded President Kenyatta. Between 1982 and 1992, Kenya became a de facto one party nation even when more parties were invited to participate on the political scene due to domestic and foreign pressure on the government. President Moi led the ruling party to election victories in 1992 and 1997. Kenya is currently on its third presidency since independence. The current parliament, which came into power in 2002, devised a strategy for development on three major economic fronts.

- to gain a fast overall growth rate;
- to ensure that the benefits of development are distributed; and
- to undertake the Kenyanisation of the economy.

Kenya's current development status could be viewed in light of its post independence history. Kenya used to have one of the most prosperous economies in East Africa but due to government mismanagement and corruption this has led to an erosion of it's former pre-eminence (www.worldbank.org/kenya 2007). Since 2003, the new government's reform efforts have brought a return to economic growth and have made some inroads against corruption (www.worldbank.org/kenya 2007), however, recent events have caused much of the Kenyan public, and the international community to question the depth of progress made. From independence in 1964 to 1980, the average GDP growth rates of six point five percent reflected the pragmatic policies of Kenya’s founding President Jomo Kenyatta. During much of this period, the Kenyan public witnessed a buoyant economy, international community support, investor confidence thrived and communities contributed in cash and the co-operative movement allowed small-scale farmers to participate in the formal economy. The results were impressive. Agriculture thrived through a relatively open and export oriented trading system that also gave pre-eminence to the development of a smallholder sector that produced both food crops and major export commodities.
In the strategy, key policy actions necessary to spur the recovery of the Kenyan economy as identified by its ministry of planning and development included:

- rapid economic growth that is going to be required over the next four years in an environment of macro economic stability;
- strengthening of institutions of governance;
- rehabilitation and expansion of physical infrastructure;
- investment in the human capital of the poor; and
- to improve the enabling environment for business (PER 2004).

The first survey by the ministry of planning and national development in 2004, showed a sharp deterioration in economic performance. The major challenges that face the government was to restore economic growth, generate employment opportunities and to absorb the large army of unemployed, particularly the youth and reduce poverty levels. Project management remains the crux in economic development. From the literature (PER 2004), it has been suggested that interventions in industrialisation will be built around an industrial master plan, which will lay the groundwork for the first phase of Kenya’s industrialisation strategy and restore the sector onto a path of rapid growth. This would allow the construction sector to identify continually points of inflexion in the markets in which they are involved and continually make strategic adjustments to maintain competitive advantage. Given the critical importance of project teams, this study looked into both investments in human capital and improvements for construction organisations.

Kenya continues to have big stocks of incomplete construction projects (two hundred and seven stalled projects in 2003) on which more than Kshs 13 billion has been spent and an equivalent amount is needed to complete them (PER 2004). The government adopted a policy to drop some of these projects and to complete the rest over a period. According to Nzoika (2006), thirty-three projects have been completed or nearing completion. The total cost of the policy, which started last year and is expected to be completed in 2008 is Ksh 12 billion. As suggested by Nzoika (2006), a plan of action shows that about 1.7 billion has been allocated to the projects this financial year while the bulk of the money about Ksh 5.3 billion will be set aside for the work in the
2006/7 financial year. Some of the Kshs 3.7 billion will be spent in the 2007/8 financial year to complete the final phase, bringing the total cost to Kshs 10.7 billion. This leaves a shortfall of Ksh 1.3 billion about which the plan is silent. The plan further indicates that most of the contracts have been awarded with specific schedules on when the work starts and ends. About nine projects are at the documentation stage, which involve quantifying the work before contract documents are prepared, while about sixty-two are the pre-planning stage. This research leaves open the possibility that some of the reasons, which might have led to the above, are due to poor strategic vision and project management. With a lack of empirical evidence, in this area, this study explored and analysed project complexity in Kenya.

2.3.1 Society
The population of Kenya based on a May 2007 estimate is thirty million. It comprises of about forty-two ethnic groups, the major clusters being the Kikuyu, twenty-two percent; Luhya, fourteen percent; Luo, thirteen percent; Kalenjin, twelve percent; Kamba, eleven percent; other Africans, thirteen percent; and non-African, mainly Asians and Europeans (www.worldbank.org/kenya2007). In 1963, the various ethnic groups were at different levels of development. The most educated and entrepreneurial at the time of independence took much greater advantage of the opportunities that independence provided to the point where, by 1975, less advantaged ethnic groups felt that the benefits of growth were not being shared equitably. Today ethnicity, power, and economic opportunity have become intricately intertwined (PER 2004 and www.worldbank.org/kenya 2007). In addition, during the first decade after independence, Kenya experienced the fastest natural population growth in the world, averaging four point one percent. This was in part because of a dramatic decline in child mortality and in part because of increased security after many years of pre-independence civil unrest. During the years of plenty, economic policies were not far-sighted enough to anticipate the stress that such a high population growth would place on the system.

2.3.2 Socio-Economic Development
It has been observed from the literature that (PER 2004), Kenya's overall economic performance has deteriorated since the mid-70s and worsened markedly in the 1990s. This was mainly because of inefficient use of public resources (wage bills rose while
spending on social services and infrastructure dropped), soaring costs of doing business, loss of economic competitiveness, deteriorating security conditions, and loss of donor funding. Average GDP growth declined from about seven percent in the 1970s to just over two percent during the 1990s, falling below the average population growth rate of two point six percent. As discussed in the public expenditure review report (PER 2004), the public sector underwent an expansion and growth in employment. However, wages did not keep pace, and many government officials supplemented their income by misappropriating and misdirecting government services. Corruption has further been exacerbated by ethnic patronage, whereby the ruling party used government resources to maximise political support (www.worldbank.org/kenya 2007). It is worth noting that by the 1990s, the gains achieved in the first two decades had disappeared. Primary education enrolment rates fell to eighty-two percent by 1995 after peaking at ninety-one percent in 1989. The HIV/AIDS epidemic eroded gains made in health indicators. The infant mortality rate (per 1000 births) went up from sixty-two to seventy-eight, primary enrolment went down from ninety-five percent to ninety point seven percent, and life expectancy declined from fifty-seven to forty-seven years. The health status of Kenya has deteriorated. AIDS is now one of the major causes of death in the country, almost equaling malaria, tuberculosis, diarrhoea diseases, and pneumonia. The challenges confronting the country healthcare are:

- removing barriers to healthcare delivery;
- providing adequate healthcare funding, with better management;
- providing human resources development, re-orientation and the retention of trained staff;
- promotion of workplace health, safety-prevention of work-related accidents, prevention occupational diseases, and health promotion in small and medium size organisations; and
- addressing the HIV/AIDS pandemic and its impact on the productive workforce in all sectors of the economy (PER 2004).

Kenya’s growth performance improved during the first half of the 2000s. From extremely low average growth during most of the 1990s to 2001-2002, GDP growth
reached for point three percent in 2004 and exceeded five percent in 2005. During the last five years, growth has been driven by the agriculture and service sectors, particularly horticulture, tea, and coffee in the former sector, and telecommunications and tourism in the latter. In addition, the export of flowers, fruits and vegetables, mainly to Europe, became the top Kenyan agricultural activity, displacing exports of traditional products, such as coffee and tea. A rebound in construction during the last two years driven by private lending and to some extent government spending on construction activities has helped the secondary sector to grow. Also contributing to the recovery is that more investors are reporting that, unlike the pre-2003 period, they can now do business without political interference (PER 2004).

It is suggested (ROK 2002-2008; www.worldbank.org/kenya 2007), that several structural constraints in the economy stop Kenya from achieving its full potential. A recent report (ROK 2002-2008) on the trade and investment climate suggests that access to markets has not been the main constraint on Kenya’s growth. Instead, it is behind-the-border constraints, such as cost of insecurity, corruption, heavy regulatory burdens, cost of infrastructure services, and a weak legal, and judicial framework that make Kenyan firms less competitive in the global market. As discussed in previous paragraphs, corruption and government ineffectiveness together with crime and deteriorating infrastructure especially power, roads, rail, and ports act as principal investment deterrents. If more ambitious and decisive reforms are applied and coupled with a shift in government expenditure towards investment in infrastructure, it might improve the prospects for regaining the high growth levels achieved during the 1970s (i.e. eight percent). Strategies used can include financial sector reforms, particularly aimed at plugging loopholes that allow capital laundering and improving efficiency and access, rehabilitation of infrastructure, continued liberalisation of the telecommunications sector, significantly accelerated privatisation (including increased private sector participation in areas such as container handling at the ports), and lightening the regulatory burden.

According to the Central Bank of Kenya CBK (2006), the overall inflation rate (yearly) increased from seven point six percent in December 2005 to fifteen point four percent in January 2006; this was because of a steep rise in food prices caused by food shortages after the severe drought conditions in most parts of the country. When food
is excluded from the CPI basket, the month on month underlying inflation rate declined from six per cent to five point five percent implying continued prudence in macroeconomic and monetary management on the part of the Central Bank of Kenya (CBK) (2006). The bank suggested that inflation during 2005 was around ten percent because of increasing food and energy prices; the average inflation declined in 2006 with a reduction in food inflation following favourable rains. On the external front, exports have surged over the past two years on the strength of tea and horticultural exports; however, it is imperative to note that the current account deficit has increased due to larger imports of machinery and transport equipment as well as oil imports. The Kenyan Shilling has remained strong against all major currencies. Foreign exchange reserves at the end of 2005 covered three point three months of imports. The reserves are expected to remain stable at around three point five months of imports in 2006. The fiscal year 2005/06 ended with a budget deficit of about three point five percent of GDP, which was in line with the Fund programme’s target. Revenue performance was strong at about twenty-one point five percent of GDP, helped by improved tax administration. Revenues are expected to remain around twenty-one percent of GDP in 2006/07. Total government expenditure has been on an upward trend due to increased spending on health and infrastructure sectors and is expected to be around twenty-six percent of GDP in 2006/07 (CBK 2006). The coalition government (ODM/PNU) is in the process of implementing a results-based management system as a tool for helping public sector organisations focus on results, plan strategically, and demonstrate the contribution made by each organisation to development. The following section looks into the construction sector in Kenya.

2.4 CONSTRUCTION IN KENYA

Kenya is a country where construction projects are often beset with severe problems. The construction industry in Kenya may be growing but is obviously not developing. As will be discussed in this section, the construction industry in Kenya is plagued by severe problems that permeate most of the industry from initial feasibility and design through to cost management and construction. This research outlines the Kenyan construction industry, primarily to determine the extent and severity of the industry problems. In 1972, the International Labour Organisation to Kenya (ILO 1972) distinguished construction activities carried out in Kenya as formal and informal based on the characteristics of enterprise rather than employment situations.
According to the ILO (1972), informal sector enterprises were characterised by small scale, unregulated and competitive markets, ease of entry, skills acquired outside of the formal education system, labour intensive technologies, reliance on indigenous resources and family ownership. As observed by the ILO, formal sector enterprises have the opposite characteristics.

In practice many of the criteria discussed are not easy to assess, so that in most informal sector surveys the size of an establishment is taken as the only yardstick for inclusion, with the cut off point being either five or ten employees. The factors underlying the growth of the formal and informal economies are complex and interwoven. In construction, they are particularly difficult to disentangle. However, two separate but relate developments can be detected, and these are discussed below.

### 2.4.1 Recent developments in the construction sector

The volume and composition of construction output in Kenya has seen significant changes since the 90s. According to Mitullah and Wachira (2003), the contribution of the construction industry to GDP declined from six point five percent in the 80's to four point nine percent in 1990 to four percent in 1999. This was mainly because of a reflection of the decline in both the public sector investment in construction and the harsh economic conditions prevailing in the country. This decline in construction output is expected to continue until the economy recovers. The composition of construction output in Kenya has also changed. Results of work by the Republic of Kenya (ROK) Economic Survey (2000) suggested that the structured Adjustment Programme (SAPs) which began in the late 80s was heavily shortened as part of the austerity measures needed by donors. The above measures heavily affected investment in buildings, as suggested by Nzoika (2006). According to Nzoika, numerous stalled projects that have remained unfinished for over ten years are due to mismanagement and investment having been shortened. A review of the literature reveals that the public sector is no longer a major client in the building sub-sector. It has been observed in the Economic Survey (2000) that repairs and maintenance have also been affected, with minimal public works tenders being awarded for these tasks. On this basis, it was found that private sector clients now dominate the building construction market. This suggests that by 1999, the private sector accounted for
more than ninety percent of building construction output as demonstrated in Table 2.4.1.

Table 2.4.1: Breakdown of construction output in Kenya
Output K£M (1Kshs.20; 1US$=Kshs.78)


<table>
<thead>
<tr>
<th>Year</th>
<th>Residential</th>
<th>Non-residential</th>
<th>Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>1980</td>
<td>26.24</td>
<td>75.11</td>
<td>7.55</td>
</tr>
<tr>
<td>1981</td>
<td>49.95</td>
<td>87.31</td>
<td>3.72</td>
</tr>
<tr>
<td>1982</td>
<td>39.87</td>
<td>97.57</td>
<td>5</td>
</tr>
<tr>
<td>1983</td>
<td>28.25</td>
<td>97.57</td>
<td>9.05</td>
</tr>
<tr>
<td>1984</td>
<td>11.08</td>
<td>86.04</td>
<td>12.59</td>
</tr>
<tr>
<td>1985</td>
<td>26.57</td>
<td>72.37</td>
<td>0.33</td>
</tr>
<tr>
<td>1986</td>
<td>21.8</td>
<td>69.35</td>
<td>2.97</td>
</tr>
<tr>
<td>1987</td>
<td>33.49</td>
<td>65.94</td>
<td>1.65</td>
</tr>
<tr>
<td>1988</td>
<td>40.74</td>
<td>92.52</td>
<td>2.31</td>
</tr>
<tr>
<td>1989</td>
<td>40.38</td>
<td>131.58</td>
<td>1.98</td>
</tr>
<tr>
<td>1990</td>
<td>66.02</td>
<td>122.47</td>
<td>2.97</td>
</tr>
<tr>
<td>1991</td>
<td>63.52</td>
<td>115.49</td>
<td>2.89</td>
</tr>
<tr>
<td>1992</td>
<td>62.78</td>
<td>112.28</td>
<td>2.73</td>
</tr>
<tr>
<td>1993</td>
<td>50.5</td>
<td>140.5</td>
<td>2.46</td>
</tr>
<tr>
<td>1994</td>
<td>56.97</td>
<td>214.26</td>
<td>2.21</td>
</tr>
<tr>
<td>1995</td>
<td>66.21</td>
<td>380.31</td>
<td>2.19</td>
</tr>
<tr>
<td>1996</td>
<td>73.27</td>
<td>375.99</td>
<td>1.68</td>
</tr>
<tr>
<td>1997</td>
<td>80.51</td>
<td>379.8</td>
<td>1.66</td>
</tr>
<tr>
<td>1998</td>
<td>76.5</td>
<td>389.56</td>
<td>1.25</td>
</tr>
<tr>
<td>1999</td>
<td>63.75</td>
<td>611.81</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Investment in private residential building was twice as important, in value terms, as non-residential buildings. As reflected in Table 2.4.1, financial sector funding for private construction continued to grow steadily from 1995 to reach an all time high of K£M 918.15 in 1999. One could assert that this growth would have been higher had interest rates not risen sharply as the economy slowed during the 90’s (ROK, Economic Survey 2000). The public sector has continued to predominate investment in the engineering sub-sector and for civil engineering projects such as roads the government is the only investor. Due to the introduction of the Road Levy Fund, investment in road construction and maintenance has continued to grow. Funding, for roads further increased in 1995 when both the World Bank and the International Monetary Fund (IMF) set aside funds for the repair of roads destroyed by the El Nino
rains (ROK, Economic Survey 1996). From the above, it is clear that if any change is to be introduced then the building construction industry and the private sector will have to be in the forefront. This is a major shift from the past where the public sector was seen as the most imperative and biggest in both sectors of the industry.

The literature highlights that private sector clients are very diverse and in Kenya, they mainly invest in construction through an informal system. This has shifted the focus of the sector to informal construction, which has maximised an interest in studying how the informal system operates, its role in poverty reduction and economic development (ROK, Economic Survey 1996). The following section explores the informal economy, and in particular, the informal construction industry.

2.4.2 Overview of the informal economy

It has been claimed in the ROK, Economic Survey (2000) that the informal sector provides low-cost goods and services that are affordable to both the low and middle-income citizens who cannot afford to pay high prices. Intense competition keeps prices at low levels. It is an important and growing part of the overall economy in most developing nations. According to Enrique Ghersi (1997) in Peru, the sector accounts for thirty-eight percent of GDP and sixty percent of all person-hours worked and its development is viewed as nothing short of revolutionary. The informal sector in Kenya has been growing faster than the formal sector and as a result provides more opportunities for employment (ROK et al 1999). The literature reviewed shows, that in 1999 the sector comprised 1,289,012 micro and small enterprises (MSEs) contributing eighteen point four percent to GDP and involving up to three point seven million persons (ROK et al 1999). The number of workers involved in the informal sector rose to four point two million in the year 2000 representing an annual growth rate of eleven percent. In aggregate terms, urban areas take the greatest number of MSE workers i.e. nearly two-thirds of the total MSE workers, which represents nearly two-thirds of the total MSE sector employment (ROK, Economic Survey, 2001). For example, Nairobi alone accounted for nearly a quarter (24.06 percent) of the total employment in the sector.

The literature reviewed in this section suggests that the informal sector of the economy is traditionally held to have a number of distinct characteristics, which
include ease of entry, predominance of self-employment, labour intrusive production methods, low levels of organisation, low productivity, and income (ILO 1972; ROK et al 1999; Wells 2000). Persons working within the sector work in an environment of uncertainty. Mullei and Bokea (1999) stated that the informal sector is highly flexible and entrepreneurs can quickly change their activities to respond to particular market needs. The conventional belief that entry into the informal sector is easy is now being challenged. Results of work by (Graham et al 1998; McCormick et al 2001) showed that the educational background of those operating within the sector has improved. It has been observed that, in some sub sectors education is used in vetting new entrants, and the assumption that anybody can join the sector at any time is no longer valid. In a number of sub-sectors, those wishing to join have to have the right networks relevant for linking the individual to the resources needed and site of operation. The assumption that there are no restrictions, rates, requirements, or regulations for entry into the informal sector to some extent may be due to ignorance of the dynamics of the sector. In the early 90s, research focusing on both social capital and institutions has shown that the sector has its own regulations and dynamics, including norms and rates of behaviour and operation. Organisations operating within the informal sector have their own self-regulatory mechanisms, albeit informal ones (K'Obonyo et al 1999; North 1990).

It is worth noting that non-compliance with government officials and administrative requirements, such as payments of taxes and registration, is a further characteristic of the informal economy Wachira and Mitullah (2003). A number of businesses operating within the informal economy are not registered with the government, mainly because their owners have concluded that the registration process is not only cumbersome but also devoid of any significant benefit. By not registering, a number of businesses aim to escape the manipulation of government officials and avoid paying tax. This, however, has always been found to backfire because they are more liable to be manipulated by tax officials. Results of work by K'Obonyo et al (1999), suggest that unregistered firms pay more to public officers than those that are registered. The payments are in the form of bribes that do not end up in the public coffers but in individual officer's pockets.
A study carried out by Graham et al (1998), showed that most organisations operating within the informal economy are willing to pay taxes but appropriate schedules of payment need to be implemented. Organisations find it hard to build up the lump-sum payment needed by authorities, but they are willing to pay the required fees in instalments. There is a suggestion that, the informal sector in Kenya continues to absorb a large number of the unemployed who cannot find employment opportunities within the formal sector. Mullei and Bokea (1999) highlighted that the informal sector does not guarantee long-term security and employment, partly due to the uncertainty in access to markets and clients. Currently, the situation has become worse as the rate of unemployment continues to grow with deteriorating economic performance. The sector is mainly dominated by small-scale economic activities largely of self-employed persons. Most enterprises are owned and operated by individuals but some employ only a few people. Organisation size is limited by lack of access to financial support, poor management, intense competition, and poor marketing strategies (Mullei and Bokea 1999). In addition, manufacturing enterprises in particular experience low productivity and capital due to poor technology implementation and management. Interestingly, small organisations rarely graduate into medium or large-scale enterprises.

Other simulations show that entrepreneurs operating within the informal economy have been striving to organise in order to access different forms of resources (Mullei and Bokea 1999). Literature contains little evidence, in the form of research studies on entrepreneurs operating within the sector. Mullei and Bokea (1999) further highlighted that, the sector was previously noted to have low levels of organisation with little entry to organised markets, formal credit, and education/training. This has changed due to many civil society organisations providing different forms of assistance. However much remains to be done by those operating within the informal economy themselves, and the aid agencies that assist them. In this respect, there is a need to streamline the operations of the sector and lobby for its interests in the private and public sector-forums.

2.4.3 Informal Construction Sector

According to Mlinga and Wells (2002), the informal construction sector comprises of unregistered and unprotected individuals and small enterprises that supply labour and
contribute in other ways to the output of the construction sector. Both the small enterprises and these individuals are mainly involved in housing and building construction activities. In addition, it is now recognised that they also supply labour to contractors involved in large projects in other sections of the industry. Very relevant to construction research is the new and expanded concept of an "informal employment" as conceptualised by ILO (2002) and WIEGO (2002). According to WIEGO (2002), informal employment could be defined as employment without secure contracts, worker benefits, or social protection. It encompasses two basic components that are self-employment in informal enterprises and paid employment in informal employment relations. The self-employed, in turn, do include two basic groups: micro entrepreneurs or employers who hire others and own account workers who do not hire others. This gives priority in defining informality to employment status rather than, as in previous definitions, to enterprise characteristics. WIEGO (2002) further claims that as opposed to the earlier thought, the informal entrepreneurs are not avoiding formality, specifically registration and taxation. The employer is the one who attempts to avoid payroll taxes, legal obligations and other contributions. As WIEGO (2002), stated many informal workers would prefer being formalised if doing so guaranteed secure contracts, worker benefits, social protection, and the right to organise and to be represented. The literature contains little evidence; therefore, one could argue that this scenario is particularly valid in the construction industry where employers around the world have split up their directly employed workforces in favour of "outsourcing" labour through subcontractors (ILO 2001).

In most developing countries, especially in Africa, one could argue that it has been established that the informal construction sector has been growing rapidly. As Wells (2001) stated, the pace has been fast, especially during depressed economic times when building owners often start with simple structures to provide basic shelter and then improve the structure as time and finance allows. The work is done by both individuals and small organisations that are able to adapt to the unpredictable requirements of clients, including stopping work whenever funds are not available. A large percentage of this type of construction is residential, while others are commercial developments. Procurement of work mainly comprises informal verbal relationships and agreements. This scenario, which Wells (2001) described as the
"informal contribution system" is prevalent in a number of developing countries, including Mexico (Herbert and Pickering 1997).

There is a suggestion that much of the activity in the informal construction system (but not all) takes place without planning permission. Houses are built without building permits and quite often without legal title to the land. It has been observed that a significant proportion of buildings or houses in Kenya are constructed in "informal settlements". In these settlements, there are no clear titles to land, no land set aside for public utilities such as schools, parks or transportation corridors, and no urban infrastructure such as water sewerage, electricity or paved roads (Wachira and Mitullah 2003).

2.4.4 Characteristics of informal Construction in Kenya

The Kenyan construction sector comprises enterprises of various sizes, owned by different ethnic groups. Kenyans of foreign, mostly Asian origin still dominate the sector. Evidence shows (Kinyanjui and Mitullah 1999) that, although Asian owned organisations may be regarded as local, they have potential access to capital outside the official banking system in Kenya and also to bank loans at fair interest rates and remission, which permits their businesses to thrive and operate in the informal system. By comparison, Coludhe (1990) argued that most indigenous Kenyans own small firms, which largely operate within the informal construction system. These firms only carry out small jobs. The dynamics within the informal construction system differ significantly from the formal conventional system. As a result, the formal construction sector does have clients that have access to capital funds and are able to pay the builder on demand. The sector also comprises professionals including quantity surveyors, architects, and engineers who oversee the design and construction of a project and act as intermediaries between clients and the project team. Within the same environment, contractors usually are responsible for the construction and completion of the projects within a specified time, cost, and quality. There is also a formal agreement that highlights responsibilities and a legal obligation of each of the project teams that is enforceable by law.

The literature reviewed above shows that the scenario within the informal construction system is quite different. Wachira (2001) and Wells (2001) argued that
client's access to capital funds for projects is highly unpredictable. It is highly unlikely that construction time is known and projects often experience a number of stops and restarts depending on the availability of capital. For example, a project for the construction of a five-bedroom house may take up to six years. In a number of cases, the buildings are designed as work begins and no professionals supervise the projects. In some cases, the design may be by a professional or by a draughtsman, but when it gets to the construction phase; they are not consulted since most clients deem their charges too expensive.

A number of buildings are constructed with no consideration of existing laws, insurance cover, and other legal requirements. The majority of the owners of developments do not submit their building plans together with their proof of title to the land to local planning authorities. Since this is the criterion applied for documenting construction work, it creates a gap between the recorded statistics and actual construction. Wells (2001) has illustrated the extent of unplanned construction in the urban areas of Kenya in the 1990s by comparing trends in the recorded building activity and cement consumption. The very significant gap is attributed to unrecorded construction activity. Results of government data shows that between 1995 and 1999, the informal private construction sector made a significant contribution to GDP and employment in Kenya as shown in Table 2.4.4.

Table 2.4.4: Contribution of the informal construction sector

Source: Government of Kenya, Economic Surveys

1996 to 2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Informal construction contribution to GDP</th>
<th>Employment in informal construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>1.7%</td>
<td>31,600</td>
</tr>
<tr>
<td>1996</td>
<td>1.6%</td>
<td>36,000</td>
</tr>
<tr>
<td>1997</td>
<td>1.6%</td>
<td>40,700</td>
</tr>
<tr>
<td>1998</td>
<td>1.6%</td>
<td>51,200</td>
</tr>
<tr>
<td>1999</td>
<td>1.6%</td>
<td>58,900</td>
</tr>
</tbody>
</table>

The above figures are almost certainly under estimates (ROK, Economic Survey 2000). Preliminary work from this research shows that individuals are introducing a
number of buildings for the low- and middle-income bracket, who have a basic capital amount, in an incremental manner. Such buildings are situated in semi-urban areas. The value of such buildings completed each year cannot be easily quantified. In a number of cases, the owners of buildings buy the materials for construction at various stages and employ tradesmen to act as the supervisors and oversee construction. In some projects, clients hire unskilled workers and tradesmen on a daily basis depending on the current work of the project. Cost control is usually left to the owner who purchases the materials and negotiates daily wages with the workforce.

According to Mitullah and Kinyanjui (1999), small-unregistered firms develop these types of buildings. The lack of registration with the Ministry of Public Works and Housing or the Registrar of Societies means that such firms lack credibility and necessary support, especially from the government. This means that the firms cannot bid for government contractors and other formal contracts or access credit. It seems that the organisations ignore registration due to their limited access to funding and operation base. This denies them opportunities for support, co-ordination, and networks that are required for improving their business. The situation has been worsened by the fact that a significant number of construction organisations do not belong to associations. These organisations struggle on their own and some owners offer themselves as employees to other medium and larger firms when they cannot get jobs.

The above review, suggest that the informal workforce lacks any significant degree of social protection mainly in terms of the entitlement of a minimum wage and other terms of employment such as leave, housing, health and safety regulations, as well as workmen’s compensation. A large proportion of the workers are hired as casual labourers and work under dangerous and difficult conditions with no benefits (Kinyanjui and Mitullah, 1999). This is because the workers are not covered under Trade Disputes Act (ROK 1991), Factories Act (1988) or the Workmen’s Compensation Act (ROK, 1972) which regulates labour and related issues. As a result, there are no formal contractual agreements and the owners handle legal issues with no recourse to the workers. At the same time, the owner bears all the risks that might ensue.
2.4.5 Policy issues relating to informal work

The Sessional Paper No.1 of 1986 on Economic Management for Renewal Growth, Sessional Paper No.2 of 1992 on small scale enterprises and sessional paper No.2 1996 on industrial transformation to the year 2020; the Kenyan government recognises the role of (MSEs) in economic development and the need to support the sector. On the technological front, programmes to boost the technological capability of MSEs have been introduced by technical training institutes, national universities, and non-government organisations. According to Mitullah and Odek (2002), about forty-one technical institutes train artisans as technicians offering different levels of qualifications. However, the transfer and diffusion of technology is still hampered by a mismatch between supply and demand for technology, inadequate funding for technology developments and underdeveloped investment capacities, and learning mechanisms.

Consequently, areas of concern in informal construction work include health and safety, skills and training, terms of employment, tools, equipment, and working conditions. Results of work by ROK, ICEG and K-REP (1999) showed that informal construction workers highlighted training as their most pressing need. They suggested that training should include development of entrepreneurial business management skills. Recent research by Kinyanjui and Mitullah (1999) showed that a large percentage of workers operating within the informal construction sector are trained through apprenticeship. Evidence shows that workers within the construction industry were trained in both formal and (fifty percent) and informal (fifty percent) institutions, the latter being mainly through apprenticeship (Kinyanjui and Mitullah 1999). In most informal construction sites, new individuals are taken on as apprentices and attached to experienced tradesmen in their areas of interest. The new workers start as unskilled and over time and after working closely with the skilled workers their knowledge and practice increases until they acquire the requisite level of skills.

As suggested by Mlinga and Wells (2002), the most experienced tradesmen are known to have acquired skills and experience in the formal sector. The formal sector is able to apply new skills, technology, and materials mainly because they have professionals who are in touch with the changing technology in the construction
world. Mlinga and Wells (2002) have illustrated how the movement of workers between informal and formal employment in the construction industry in Tanzania has helped to transfer skills to the informal sector. An interesting question for this study was to assess whether or not similar movement is occurring in Kenya. According to Shah (1998), the government of Kenya, in an effort to encourage training in various trades introduced the Industrial Training Act. It required all construction projects worth more than Kshs. 50,000,00 (US$ 641) to pay one quarter of one percent of the contract sum as a training levy (Industrial Training Act 1983). Money generated from this source was supposed to be used to train workers in the construction industry. As claimed by Shah (1998), informal construction enterprises or workers do not pay such monies mainly because their projects are not registered and they do not have formal contractual agreements.

As a result, workers in the informal sector are not able to take advantage of this fund to develop their skills. It is worth noting that since the informal sector is believed to be the largest employer in the construction industry, their lack of access to these funds has resulted in the funds hardly being used. As Shah (1998) stated, by 1998 the account had credit in excess of US$ 853,544. The need for training in the informal construction sector, the type of training required, and the method of delivery are main issues requiring research. The pressing economic situation in Kenya, as in a number of developing countries, has pushed many citizens into the informal sector. This has made the sector the largest employer of labour. However, the workers have no regular hours of work, secure contracts, mandated benefits and they work in unsafe conditions. This calls for the introduction of new policies for informal labour with a clear outline of working relations, conditions, and benefits.

2.5 OVERVIEW OF THE FORMAL ECONOMY

Construction remains an integral part of Kenyan development strategies both in the colonial and post-colonial periods (ROK, 1966). In addition, it is seen not only as a mechanism for diversifying the economy but also as a dynamic engine for sustained accelerated economic growth, especially in the post independence period. From the government publication (National Development 1997-2000), it has been suggested that the emphasis is on the development of the construction sector for a stable and sustainable growth during the twenty first century. The country intends to achieve the
status of a new industrialised country by the year 2020 (ROK 1997-2000). Though Kenya inherited a relatively well established construction sector, the sectors overall performance has been rather poor for most of the post-independence period with the exception of the period between 1963 and 1972 when it registered an annual average growth rate of above ten percent.

The objectives of industrialisation include diversification of the economy, generating employment, and conversion of foreign exchange. Though Kenya has remained politically stable for most of the post-independence period, it has been shown from the literature (PER 2004) that there have been internal political dynamics with implications for the choice and implementation of project management strategies in the country. This has undermined some of its policies and strategic adjustments for construction. Arguably, the policy-making environment in any nation is determined largely by the kind of political set-up that a nation has in place, including the legal and institutional mechanisms established to guide the strategic process. The construction process in Kenya has been influenced by a number of factors including the country’s colonial history, resource endowments, regional economic relations, foreign investor and donor perceptions, the prevailing socio-economic environment as well as the general political environment. In Kenya, and indeed, in other developing nations, there is need to question not only the context and content of government strategy in relation to the construction process but also the strategic formulation capacity that defines the scope and effectiveness of the current project delivery process. This research addressed the above by focusing on the importance of team integration on heavy engineering construction projects in Kenya.

In the current construction process performance, the drivers are as exciting as they are worrisome, as a group, developing nations (e.g. South Africa) are doing fairly well on almost all measures of performance (CIDB 2004). They are maximising their share of global production and exports. They are moving up the technological ladder, enlarging their base of human capital, deepening their technological activity and attracting larger portions of mobile resources. The challenge for construction firms in developing countries is to narrow the gap and to raise their overall performance. Yet the picture is worrying for Kenya because industrial performance and its drivers are diverging rather than converging. Much of the divergence appears to be a long-term
phenomenon within the construction sector. To achieve long-term, sustainable industrial development Kenya needs a concerted strategy for industrial upgrading moving from simple to a more advance strategic approach to project management.

The link between project management and the development of construction projects in organisations is analysed in some literature sources (Betts and Lansley 1995; Crawford 2002; Evaristo and Fenema 1999). However, this analysis does not relate to the presentation and discussion of research data specifically obtained from Kenya. Rather, it is based on an interpretation of the reasons for the success and failure of construction in Kenya. Organisations in Kenya have thus failed to implement a standard process that they can understand and use. Various steps of identification and feasibility are not well established. A related problem is the failure to introduce project management tools. Successful management of a construction project in Kenya posses many managerial and technical challenges. The main reason for managing a construction project, wherever it may be, is to facilitate the successful acquisition and integration of an automated system into an organisation. As shown in this study, it requires the planning and co-ordination of many activities and events, involving many people from various disciplines. Ideally, all the people involved in the running of a construction project should have a basic understanding of project management concepts. Such people are rarely available in Kenya in general. Managing and running of a multi-million construction project is not an easy task. It takes a very skilled technical project manager. There is a shortage of such managers. In addition to the obvious managerial responsibilities that project managers have had to face, they also have to contend with technical challenges (Mbatha 1993; Wachira and Mitullah 2003).

Evidence increasingly highlights that the performance of the project management profession in delivering new construction projects, which satisfy clients requirements in terms of quality, time and cost parameters is lacking. It is apparent that project delivery performance is poor. Literature suggests that the problems may have arise from; the lack of integration between project managers, government officials and contractors, the application of procurement systems; the condition of the general contracting market; and the inherent "uniqueness" of each new heavy construction engineering project. However, when considering such factors, the formal
construction sector in Kenya cannot consider itself singularly different from other industries that have considerably better performance and productivity statistics (general manufacturing, automobile and aviation industries).

The above situations can be predicted, controlled, or addressed by an appropriate project integration process. Therefore, the researcher submits that one problem in Kenya lies with the systems and approaches that are applied to the management of heavy construction engineering projects rather than any technological or methodological issues unique to construction. Of course this was recognised in manufacturing and it was this recognition that introduced project management discipline. At its core, the project management tools and techniques developed to support it were intended to address difficulties such as those discussed above.

From the literature explored, it has emerged that project performance can be illustrated in two key ways. Firstly, models, which help companies provide effective project management performance can lead to positive results regardless of the success or otherwise of the project being managed. Secondly, variables of project management performance may influence the overall outcome of a project. According to Ahuja et al (1994), project management was introduced because of the need to control both costs and schedule. It can be asserted that projects have become more complex and demanding for both the clients and project teams. The then chair of Construction Industry Board (CIB) pointed out that the construction industry is

“exhorted to learn from other industries, but are not told how to translate the lessons” (CIB 1999).

Hence, the risks and potential for losses need to be well controlled. As project environments have become more demanding and complex, the need for better project management techniques have increased as well. What is now needed is an overview of Kenyan formal issues.

2.5.1 Kenyan formal issues
This research focused on the issue of cultural complexity in Kenya. The basis of exploring this area was the fact that the construction sector has had difficulties in

- ineffective procedures for defining and preparing;
- difficulties with appraisal and selection;
- problems of activation and start up;
- ineffective project execution, operation and supervision;
- deficiencies in the co-ordination of project activities;
- problems in evaluation, diffusion of project results and lack of follow-up action;
- lack of standard and discipline;
- team integration;
- unclear management roles and lines of authority; and
- lack of a management infrastructure.

One of the main areas the country remains keen to develop is its formal construction sector. In their study Ndegwa and Kuhn (1982) suggested that during the 1950s and 1960s around the world many macroeconomic “paper plans” were based on econometric and statistical manipulations which were produced with lack of any kind of macroeconomic realism or project backing. Following independence, Kenya recognised that it simply did not have the capacity to achieve its ambitious development objectives; this was confirmed in Ndegwa’s and Kuhn’s (1982) study, which revealed that in 1966-67, forty to sixty percent of the annual development budget remained unspent. This led to an urgent need to give proper project content to the plan and to institute some kind of effective project recognition, preparation, planning, and implementation. Interestingly, from the literature search, there have been no practical models for such a project process and its organisation available in any of the sectors in Kenya.
According to Ndegwa and Kuhn (1982), in 1968, at the insistence of international development agencies, the Kenyan Ministry of Economic Planning and Development assumed responsibility for introducing a project unit. The project unit was opened in Nairobi in January 1970, supported by the Canadian International Development Agency (CIDA) and managed through York University. The project unit was set up in the Ministry, to assist Ministries within the government with identification, preparation, evaluation, and preparation of development projects. These were solid achievements, perhaps best demonstrated in practice through the large number of project descriptions, by ministry, programme and locations, and forward project budgets for each of the five years carried in Part II of the Development plan 1979-1983. Although Kenya has shown commendable performances in project management, major problems persist in other areas of project delivery strategies. Among these is the issue of managing cultural complexity. Looking into the future from a strategic perspective, there is no doubt that quite different policies from those in the past will have to be formulated and implemented within the construction sector.

There is some clear evidence that overall, part of the reason for the increasing emphasis on team integration at the expense of construction projects is the perception that many projects have failed to achieve the targets set for them, or that they have unintended negative consequences which far outweigh their direct benefits. Much can be learnt by assessing the reasons for each failure. It is a good deal easier to do this than cite the reasons for a successful project, partly because it can often be highlighted that a single overriding variable is responsible for failure, whereas success must be the results of a number of variables working together and it is difficult to distinguish the most significant.

Although the heavy construction engineering sector, which includes (oil, chemical, food manufacturing and pharmaceutical) is usually far from the largest sector in Kenya, in terms of share of total output or employment, growth of this sector has long been looked on as instrumental for economic development. The lack of high quality data constitutes one of the main impediments for a rigorous and policy relevant research on African industry, and it could be argued that vast majority of previous heavy construction engineering in Kenya has therefore been based on aggregate data. Aggregate data is useful in many circumstances, though the ranges of issues that can
be addressed relating to heavy construction engineering projects are inherently limited. This work therefore analysed heavy construction engineering projects, as they are the most established industrial sectors in Kenya.

To catalogue the lack of cultural complexity research in developing countries is not to condemn the government, international bodies and private co-operatives but serves to underline the need for new and more effective management procedures. This should lead to heavy construction engineering projects having a greater impact on improving social and economic conditions in developing countries (Africa). Current project management literature recognises that construction projects have identifiable features (Lewis et al. 2002). This research demonstrated that in practice team integration is concerned with the delivery element of the project life cycle. Lack of research on pre-delivery, preparation or project planning and the absence of cultural complexity and multi-cultural team integration research has prevented the government and organisations from addressing the problems being faced in managing heavy construction engineering projects in Kenya.

It has been increasingly recognised that team integration traditionally has been an exclusive management process of a scientific nature characterised by various techniques that include planning, monitoring, control of project performance and quality of project work. It has also been acknowledged, that team integration provides better quality to clients through optimal utilisation of resources and effective intra-organisational integration (Baiden 2006). According to the Kenya Nation newspaper (2001), the failure of projects in Africa has been attributed to poor management and integration. Attendees at a seminar in Nairobi (2001) were told that Africa needed to embrace modern methods of project management to avoid wastage of public resources. However, if factors such as commitment, planning, awareness and the evidence presented are considered, it could be argued that lack of project integration awareness has led to this gap.

2.6 CONSTRUCTION PERFORMANCE IN KENYA

As illustrated in previous sections, the construction industry in Kenya is poor and attracts a lot of debate and censure. These weaknesses will be discussed in terms of the following:
2.6.1 Performance against project objectives of time, cost, and quality

The literature suggest that the very nature of the procurement method (traditional method) adopted for civil engineering and building contracts leads to poor performance with respect to the objectives of time, cost and quality. As indicated by Nzoika (2006) and Talukhaba (1988; 1999), dates for construction contracts generally go beyond the completion dates. Due to lack of research in this area, it is extremely difficult to estimate completion delays of projects in Kenya.

2.6.2 Transparency and Competition

Construction thrives if regulations are indistinct or incoherent and this makes Kenya’s construction industry a haven for corrupt practices. As suggested by the UN (1994) the best way to show transparency in the procurement process is to ensure sufficient competition and to specify clear and unambiguous procedures and rules for the issue, receipt, and evaluation of tenders and award of contracts. The recurrent use of government ministries in multi-million projects eliminates competition and encourages fraud and corruption. As a result, both the price and quality of the contract are affected due to lack of competition and indifferent outputs. Shortlists are used for the selection of consultants on World Bank financed and administered projects. The shortlists are, however, often repetitive and the same organisations are repeatedly selected for civil engineering projects and building works supervision. As observed during the fieldwork, a number of contracts are awarded to the same contractors using different contracting names. It is common practice also for a single
contractor to buy all the bidding documents and to price and submit them under different names. Therefore, one could suggest that the classification of contracts by the current Ministry of Publics Works and Housing for the pre-qualification of local contractors is too general and out of date to be used for Bank and financed contracts. From the literature, it was difficult to establish the registration criteria, lists of contractors and monetary thresholds because they are not regularly updated (Wachira and Mitullah 2003). This does affect competition and hence quality and price.

2.6.3 Management Information System

Mbatha (1993) highlighted that a major weakness across the construction industry is the lack of effective and efficient management information systems. Talukhaba (1999) also observed that monitoring and control of procurement processes can be very difficult. During the fieldwork, it was observed that the procurement audits are unproductive; this meant that standards against which procurement performance are measured is only vaguely described. From the above, there appears to be insufficient monitoring and control of procurement by the Ministry of Finance and Ministry of Public Works. The current structure and operations of the industry do not avail themselves of information easily and reliably. For effective decision-making, it is essential to document and avail data for all potential users within the industry. This would make the industry transparent by reducing the barriers that might be created by the different market sectors.

2.6.4 Insecure funding

A review of the literature revealed that insecure funding for public projects is one of the greatest concerns of private sector entities delivering works and services to government establishments (Mbatha 1993; Nzoika 2006; Talukhaba 1999). The cause of the insecure funding for procurement was mainly due to cost inflation, poor inflation management, poor financial management, and sub-target generation of revenue and subsequent freezing of budgets funds. Insecurity in funding affects all aspects of the construction process. The situation described here applies to both public and private sector clients and results in poor cash flows for the contractors. This cash flow problem is made worse by the reduction of retention payments each month. As a result, contractors end up cutting corners to make up for their losses and either meet their obligations or abandon the work. This often results in poor standards
of projection execution, which in turn leads to adversarial relationships developing between contractors and clients. The only exemption is probably in World Bank financed projects where the system of tight monitoring and controls ensure that contractual payments are accordingly effected.

2.6.5 Work force issues and capacity building

The working conditions of construction workers in Kenya are atrocious. A number of sites visited lack basic facilities such as toilets. As Wachira and Mitullah (2003) stated, another key area that needs to be addressed in Kenya is health and safety management in construction. There is a need to devise a strategy of enforcing the occupational health regulations in informal construction operations in order to minimise the exposure of workers to workplace hazards. It is imperative to note that accidents are extensive in both the informal and formal construction sites in Kenya. The terms of engagement of the construction workforce are poor with a large proportion employed as casual workers and not signed up to any pension scheme. Interestingly, salaries of the workers are not proportionate with the level of risk involved in site work and in a number of cases fall well below the minimum wage.

From the literature reviewed in previous sections, it can be observed that the training of the construction workforce is primal. As claimed by Wachira and Mitullah (2003), a large proportion of the workforce lacks any formal training. A number of the workers start as labourers and rise up the ranks to become tradesmen. This apparent lack of training and skill affects cost, quality, health, and safety. The high percentage of unemployment perpetuates this situation and therefore there is little inducement for the construction industry to improve its health and safety record and terms of engagement of its workforce. A number of the workers are driven by survival needs and are quite happy to be employed regardless of the unpardonable conditions. It is worth noting that a large number of the workers are recruited through friends, personal search or through relatives. In Kenya, social networks play an important role in keeping workers employed in the sector. Construction workers move around active construction sites and are employed by supervisors in charge of the construction on a casual basis. As a result, employment on a particular site may last from one day to one month or more depending on the pace of the work, availability of materials and funding.
2.6.6 Delegation of owner’s responsibilities

It has been observed from the literature (Mbatha 1993), that the need for the client to appoint a professional to represent him in the project is greater for the private and than for the public client. In Kenya, the public sector appoints its own technical staff, for example, the Ministry of works comprises mainly of architects, engineers, and quantity surveyors. These professionals have a responsibility for realising all government projects. Interestingly, the clients are government ministries including ministry of works itself. The parastatals also have capable technical staff for realising building and construction projects. The staffs, although technically qualified, need additional training in organising, planning and controlling. As claimed by (Mbatha 1993 and Nzoika 2006), public projects are known to suffer the most delay and cost overrun. The problem in the public sector is not client representation but re-organisation of the project roles with emphasis on the project management function, not just on architecture, quantities, and engineering.

In Kenya, a number of private clients demand to be representation on their projects. Contentiously, when the client hands over any project work, he expects the contractor to whom he has delegated to be able to appreciate his project interests. This may require that the contractor be a member of the minority group to which the client belongs. The construction market may be considered inhomogeneous consisting of the following sub-markets:

- the Asian community market;
- the European and American firms market;
- international agencies and organisations projects market;
- externally financed government projects market;
- government financed projects;
- parastatal bodies projects market; and
- Kenyan African investors and businesspersons projects market (Mbatha 1993; Mitullah and Wachira 2003; Talukhaba 1999).

Each of the above-mentioned groups has a tradition of working practice with particular professional firms and contractors. Interestingly, in a number of cases the
choice is made on the basis of ethnicity, social, and economic class, political reason, or religious faith.

2.6.7 Dependence on International Construction firms

A number of governments in Africa e.g. Ghana, South Africa, Botswana are keen to promote the emergence of domestic construction firms willing and able to pursue contracting and consulting work in competition with international firms. In Kenya, a number of the local construction firms are relatively small and inexperienced to handle large construction projects. This capability gap has left the domestic market door open to a number of international organisations. However, reliance on international organisations for the provision of managerial and technical assistance, is a two edged sword. In return for the profits they gain and the experience, they obtain in construction project management while operating in Kenya, international construction organisations are expected to pass on management and technical skills to their local counterparts. However, notwithstanding this donors and international funding agencies, like the World Bank favour international firms because with experienced managers and an established track record as they are reckoned to be more credible than domestic construction firms.

Langford and Rowland (1995) highlighted that, the complex multi-organisational and cross-cultural setting envisaged in the internationalisation process does create formidable challenges for construction management in general. In Kenya, the main problem with international construction firms is that a number of them do prefer to work alone despite the insistence of the government that they enter into joint venture arrangements with local firms. As observed, a number of international firms enter joint venture arrangements merely to hide behind a political association and maximise their influence to be able to keep the costs of bidding down to a minimum. The above is further exasperated by the monopolistic stance international organisations assume in the construction market in Kenya, particularly insofar as monopoly-based decisions give rise to the introduction of projects that are inappropriate to local socio-economic conditions and also to the deter local firms from participation in the market.
2.6.8 Creation of project teams in Kenya
In Kenya, building and construction work is usually delegated to a main contractor. In order to carry out the work, the contractor manages his own labour, domestic, and nominated sub-contractors. Within the construction site, the architect’s role is mainly to co-ordinate many different and independent contractors. According to Mbatha (1993) and Talukhaba (1999) the architect only inspects work on-site on a regular basis so as to make sure everything is executed to the plan. The fact that the project is not let in packages makes it difficult to overlap the design and construction phases. The nature of classification of contractors, their sizes, economic and technical ability also makes it impractical to ‘let out’ any project work in any meaningful packages. Project managers’ effective roles on the site are closely linked to the structure of the project and its organisation. In Kenya, project managers provide all the necessary checks and balances for both the consultant’s and the contractor’s activities. As a result, the size of the project and its complexity are the other influencing factors because they determine whether it is economical to divide work in packages.

2.6.9 Project integrating contract systems
Evidence shows that these systems are contractual as well as managerial (Mbatha 1993; Talukhaba 1999). They merge principles and qualities of contractual relationship with those of management. In Kenya, integrated contract systems are characterised by their flexibility, which is an indication of an effective management system. The contracts are an essential part of the wider management system and project framework. These systems have very little in common with the traditional approach and possess characteristics that can potentially improve project performance in Kenya.

Kenya’s heavy construction engineering and construction industry is characterised by simple and relatively small structures. For management of projects to be effective, management information systems within the industry and those for specific projects must be developed. A project management systems approach in this respect is recommended. With respect to fast tracking and project organisation flexibility, it is a requirement for the client to have the flexibility of either applying a pure management approach or an integrating control system. This requires that the two notions are
appreciated and introduced by the industry. The next section focuses on the UK construction industry.

2.7 CONSTRUCTION IN UK

The UK construction industry has undergone remarkable changes aimed at improving construction performance. The construction industry in the UK makes a significant contribution to the economy of the UK. According to NAO (2001), the total output value of construction in 1999 was £65 billion accounting for eight percent of the Gross Domestic Product (GDP). In 1998, there was growth of seven percent over and above the output. The NAO (2001) further highlighted that the industry employs about one point nine million people of which, half a million are self-employed and involves some 163,236 firms. In 1999, the public sector accounted for thirty-seven percent and the private sector sixty-three percent. Of the total output in 1999, fifty-two percent was new build and forty-eight percent represented repairs and maintenance (NAO, 2001). The construction output in the UK can be subdivided into private industrial, private commercial, public housing, public non-housing and repair and maintenance. The above sub-sectors and their respective values over the period 1996-2000 are illustrated in Table 2.7a.

Table 2.7a: Construction Output by type in Great Britain, 1996-2000 (£ Million)

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Housing</td>
<td>1421</td>
<td>1232</td>
<td>1069</td>
<td>1008</td>
<td>1341</td>
</tr>
<tr>
<td>Private Housing</td>
<td>5592</td>
<td>6751</td>
<td>7361</td>
<td>7370</td>
<td>8586</td>
</tr>
<tr>
<td>Public non-residential</td>
<td>4441</td>
<td>3756</td>
<td>4151</td>
<td>4895</td>
<td>4840</td>
</tr>
<tr>
<td>Private industrial</td>
<td>3119</td>
<td>3491</td>
<td>3810</td>
<td>3953</td>
<td>3859</td>
</tr>
<tr>
<td>Private commercial</td>
<td>7015</td>
<td>8388</td>
<td>9917</td>
<td>12022</td>
<td>12808</td>
</tr>
<tr>
<td>Repair and commercial</td>
<td>27317</td>
<td>28424</td>
<td>29569</td>
<td>30239</td>
<td>32096</td>
</tr>
<tr>
<td>Total</td>
<td>48905</td>
<td>52042</td>
<td>55877</td>
<td>59487</td>
<td>63530</td>
</tr>
</tbody>
</table>

The literature suggests that the public sector client base comprises central government departments, agencies, local governments and other bodies funded either entirely by government or in receipt of capital grants. The main central government procurers of construction were found to include NHS Estates, Defence Estates, Environment
Agency, and the Highways Agency (NAO, 2001). The values of these estates and their annual expenditure on construction are represented in Table 2.7b. In 1999-2000, the local government expenditure was an estimated £11 billion.

### Table 2.7b: Major Central Government Procurers of Construction

*Source: Extracted from NAO (2000), Modernising Construction*

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Value of Estate</th>
<th>Total Annual Spend on Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Estates</td>
<td>£72 billion</td>
<td>£3 billion</td>
</tr>
<tr>
<td>Defence Estates</td>
<td>£14 billion</td>
<td>£1.5 billion</td>
</tr>
<tr>
<td>The Highways Agency</td>
<td>£65 billion</td>
<td>£1.2 billion</td>
</tr>
<tr>
<td>The Environment Agency</td>
<td>£1.6 billion</td>
<td>£145 billion</td>
</tr>
</tbody>
</table>

Government departments and agencies do have considerable influence on the construction industry as sponsors, procurers, and regulators.

#### 2.7.1 Structure of the UK Construction Industry

According to the DTI (2004), there were one hundred and seventy thousand contractors operating in the construction industry in 2001. The majority of firms in the industry are extremely small. One in ten people employed in the UK work in construction and 1.68 million work for contractors. The industry is made up of around one hundred and ninety-two thousand four hundred and four construction organisations, one hundred and sixty-four thousand of which have less than twenty-four employees. Interestingly, fifty-six organisations have more than one thousand two hundred employees. International construction is worth £10 billion to the UK economy and five hundred construction firms work overseas. From the literature reviewed, it was observed that in 2003 new works accounted for fifty-three percent of contractors output while repair and maintenance made up the remaining forty-seven percent (DTI 2004). Major new works sectors within the UK can be sub-divided into house building, infrastructure, industrial, and commercial construction. It was found that in 2003 house building accounted for thirty-two percent of contractors output, infrastructure seven percent, industrial construction thirteen percent and commercial construction fifty-three percent (DTI 2004).
As illustrated in this chapter, the construction industry is highly disjointed and dominated by small organisations. As indicated by the Small Business Service (DTI 2005b) the UK construction industry consists of one hundred and fourteen thousand five hundred and ten Small and Medium Enterprise (excluding sole traders). In concurrence with sole proprietors, these organisations collectively account for sixty-six point one percent of the private sector turnover. Furthermore, they account for eighty-two point nine percent of the workers. It emerged from the literature that of all sectors, construction had the highest percentage of enterprises with no employees; comprising eighty-six point six percent of the total. Collectively, it was found sole proprietors account for twenty-three point eight percent of the private turnover (DTI, 2005b). Briscoe (2006) stated that the number of small organisations is of course subject to continuous change as new firms are introduced and existing organisations go out of business, it is therefore vital to be cautious with the statistics. Nevertheless, the emergence of small firms within the construction sector cannot be ignored; indeed, it has lasting implications for employment practices and career structures.

Dainty et al (2007) argues that among all the usual stipulation regarding construction industry statistics, the extent of self-employment continues to be litigious. Based on a different sampling strategy, DTI (2005a) highlighted that thirty-eight percent of the sector’s workforce are sole proprietors. In 1996, the sector had a record high point of forty-six point three percent. Briscoe et al (2000) believed that the successive reduction is widely credited to a clamp down on tax evasion by the Inland Revenue over the last decade. From the above, one can easily suggest that the employment status in UK is conflated, however, Dainty et al (2007) argues that with a pervasive culture of tax incursion, rendering statistics on the levels of self-employment is especially unreliable. The statistical picture is further misted by the high volume of transient migrant workforce, especially in the southeast of England (Dainty et al 2007). It can be observed that the construction sector in UK accounts for an unusually high percentage of non-standard employment. This has a significant effect on career structures, training, and health and safety. In spite of the recent symposium, current indications show that the number of self-employed is mounting again (Dainty et al 2007).
2.7.2 Structure of Projects in UK
The number of new construction projects in UK valued at over £25,000 in 2001 was at forty-nine thousand according to DTI. Just over a third of these orders were placed in the residential sector, a half were for non-residential projects and fifteen percent for civil engineering projects. However, residential projects tend to be comparatively small so account for only a quarter of the value of all orders, while residential orders tend to be comparatively larger and accounted for sixty percent of the value of all orders (DTI 2004). The above suggests that the industry requires specialist skills and professionals who can manage and deliver projects successfully. This calls for the use of integrated teams, which are able to ensure that projects are approached in the correct manner whilst ensuring that the key metrics for projects are controlled. This highlights why the UK construction industry has traditionally carried out project activities in teams although the organisation has been pursued along specific professional and trade lines. One could argue that having teams working together, ensures that there is a cultural balance of enthusiasm, experience, drive, organisation and content, which when brought together, ensures that projects are given the best possible opportunity to succeed. In order to propose a framework for the Kenyan construction industry, this research has looked into some of the methodologies used in improving project performance in UK.

2.7.3 Scope of the UK construction industry
Pearce (2003) differentiated between a narrow and a broad definition of the construction industry. Dainty et al (2007) argues that the narrow definition focuses on on-site assembly and the repair of buildings and infrastructure as executed by contractors. According to the Office for National Statistics (2003), the analysis of the construction industry broadly follows the Standard Industrial Classification (SIC) structure that assigns economic activity to different divisions in accordance with a general coding system. The statistics produced by Department of Trade and Industry (DTI) in accordance with SIC Division 45 are usually used to show the size of the construction industry (Dainty et al 2007). In 2004, the UK construction industry had a provisional annual output of £102.363 billion, with a total workforce of 2,216,000 (DTI, 2005a). Dainty et al stated that the size of the employees alone validates construction as a valuable context of social research, irrespective of any desire to improve productivity. The literature, however, suggests that social research in
construction is too often focused upon improving performance, which unfortunately reduces the construction workforce to human capital (Dainty et al).

From the above, one could therefore easily claim that construction activity in UK is larger than suggested by the figures indicated. As Pearce (2003) showed, the SIC 45 group excludes those involved in direct labour, informal sector and self-building, the latter being approximately valued at £10 billion. In fact, the narrow definition also prohibits those involved professional services, including those who offer design and engineering services. A number of professionals are also involved in the delivery of facilities management services. Briscoe (2006) further argued that a significant quantity of construction activity recurrently fails to be accounted because it is not the 'principal activity' of the organisation filing the return. Based on the above analysis, Pearce (2003) claimed that in UK the construction contributes five percent of gross domestic product (GDP). Whilst joining in with debate Dainty et al (2007) argued that if Pearce’s broad definition is used, the boundary extends beyond on-site activity to include quarrying of raw materials, manufacture of building materials, sale of construction products and professional services. On this basis, the contribution of the construction sector could double the five percent GDP.

2.8 CONSTRUCTION PERFORMANCE IN UK

Literature also suggests that the ability of the construction industry to deliver multi-million and innovative projects is not in doubt. At its best, the industry is outstanding. Interestingly, it has been highlighted that the adherence to traditional working methods has rendered the performance of the industry somewhat below acceptable standards. For example, the NAO (2001) stated that government projects are ‘let’ based on lowest price, seventy percent were delivered late, and seventy-three percent were over tender price. Considerable changes were required to improve the culture, attitudes, working practices and processes, which have existed in the industry for a long time (NAO, 2001). From the five independent reports, which include (accelerating change, modernising construction report, Latham, Levene Efficiency Scrutiny into Construction Procurement by Government and Egan) are reviewed in this section. They do underpin the requirements and scope for the changes that are projected as needed by the construction industry in UK. These five reports are
reviewed and the scope for improvements in the UK construction is discussed in the following section.

2.8.1 The Latham Report: Consulting the Team (1994)
The report sampled the views of contractors and key private and public sector clients and was thus a wide-ranging review. It was the first in about thirty years to address the apparent scourge that the UK construction industry faced (Latham 1994). From the report, a way forward to a more structured, less confrontational, and more efficient construction industry is outlined. The report observes that clients are at the core of the construction process and that they have a number and varied needs. The key issues highlighted by Latham (1994) are:

- the techniques available for resolving issues in construction projects were unacceptable. Latham found the contractual arbitration was not good enough due to frequent delays and the constant spectre of appeal. To resolve the above, Latham proposed to introduce a dispute process, which would allow speedy resolution of disputes;

- contractual payment methods were found to be unsatisfactory especially to contractors. This greatly hinders cash flow and hence performance on the construction projects. Latham stated that a more favourable payment method was needed to guarantee payments to contractors;

- Latham also found that construction contracts tended to be burdensome and risk share was inconsonance with the risk strategy philosophy which required that risks in a construction contract are equitably shared between parties according to their aptitude to control, manage and accept risk events if they do emerge. Thus elements of trust and fairness needed to be introduced into construction contracts; and

- lastly Latham stated that the working practices and procedures of the industry led to adversarial relationships, which muffled the efficiency of the construction industry in delivering quality services to clients. Construction contracts and documents tended to include the rights and responsibilities of the parties but encouraged narrow-minded control with little attention to the requirements of the end user. Latham also suggested that more favourable strategies were therefore
required to promote collaborative working, joint problem solving and win-win situations.

Due to above, Latham made a number of recommendations to improve the performance of the industry. These can be summarised as (Latham 1994):

- a new construction bill should be introduced and passed by parliament so as to outlaw burdensome contracts and compel clients to put capital into trust funds;
- a new family of contracts should be launched to reflect the needs of a “modern contract”. Latham stated that the key elements of the contract should include equitable risk allocation, joint problem identification and solving, teamwork and win-win scenarios. The New Engineering Contract (NEC) was considered and was recommended for use for all civil and building contracts;
- clients should introduce a new mechanism of payments based on milestone payments. They should get rid of retention payments and institute performance bonds instead;
- adjudication should be introduced as the normal mechanism for resolving disputes in construction projects; and
- Government departments and agencies should commit themselves to leading plans for change by being best practice clients. The DoE should be chosen as the lead department in the implementation of the recommendations.

Latham (1994) argued that, as long as the recommendations were effectively implemented, a productivity target of thirty percent real cost reduction was possible over five years.

2.8.2 Efficiency Scrutiny into Construction Procurement by Government (1995)
Following the Latham (1994) recommendations, the Cabinet Office commissioned the Levene Efficiency Scrutiny into Construction Procurement by Government. It is essential to highlight that the Government departments and agencies were partly to blame for the poor performance of the UK construction industry (Cabinet Office, 1995). From the study, it was found that government departments and agencies:
• had a one dimensional view of competition;
• were often impractical about budgets or timetables;
• often unsuccessful when it came to manage risk; and
• had no single unified point of contact with industry with whom to talk about and resolve common problems across a number of departments and agencies.

Due to above, some recommendations were made to improve the government procurement system. These included:

• an introduction to better communication channels with the construction industry so as to minimise conflict;
• negotiation of deals should be based on value for money;
• there should be an increase in training of civil servants on procurement and risk management; and
• an implementation of a more commercial approach to construction projects.

The now Office of Government Commerce was to assume responsibility for coordinating construction procurement across government departments and agencies.

2.8.3 The Egan Report (1998): Rethinking Construction
From the two reports, by 1997, most of the recommendations made had been largely implemented in whole or in part but progress in achieving improvement was perceived to be slow and as a result, the Construction Task Force was introduced, led by Sir John Egan. The Task Force’s was to advise the Deputy Prime Minister on construction clients’ views about available opportunities for improving the quality and efficiency of construction delivery in the UK housing sector in meeting clients requirements (Egan, 1998). The Task Force suggests there needs to be change in style, culture and process and identified five main drivers of good construction performance. These can be summarised as commitment to leadership; focus on the customer; integration of process and team around the project quality; a driven agenda and the commitment of people.
2.8.3.1 Committed Leadership

The Task Force highlighted that change needs to be led by clients through demonstration projects and a movement for a change; that clients need to demand better value and improved performance from suppliers. In return, Egan stated that clients needed to show their commitment to being good employers and to procure work in a manner that allowed best value to be delivered. Egan further suggested that clients needed to provide fair rewards for good performance. From the report, there was a call on the construction industry to commit itself to deliver significant improvements in performance that was possible to all manner of clients both knowledgeable and inexperienced. The Government as a regulator of the construction industry was called upon to introduce a sustainable environment required to deliver these improvements and, as a key client, to encourage its departments and agencies to become best practice clients.

2.8.3.2 Focus on the customer

Egan suggested that in order for significant improvements to be achieved the construction industry needed to focus on the requirements of the customer. He further argued that customer focus was necessary if suppliers of construction services were to secure their positions in highly competitive markets. This could be achieved through a change of culture. From one, which emphasised myopic control, with each link in the supply chain focused on maximising the efficiency of their contractual obligations without, regards to the other links and processes. It was to be replaced with a new culture which took the systems view of things; one which recognised construction as part of a series of activities and processes designed to provide value to the end user or customer.

2.8.3.3 Integration of process and team around the project

One of the essential pillars of the report was to try to define a process in construction that involved collaboration. As highlighted in the report, Egan challenged the conventional view that construction projects were unique, that they were all specially made with different ground conditions, that there are differences in design and construction of each project, that what matters is a project which the clients pays for not the process etc. By comparing every construction project to the design and planning of the production of a new motor vehicle, Egan pegs the poor performance
of the industry to the high standard of quality and efficiency of the car industry. From the report, Egan emphasised the importance of the construction industry learning from other industries and stop urging a culture of uniqueness.

From the above review, Egan identified four key project processes. These are:

- Components and Parts: a sustained programme of improvement for the production and delivery of components;
- Construction Process: a quality driven strategy marked by the continuous assessment, redesign, control and improvement of the supply chain with the view to eradicate waste;
- Focus on End Products: integration and focus of construction process on meeting the needs of the end user; and
- Partnership with the Supply Chain: the need to introduce long-term relationships based on continuous improvement with a supply chain.

2.8.3.4 Commitment to people

Egan highlighted the value of the construction industry accorded to its employees. Egan also stated that the construction workforce is undervalued, under resourced and frequently treated as a commodity rather than the industry's "single most important asset". The Task Force stated that the working conditions of the workforce especially site conditions as deplorable, and the health and safety record of construction the second worst of any sector in the UK. It has led to the creation of a poor image of the construction industry. Between 1994 and 1998 enrolment for construction related courses run by universities for professional staff fell by twenty-six percent (NAO, 2001). From the review, it was observed that the construction industry was challenged to value its workforce and to provide decent and safe working environments. There are seven annual quantifiable targets, which were set out to improve the performance of construction projects. These are to (NAO, 2001):

- increase turnover and profits by ten percent;
- increase productivity by ten percent;
- increase inevitability of projected cost and time estimates by ten percent;
- minimise accidents by twenty percent;
• minimise defects by twenty percent;
• minimise construction time by ten percent; and
• minimise capital cost by ten percent.

2.8.4 Modernising Construction Report (2001)

It is worth noting that the report was published in 2001 and was prepared under Section 6 of the National Audit Act 1983 of the UK presentation to the House of Commons in accordance with Section 9 of the same Act. “Modernising Construction” builds on the key recommendations made in the Latham, Levene and Egan reports. As a result, the report mainly looks into the public spending on behalf of the Parliament. Six requirements of procuring and managing construction including maintenance and refurbishment were identified. These requirements were found to be important for procuring and managing construction better including departments, and agencies. The six requirements are summarised in Table 2.8.4.

Table 2.8.4: Key requirement of procuring and managing construction

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Explanations</th>
<th>Illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor selection to be based on long-term achievement of sustainable value for money.</td>
<td>The lowest tender price will not guarantee value for the full life of the building.</td>
<td>Balancing quality and price by the Highway agency.</td>
</tr>
<tr>
<td>Construction design should be integrated with the whole construction process.</td>
<td>Consultation with the end user in developing the design and involving the main contractor.</td>
<td>Integrating the design team-Building Down Barriers by Defence Estates, Laing and AMEC.</td>
</tr>
<tr>
<td>Sufficient planning time before the commencement of construction work on site.</td>
<td>Good planning leads to improved construction sequence; risk assessment and management; and value management.</td>
<td>Benefits of planning by Dudley Southern Bypass.</td>
</tr>
<tr>
<td>Reliable project management need to be in place.</td>
<td>Comprehensive understanding of key stages, risk, monitoring, and communication.</td>
<td>Good project management by Kingston Hospital.</td>
</tr>
<tr>
<td>Measurement of cost, time, and quality requirements for learning and future projects.</td>
<td>The measurement to assess whether targets are being met and lesson learnt for dissemination on future projects.</td>
<td>Measuring performance (external benchmarking and performance measurement framework) by Defence Estates.</td>
</tr>
<tr>
<td>Remuneration of contractors to incentivise them to deliver quality construction on time and to budget.</td>
<td>Mode of measurement of contractors can influence performance but careful judgement is required to ensure value for money.</td>
<td>Agreeing a target price by The Environment Agency Beach Management Project.</td>
</tr>
</tbody>
</table>
2.8.4.1 Recommendations

From the Bourn report (2001) six recommendations were made to the Office of Government Commerce (OGC) Line departments, Transport and the Regions (DETR), The Department of the Environment and the construction industry. The six recommendations can be summarised as:

- departments to vigorously measure improvements in construction and train more workforce so as to be effective construction clients;
- the construction industry needs to make more use of innovation so as to improve both the public sector construction quality and cost effectiveness of buildings;
- the stipulation of more co-ordinated direction by DETR to initiatives to promote better performance by the construction industry;
- as a member of the M41 board, DETR are to use its influence so as to ensure that demonstration projects are truly innovative;
- an introduction of a more supplicated performance strategy by DETR on whole running costs of completed building, cost effectiveness of the construction process, quality of the completed construction and health and safety indicators; and
- OGC should maximise their efforts of good practice to reach smaller firms that are funded indirectly.

2.8.5 Accelerating Change Report (2002)

From the “Accelerating Change” report (2002), one could argue that the main aim was to reaffirm the principles covered in the “Rethinking Construction” report (1998). It is worth noting that the Accelerating Change report was introduced due to a strategic forum for construction which was set up to address the barriers to progress and highlight ways to speed up change within the construction industry in the UK. The Strategic Forum for Construction (SFC) was introduced after the Minister for Construction in the UK (Brian Wilson) attended a forum, which was chaired by Sir John Egan.

The report comprised a vision, strategic targets, future actions by the forum (SFC) and others, and recommendations. From the report, the main aim for vision was for the
industry to realise that maximum value parties involved in the process consistently deliver excellent products and services that exceeded expectations. In order to achieve the above, participants within the industry are encouraged to exploit and add economic and social value of good design to products and delivery to become more profitable and earn resources for investments. The built environment is to be enhanced in a sustainable way to improve the quality of life. From the report, it has been further suggested that integration of the supply process, respect for people, a culture of continuous improvement through performance and investment in research and innovation be introduced. From Table 2.8.5, one can observe some of the targets set out by the Strategic Forum for Construction.

Table 2.8.5: Strategic targets set by the SFC

<table>
<thead>
<tr>
<th>Strategy description</th>
<th>Initial targets</th>
<th>Future targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction projects undertaken by integrated teams and supply chains</td>
<td>20% 2004</td>
<td>50% 2007</td>
</tr>
<tr>
<td>Client activity by value embracing the principles of the Clients' charter</td>
<td>20% 2004</td>
<td>50% 2007</td>
</tr>
<tr>
<td>Development and implementation of strategies to recruit and retain qualified people</td>
<td>300,000 2006</td>
<td>450,000 2007</td>
</tr>
</tbody>
</table>

Evidence from the report suggests that SFC will introduce means of measuring progress towards its targets. As argued in the report, SFC will also introduce a toolkit to help clients and individuals within the supply chain to bring together integrated teams to mobilise their value streams and promote effective team working within the construction industry. As a result, models for a payment strategy and KPIs for payments will be introduced. A review of project teams will be carried out and a code of good practice to be adopted by trade unions, clients, employers, and employees will be developed by the SFC. Other simulations covered in the report, included the Construction Best Practice Programme (CBPP) which was set up to develop, collate and share tools with SMEs so as to support them in their development as part of the integrated supply team. As suggested in the report, change in productivity will be accelerated by collating and sharing current best practices in logistics.
2.8.5.1 Recommendations

From the above, a variety of recommendations were suggested in the report so as to improve the understanding of construction and business needs and how the above could be used to improve integrated team working. In the report, integrated team working has been proposed as a way of improving performance within the construction industry. The following are the key recommendations that were proposed:

- an introduction of an education and training module in supply chain and collaborative working;
- the application of integrated team and long-term supply chains and active client input into their formation, review and signpost of existing process maps so as to encourage those who wish to be part of an integrated team;
- application of closer links between industry and academia so as to offer advice and support at both design and delivery stages of construction projects;
- widespread use of the Respect for People toolkit within the construction industry, so as to address issues about pay and working conditions and also retain high calibre professionals within the industry;
- accessibility to project insurance so as to underwrite the whole team and examination of the impact of insolvency law and practices on the construction supply chain;
- an introduction of the value of independent advice between industry and the government, which will help clients realise value for money; and
- the accessibility of basic competences and a code of conduct to make sure these clients can expect to receive independent services, which are adequate and consistent, and creation of an environment throughout the project by clients, which promotes excellence in health and safety performance (Egan 2002).

To summarise, one could argue that the five reports highlight changes in the construction process required to achieve improvement as:

- addressing cultural issues such as lack of respect for the industry's employees, inadequate investment in research and development, and the culture of blame;
promoting longer-term relationships between clients and contractors so as to foster continuous improvement in project delivery;

- better integration of the construction supply chain to provide a well-organised process;

- better integration of construction processes planning, design, construction and completion to eliminate waste and increase efficiency;

- focus on the requirements of end users in design, construction, maintenance and operation projects; and

- collaboration between contractors, clients, and consultants should be encouraged to improve quality, reduce project cost and time overruns, promote innovation and joint problem solving.

2.9 INDUSTRY PERFORMANCE IN A HISTORICAL PERSPECTIVE

A number of government and institutional reports have been published on the performance of the construction industry in the UK before the arrival of Latham and Egan. The significant ones found include Banwell (1964), Emmerson (1962), NEDO (1983, 1988) and Simon (1944). The above reports criticised the sub-optimal performance of the British construction industry. The key themes of these reports are covered in the Latham and Egan Reports. These can be summarised as adversarial relationships, disintegration of the construction process, limitations of the traditional procurement route, poor public insight of the construction industry and lack of a drive for continuous improvement.

The conclusions made and recommendations suggested are similar to those highlighted in the Latham, Levene and Egan Reports. Interestingly, the only unique feature between the four reports and the Egan Report is that the latter suggested that lessons could be learnt from other sectors especially manufacturing. From the review carried out, one could ask why then were Latham and Egan reports necessary? There are number schools of thought on this. It has been argued that unlike the manufacturing industry, the construction industry had not undergone any consistent pressure to change and needed more time. Murray and Langford (2003) note, the number of reviews carried out are due to the industry's own inherent culture of blame
and self-deprecation. It could be argued that Latham and Egan were thus not necessary.

A second school of thought features inactivity in the implementation of the recommendations to the construction industry's client base. It has been observed that up to the 80s the main construction client was the government. The construction industry was the subject of economic policy and was often used as an economic regulator. It is suggested that the industry was characterised by sporadic cycles of boom and recession (Murray and Langford 2003). The changes that occurred within construction were to do with policy rather than demand driven. Under such conditions, it is difficult to introduce any long-term programme of improvements or to invest in employee training, research, and development.

Murray and Langford (2003) concluded that during the 80s the construction industry witnessed a wide-ranging privatisation and the transfer of public sector concerns into private sector monopolies. It is claimed by Murray and Langford (2003), that the private construction client base increased considerably and one could argue as well that today about two-thirds of the total construction client base is private. The private sector flourishes by being able to generate and maintain an adequate level of demand for their services and so are better incentivised to take on risk and to improve the performance of construction industry. One could argue that, this may well be the rationalisation for the Latham, Levene and Egan Reports.

The above analysis confirms there are a number of reports that have examined project teams and cultural complexity in UK. However, there is a dearth of information about project complexity and project teams patterns in Kenya. In exploring the attitudes and experiences of Kenyan senior managers towards a better understanding of project complexity, the study will explore in-depth the facilitating factors that improved performance in heavy construction engineering projects in the UK.

2.10 COMPARISON OF IDENTIFIED PROJECT PRACTICES IN KENYA AND THE UK

From the literature reviewed a number of broad conclusions can be drawn. These conclusions give a suitable context to the research aim and objectives discussed in
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Chapter One. The literature reviewed highlights claims regarding an increase in the use of teams in managing projects. It can be observed that construction practices in Kenya differ in important respects from practices in the UK. From the two countries, complexity could thus be seen in at least two perspectives. Firstly, the project is an assembly-like process but is complicated, parallel and dynamic, and thus more complex than traditional project management envisages. Secondly, the construction industry is highly fragmented and its firms cooperate in ever-changing patterns, driven mainly by client demands. In the UK construction sector, project performance has been criticised for being unreliable. Time and budget overruns are common and much effort and resources are invested in making good defects.

As observed from the literature reviewed, construction is a hugely important industry; and not just because it contributes significantly to Gross Domestic Product (GDP) but because the product of the industry, that is, the built and the environment affects us all (Egan 2002). As construction organisations in developing countries define more of their activities as projects, the demand for construction project managers grows, and there is increasing interest in reforming the project delivery process. It is widely accepted that a project is successful when finished in accordance to client satisfaction. Unfortunately, due to a number of factors, project performance and project success needs to improve, especially in developing countries. As a result, several studies have been undertaken (Kivaa 1999; Lema and Price 1998; Mansfield et al 1994; Mbatha 1986 and 1993; Msita 1998; Ngowi 2002; Rwelamila 1996; Rwelamila et al 1999 and 2000; Talukhaba 1988; 1999) in specific types of projects.

Multi-cultural team integration is a particular problem for clients and project managers. Once they are established multi-cultural teams are said to outperform mono-cultural teams, in areas such as problem identification and resolution, by the sheer strength of its diversity. The basic values, concepts and assumptions differ with each culture, understanding these and enabling the ‘settling-in’ by recognising the cultural complexity is a required skill of a manager (Kang et al 2006 and Vonsild 1996). Choosing not to recognise cultural complexity limits the ability to manage it. The fragmentation of a project delivery has been blamed on the cultural complexities that exist. Project managers of multi-national organisations often make the common assumption that cultural differences are unimportant when individual members,
belonging to different divisions, of the same organisation are brought together as a team. The original research (Hofsteder 1980) suggested that eighty percent of the differences in employee’s attitudes and behaviours are influenced by national culture still has resonance today.

Cultural differences reflect different expectations about the purpose of the team and its method of operation, which tend to categorise into task and processes. The task area relates to the structure of the task, role responsibilities and decision making. The processes relate to team building, language, participation, conflict management, and team evaluation. Culture is an issue with many different dimensions. Both Hofstede (1991) and Trompenaars (1997) discussed different levels of culture. The former mentions gender, generation, social class, regional as well as national and organisational levels. The latter presents national, corporate and professional levels of culture. The level that is important in this study is that of national culture. For this study, the researcher focussed on multi-cultural project groups, to see what kind of problems, if any, that arise from the fact that people are from different national cultures and organisations.

The realisation of an integrated multi-cultural team working together as a single unit still remains the aspiration within the Kenyan and UK construction sectors. The various parties within the delivery team continue to face cultural issues. Egan (2002) believes that integrated team working is the key to construction projects that personify good whole life value and performance. Integrated teams deliver greater process efficiency and by working together over time can help drive out the old style adversarial culture and provide safer projects using qualified trained workforce. Egan further argued that teams that only construct one project team at the client’s expense would never be as efficient, safe, productive, or profitable as those that work repeatedly on similar projects. This, in particular in Kenya, has proven to be a long and complex process. Despite more than a quarter of a century of experience, the construction sector still reports serious defects in team integration. The UK and Kenya construction industry in recent years have become increasingly attuned to the issues that surround team integration. Partnerships and co-operatives are being formed; and integration and collaboration are becoming generally accepted needs for individuals and companies to survive.
From the above discussion, it can be observed that there are not many large Kenyan construction firms. Construction management education in institutions is such that very few university trained engineers work as or for contractors. For that reason, there is little emergence of innovation and research from the industry with respect to techniques, systems, and strategies. Contractors are thus academically and professionally frail and in some other cases governed by the design team working for the client. A notable feature to this is that, architects, engineers and quantity surveyors belong to influential professional bodies who decide how many people may register and practice. The fragmentation of the project delivery process has thus been blamed on the traditional separation of project teams.

2.11 SUMMARY

The literature review in this chapter tends to confirm the view that there is a lack of empirical study of the various claims made, and developments described, in relation to project complexity in Kenya. This suggests that research into the claims and developments are necessary.

In broad terms, these claims and developments suggest changes in the use of project management. As argued from the literature reviewed, for a project to be successful there must be an improved appreciation of the role of project management within construction projects and this role must be utilised within the context of a wider project alongside the other outside criteria and long term expectations. Literature reviewed pertaining to heavy construction engineering projects and its applicability to Kenya suggests that cultural complexity is one of the most crucial elements in project management success. Therefore, an investigation of the influence of factors such as the characteristics of a project, project environment, and senior managers work experience on managing project complexity seems to be a worthwhile area for further research.

This chapter has also reviewed the construction industry in Kenya and the UK and the framework in which the construction processes are carried out. A series of government reports have lamented the poor performance of the industry. The major initiatives that have been put in place to address the problems identified have been described. The evidence suggests a shift in the procurement paradigm from the
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separated to the integrated procurement systems with the use of other delivery modalities such as integrated team working and supply chain management. The concepts discussed in this chapter provide the basis for further investigation into critical factors for successful multi-cultural project teams working on heavy construction engineering projects in Kenya and the UK. Chapter Three focuses on presenting factors influencing project delivery and complexity in Kenya and the UK.
CHAPTER THREE: FACTORS INFLUENCING PROJECT DELIVERY AND COMPLEXITY IN KENYA AND UK

3.1 INTRODUCTION

The construction industry everywhere faces problems and challenges (ILO 2001). However, in Kenya these difficulties and challenges are present alongside a general situation of socio-economic stress, chronic resources shortages, and a general inability to address the key issues within the industry. The problems have become greater in extent and severity in recent years. In this particular chapter, lessons will be drawn from the literature to highlight factors that influence project delivery and complexity in Kenya and the UK. The nature of cultural complexity within heavy construction engineering projects has been the subject of study with growing interest, especially since the ESPRC Networks-Engineering and Physical Sciences Research Council was set-up in 2003 (Winter et al 2003). Yet, it could be argued in research terms, that cultural complexity has been neglected both in terms of conceptualising it and in terms of empirical study. Given the supposed severity of cultural complexity and the obvious failings of the industry's approach towards people management, it is reasonable to assume that such an issue would provide a focus for research to improve practice. Therefore, this chapter considers some of the challenges facing the construction industries in Kenya and the UK. The main issues addressed are the construction challenges in Kenya and the UK, complicated construction project developments, and management of complexity.

3.2 CONSTRUCTION CHALLENGES IN KENYA AND UK

The concept of culture has grown in importance, especially concerning the nature of national culture (Dainty et al 2007; Hofstede 2001 and Schein 1985) and organisation culture (Trompenaars, 2001). The various levels of culture in the industry have already been the subject of research; the key focus has been those of team culture, project culture and corporate culture. These three concepts have become well established and researched within the field of construction management (Ankrah and Langford 2005; Dainty et al 2007; Hall, 1999). In fact, the nature of culture within heavy construction engineering projects and construction organisations has been the subject of research for over a decade. However, the concept of cultural complexity is
something, which has been neglected. From the literature reviewed, it was observed that there is a dearth of research within the construction domain about cultural complexity in Kenya and the UK, but also in the mainstream management.

The culture of a construction industry must unavoidably depend on the concept and definition of the term ‘construction sector’. One could therefore suggest that if we cannot define the sector, we cannot address cultural complexity in construction projects. According to Fox (2003), the definition of the term ‘construction industry’ is by no means a ‘given’, since a number of researchers have highlighted arguments that either sustain or reverse a definition of a holistic industry. Alternatives to a holistic view have continued to emerge periodically (Groak 1994; Powell 1979). Recent support for the holistic idea can be observed in Chapter two of this thesis, both industry/practitioner familiarise (Egan 1998; Latham; 1994 and Fox 2003). From the three publications, it has been suggested that the dialectic between a disjointed/collective view and a holistic view, has been apparent within the mainstream construction literature. Yet, there is a growing body of knowledge from mainstream management researchers, which increasingly supports a holistic view. The argument, which is presented in this chapter, will be based, therefore, on a holistic definition of the construction industry. The following section is divided into six parts. Each section offers either a critical or an empirically informed insight into the culture of the construction industry in Kenya and the UK.

3.2.1 The Unstable Construction Industry
The present day construction industry in Kenya and the UK is characterised by the need to cope with change. Greater demands from clients for a better quality heavy construction engineering project delivered on time and within budget are now part of the service ethos. The cost, time and quality triumvirate now forms an integral part of industry’s culture. However, this stage has not been reached in UK without some pain and one could argue that the industry still has a long way to go before many clients are content with its performance. Reports on the construction industry have been significantly, regularly, and, too often, ignored (Egan 1998; 2002; Latham 1994; Mitullah and Wachira 2003). All these reports have stressed the need for change, greater efficiency, and stronger client focus in the construction industry. The construction procurement process is still overwhelmed with problems, despite the
emergence of alternative procurement forms, value management, collaborating, alliances, etc. The construction industry in Kenya and the UK must address complexity if its aim is to become efficient. The way in which heavy construction engineering projects are procured has been forced to change because of the economic, social, financial, political, and legislative environments. A primary reason for these changes has been the never-ending drive for more efficiency and greater competition, nationally and internationally.

Fundamentally, clients are in a position to drive the change process in construction. In today's disorderly construction environment, clients have forced major structural and procedural change onto the industry through the increased use of alternative procurement methods (for example integrated project management teams, collaborating, re-engineering, benchmarking, and many other developments (ECI 1997; Egan 1998; 2002; Latham 1994). Client pressures have led to a major reorientation of design and construction services being offered, for example project and facilities management. Other activities which include design, project management, quality control, competitive tendering, and contractor selection are seen as enduring activities in construction. The methods of delivering them are varied and many are subject to rapid and continuing change. The modern client advisor must be aware of the trends occurring and be prepared to adapt in this unstable and demanding environment (Egan 2002). The rapid change and greater demands for accountability and high quality construction projects supported by rigorously applied professional and construction services will be the standard that operates for the near future (Egan 2002).

3.2.2 Project based Industry
The construction industry is habitually cited as the essence of a project based sector (Dainty et al 2007). The working lives of most construction workers in Kenya and the UK are characterised by an endless progression from project to project. Usually, exceptional project construction firms are established for every momentous new construction project. According to Cherns and Bryant (1984) the term 'temporary multiple organisation' is used to describe the project team formed on every project. Bresnen et al (2004) stated that each temporary multiple organisation consist of a complex and temporary set of organisational relationships, administered by project
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defined interactions. A number of construction projects tend to be constructed by a blend of contractors and project teams most of who will not have worked together before and are not likely to work together again. Each construction project brings together a range of different cultural recipes and employment rules. Senior managers are engaged in an endless process of setting out objectives of the firm with those of the project. For a number of project teams, any commitment to a project is arbitrated by a permanent sense of uncertainty regarding which project they will be working on next (Turner 1998). The competitive tendering method combined with cyclical demand means that few contractors can be confident about steady project workloads (Dainty et al 2005). Such factors militate against steady employment regimes and long-term venture in the 'psychological contract' between construction staffs and their firms (Dainty el al 2005). In part, the lack of solidity in the construction labour market is attributable to the physical characteristics of the industry's products.

Bresnen and Marshall (2001) further confirmed that each construction project is different, both in terms of the product and in terms of the project team involved. This makes it difficult to attain the degree of repetition and routinisation achieved in other sectors. However, the characteristics of construction projects are common across developed and developing nations, and they do not themselves necessarily decode into casualised employment practices. Indeed, among the developed countries the UK occupies an unusually tremendous position in terms of its deregulated and labour market (Dainty et al 2007). The argument that the construction sector is a project based industry is common and this is used as a justification not to address deep-rooted problems regarding employment patterns in the industry. Equally, the researcher agrees with Dainty et al (2007), who argued that supporting arguments tend to be biased towards large organisations and mega projects, neither of which are representative of the sector as a whole. It is often forgotten that around forty-five percent of the industry's output is routinely accounted for by repair and maintenance (Dainty et al 2007). While dependable statistics are difficult to acquire, one could insinuate that the repair and maintenance sector is even more populated by small contractors and single traders. On this basis, Bosch and Philips (2003) claimed that construction could be interpreted as a service industry. Furthermore, the employees that sustain the country existing property stock receive less notice than those involved in new construction. In this sense, the skills needed for repair and maintenance are
less prone to solution through suppose technical fixes such as pre-assembly and modularisation (Dainty et al 2007). Thus it seems that, little enough is known about ‘people and culture’ in the perspective of new construction; even less is known about ‘people and culture’ in the perspective of repair and maintenance.

3.2.3 Employment practices in Construction
Self-employment and a high dependence on subcontracting have always been apparent within the construction industry and that both have essential roles to play. Dainty et al (2007) believes that the issue is somewhat the degree to which the sector depends on such guidelines and the point to which destructive side effects can be eased. The issue of insecurity at work in the construction sector is hardly new but -the level of self-employment is inevitably concurrent with the government’s readiness to endorse labour market regulation. For instance, since the mid-1970s there has been a dramatic reduction in directly employed labour by both contractors and sub contractors in favour of widespread outsourcing (Dainty et al 2007). A number of construction firms operating in the UK are practically all exemplars of hollowed-out flexible organisations with very little directly employing operative labour (Atkinson 1984). Dainty et al (2007) affirmed that the situation in UK has been aggravated by decades of government policy, which has done little to regulate industry employment, either through direct labour market governance or via public sector procurement pressure. Of particular worry has been the way a number of contractors have steadily sought to avoid statutory responsibilities through bogus self-employment with momentous implications for job security, training and health and safety (Dainty et al 2005; 2007).

Therefore, the fractured labour force that emerges from the industry is diverse and includes unskilled, craft, managerial, professional, and administrative workers. The above individuals function as part of a large workforce, working in informal, ad hoc teams to complete short-term project objectives in a number of environments (Cox and Thompson 1997). This is in turn maximises additional pressures to ensure flexibility in both employment practices and working practices (Bresnen et al 1985; Loosemore et al 2003; Yaw and Ofori, 1997). From the above, it can be observed that the unfavourable implications of the UK industry’s disintegration and casualisation are particularly apparent in the area of skills. As verified in this
research, organisations who do not offer any long term job security are, justifiably, unwilling to invest in developing their workforce skills for fear the relationship will not be long enough for them to realise that investment. Cully et al (1999) and Forde et al (2005) claimed that full time permanent employees are far more likely to receive training than are their insecure and unskilled colleagues. In their analysis, Druker and White (1996) argued that, in the UK construction and engineering are the sectors for which the maintenance of a legally enforceable levy and grants scheme to support training investment has remained vital. For example, the construction industry training board (CITB) was one of the few bodies that survived when the British government dismantled a number of the collective, sectoral arrangements for developing skills in the 1980s (Dainty et al, 2007). This is just one example of many where the construction industry in UK has engaged aspects of a training infrastructure long since discarded by other sectors.

In recent years, the issue of skills has grown in status within Kenya and the UK, mainly in recognition of the low-skills stability from which the two countries suffer (CEC 2000; Keep and Mayhew, 1998; Mitullah and Wachira 2003) and the supposed productivity gap between the UK, the US and mainland Europe (Bloom et al, 2004). From the literature reviewed, it has been observed that research has consistently shown that the construction industry continues to experience recruitment issues at both operative and managerial levels (Agapiou, 2002; Dainty et al 2005; Dainty and Edwards, 2003). Bloom et al (2004: 3) stated that the skills shortage is also noticeable in terms of the quality of skills available to firms. This may be due in part to the qualification structure, which now underpins construction training. A number of authors (Callender, 1997; Grugulis, 2003) have disapproved the National Vocational Qualification (NVQ) for its lack of academic rigour and strength of technical content. In recent years, there has been a broad recognition that skills development stems from a combination of formal education and work based experience (Bloom et al, 2004; Ford, 1992). This demands that construction firms be involved in providing appropriate training experiences for their workers. However, as Grugulis (2003: 470) asserted, construction firms generally respond to immediate and hence short-term skills needs, with few planning skill formation and development over more than a two-year period. Due to such employment decisions and the
industry's continued dependence on outsourcing it has led to an enduring paucity of high quality skills within the UK labour market.

3.2.4 Work diversity in UK

Historically, the UK construction industry is male dominated in its both craft and professional positions. Most of the women who embark on careers within the industry are engaged in ancillary or supporting roles (Fielden et al. 2001). Dainty et al. (2007) stated that the industry workforce is segregated both vertically and horizontally by sex. A parallel situation is also noticeable in terms of the small numbers of members from the minority ethnic communities in the workforce. For example, results of work by Ansari et al (2002) showed that only two percent of construction workers comprise Black and Asian people, compared with an economically active population of five percent. From the above statistics, it could be suggested that the construction sector in the UK is white male dominated. Furthermore, a study by Newton and Ormorod (2005) showed that the representation of disabled people within the industry is low despite construction being one of the most likely sectors to disable its workforce. This barrier to cultural formation is known to have a number of significant implications. For example, in studies by Ansari et al. (2002) and Dainty et al. (2000) it emerged that minorities who decide to enter construction had a problem with developing a career. This lack of minority cohesion has led to a perception that construction is unsuitable for groups under-represented within the sector. The literature reviewed, showed that demographic change and workplace transformation has rendered workforce diversity and equal opportunities. It was also found that demographic change and workplace reform are the most pressing challenges facing contemporary construction organisations (Dainty et al. 2007). Unfortunately, impeding recruitment to under half of the population (white, non-disabled men) is likely to adversely limit organisational growth and development, while treating those from underrepresented workforces differently is unfair and ethically unjustifiable.

In Bagilhole (1997), it emerged that the industry is under utilising the full range of skills and talents in the population. In order for organisations to increase their efficiency and effectiveness, it is essential for firms to project a more pluralistic self-image and that a diverse workforce leads to a better informed, more innovative and
adaptable environment, which is closer to its customers needs (Bagilhole, 1997). The recognition of diversity as a model represents a shift in emphasis from legislation in support of equal opportunities, towards a voluntarist policy of diversity supported by an espoused ‘business case’ (Dainty et al 2007). The equality of opportunity remains central to any civilised community and to the quality of life for those who work within the sector. It could be insinuated that some of the reasons for the sector’s lack of achievement in attracting a more distinct workforce of new entrants is most likely rooted in its ostracised image. As established in this research, it is vital that cultural complexity in construction be understood within the broader context of societal change.

3.2.5 Barriers to change in Kenya and UK

Culture is an intricate and multi-faceted phenomenon, which develops through ongoing social interaction within particular contexts (Barthorpe et al 2000; Meek 1988). Change, therefore, is strenuous to create and the process is likely to be lengthy. The literature reviewed showed, that research into people issues connected with cultural change in the construction industry has been partial. As Dainty et al (2007), highlighted the overriding focus has been on research for management, rather than research of management. It is crucial for the construction research community to strengthen the debatable assumption that culture is an organisational variable, which is subject to conscious manipulation. In reality, the intact dialogue of culture change within the construction sector appears strangely detached from the broader defining culture (Legge 1994; Ogbona and Harris, 2002; Willmott, 1993). Dainty et al (2007) states the management of change is sated with examples of failed attempts to change culture. These have focused on the content of change programmes at the exclusion of understanding the context and process change. A more nuanced understanding of construction culture and recognition that it is mutually comprised with its structure are required if cultural complexity is to be accurately understood and responded to.

Most recently, the UK construction industry’s ‘Strategic Forum’ proposed targets for the improvement of its people management practices within its ‘Accelerating Change’ Report (Egan 2002). Unfortunately, the proposed recommendations made, largely consist of simplistic exhortations to the construction industry to tackle its past failings with little acknowledgement of labour market constraints which obstruct change. The
flows of labour between developed and developing nations have always been a feature of the construction industry (ILO, 2001). In Kenya and the UK, the migrant workforce has always added much to the construction industry and to the dynamism of society. Then again, too often they are employed under different terms and conditions from local workers with whom they are working alongside. British workers continue to work overseas in large numbers, especially in professional and technical groups. From the literature search, it emerged that the scope to which the UK construction industry relies on developing nations to train its workforce is questionable (Dainty et al 2007). In the UK a substitute strategy used by the industry has been the attempt to alleviate its workforce requirements by redesigning jobs to reduce the skills needed (Dainty et al 2007). This suggestion for solving the skill shortage has formed a popular discussion topic for various industry commentators and policy bodies in recent years. For example, Teece et al (1997) indicated that concerns about skills development are often weakened by managerialist dialogues that mobilises opaque concepts such as dynamic capabilities. Despite the oratorical claims to boost flexibility and continuous improvement, a lack of any established relationship with performance remains (Scarborough, 1998).

3.2.6 The Challenging Future for Construction Industry

In Kenya, Mitullah and Wachira (2003), and in the UK Latham (1994) and Egan (1998; 2002) have urged everyone in the construction industry to improve their performance with higher levels of productivity and efficiency. In fact, the manufacturing industry has provided the model for many of the changes and innovations occurring within the construction industry. It has been observed from the literature that improvements have already been made in the following areas within the UK construction industry (Dainty and Geoffrey 2005; ECI 1997; Egan 1998; 2002):

- integrated approaches to design and construction services for clients;
- strategic alliances, strategic and project partnering have been adopted by both public and private sector clients as a means of establishing longer term relationships between client and project team members; and
- construction engineering, lean construction, supply chain management and re-engineering of processes that are now firmly established in the manufacturing
sector have filtered through to the construction industry and are now becoming part of its approach to process improvement.

Evidence showed that the situation in UK is certainly improving, but there is a long way to go and more effort is required. However, a great barrier to progress on many of these fronts in Kenya is the dissimilar nature of the industry caused by the large number of small firms (Mitullah and Wachira 2003). This is a characteristic not likely to change greatly in the future. The registration of contractors is not firmly established in Kenya. What are likely to be the main changes over the next decade? As Egan (1998; 2002) argued, changes in construction will occur on many fronts. The application of information technology in the management of construction projects will continue unabated. This is perhaps surprising since success is more likely to occur in smaller parts of the system, rather than the grand vision of a fully functioning comprehensive system for both design and project management. E-commerce will be the aim, but the construction industry in Kenya is unlikely to proceed with the technology due to lack of funding in research and development. The lack of progress here should not be viewed as failure, as in the past our social systems have always been seen as lagging behind the technological ones we invent. Alternatively, as Bennett (1985) suggested, we will tend to misjudge social change and undervalue technological advancement. As it has been argued in this research, the pre-eminence of client needs will continue and not decline (Egan 2002). Servicing client requirements will saturate all those who are involved in the procurement of construction facilities.

3.3 CULTURAL COMPLEXITY RELEVANCE IN PROJECTS
Projects are a common way to carry out different type of tasks, which are in a number of ways unique. Even, if the number, complexity, and scope of the big heavy construction engineering projects have been increasing (ECI 2006) the project as a way of organising holds its popularity. For example Wickramatillake et al (2007), pointed out that the construction of London Heathrow Airport Terminal 5 has been a challenge. It has been a demanding project due to its size, delivery schedule and managing the construction within a live airport. The baggage handling system is one of the worlds largest and forms one of the most complex systems within the new terminal. The complexity is mainly due to the large volume to be accommodated and
communication between internal and external control systems. The continuous need for speed, in heavy construction engineering projects, cost and quality control, safety in the working environment and avoidance of disputes, together with technological advances, environmental issues and fragmentation of the construction industry have resulted in a spiralling and hasty increase in the complexity of projects. It has today reached a level where senior construction managers must consider its influence on heavy construction engineering project success very seriously. It is crucial to highlight that heavy construction engineering projects are made up of a multitude of interacting parts. Generally, it could be suggested that project management understands the project as an ordered and simple and thus predictable occurrence which can be divided into contracts, activities, work packages, assignments etc to be accomplished more or less independently. One could also see a project as a mainly sequential, assembly-like, linear process, which can be planned in any degree of detail through an adequate effort (Koskela and Howell 2002). Consequently, one could indicate that construction is generally complex in nature.

The cultural weight that each contractor brings to a project is more often than not unconscious. Part of our culture may be conscious and explainable to others. However, few of us are completely aware of how our actions and ways of thinking are dictated by more hidden or in fact unconscious values. For example, attitudes towards authority, approaches to carrying out task, concern for efficiency, communication patterns, and learning styles. It is significant that, cultural norms and values are passed on from generation to generation. No one culture is right and another wrong but within each cultural grouping, whether organisational or ethnic, there is a shared view of what is considered right or wrong, logical and illogical, fair and unfair. These norms do affect the ways project teams communicate and behave within project environments. Based on the studies of Hall (1960s), Hofstede (1970s and 1980s), and Trompenaars (1990s) the human interaction does not occur in a vacuum or isolation. Instead it takes place in a social environment governed by a complex set of formal and informal values, norms, rules, codes of conduct, laws and regulations, policies and as well as in a variety of organisations. Shaping as well as being shaped by these governing mechanisms is something that we are used to refer as culture. Cultures materialise and evolve in response to social cravings for answers to a set of problems common to all groups (Hofstede 1991). In order to survive and to
exist as a social identity, every project group regardless of its size has to come with solutions to these problems.

3.4 COMPLEX CONSTRUCTION PROJECT DEVELOPMENTS
The escalating complexity of multi-purpose construction project management, emerged from the growing demands of clients and the increase of multi-disciplinary and multi-supply chains that are gathered together to deliver the desired multi-million projects. The diverse aims both within and across the project teams lead to a series of complex scenarios. For example, Turner (1998) stated critical front-end decisions are needed on procurement strategies, followed by vital strategic design decisions, assortment of contractors, suppliers and service providers, in turn followed by pronouncement on construction techniques, programming and resource use in the area of overall project delivery from a client’s viewpoint. The decision criteria of a number of clients keep mounting in terms of numbers and complexity. For example, Egan (2002) highlighted that experienced clients have started to include environmental sustainability and whole life considerations. Previous decisions on project delivery have often been based on satisfying solutions, given the unusual shortfalls in project tools, information, and time to devise anything better. However, it is also worth making the point that swift developments in information and communication technology tools and artificial intelligence aids have fortunately expanded the scope of and options for dealing with these complex circumstances (Murray 2000).

As established in this research, construction projects are invariably complex and have become more so. Baccarini (1996) stated that the construction process could be considered as the most complex undertaking in any industry. However, (Morris 2000) emphasised that the construction industry has experienced great difficulty in handling the ever-increasing complexity of major construction projects. It is essential to assert that the concept of project complexity has received little in-depth attention in project management literature. A review of the literature showed that certain project characteristics present a basis for shaping the appropriate managerial actions needed to complete a project successfully (Turner 1998; Winter et al 2006). Complexity is one such significant project dimension. As Bennett (1991) claimed, practitioners habitually portray their projects as simple or complex when they are discussing
management issues. This suggests a practical acceptance that complexity makes a difference to the management of construction projects. As Morris and Hough (1987) write, it is not surprising that complex construction projects require an outstanding level of management and that the use of conventional systems developed for ordinary projects have been found to be unsuitable for complex projects. The complexity of project management is in turn dependent on the complexity of the project. As confirmed in the literature, the magnitude of complexity to the project management process is widely accredited, for example:

- complexity is a key decisive factor in the selection of an appropriate project organisational form (Bennett 1991 and Morris and Hough 1987);
- complexity is often used as a criteria in determining a suitable project procurement arrangement (Wozniak 1993);
- as CIOB 1991 and Rowlinson (1988) claimed, complexity affects project, cost, time, quality, and objectives. Generally, the higher the project complexity the greater cost and the time; and
- project complexity hampers the clear identification of objectives and goals of construction projects (Morris 2000).

A common strategy of defining complexity is to quantify it in various dimensions such as number of stakeholders, number of units and amount of different resources. Baccarini (1996) definition is centred on systems theory. Baccarini's analysis on project complexity is based on two dimensions: organisational complexity and technological complexity. It is essential to underline that when project complexity is considered, project managers have to spell out to which of the projects dimensions they refer. Baccarini showed how differentiation and interdependency transpires through technological and organisational complexity. Baccarini countered this argument by suggesting that organisational complexity based on differentiation can be either vertical or horizontal. Horizontal differentiation is determined by the number of organisational units and task structure i.e. project job and specialisation, whilst vertical differentiation is the depth of the organisations hierarchical structure. The other feature of organisational complexity in construction projects is the degree of interaction between organisational elements and operational independencies.
Technological complexity by differentiation is determined by the array of outputs, inputs, tasks, and the number of specialities involved in a project. Thompson (1967) suggested that the level of organisational as well as technological complexity comes in three elements of interdependencies, namely, pooled, sequential, and reciprocal. Reciprocal interdependencies signify the highest level of complexity, both organisational and technological (Baccarini 1996). Consequently, the functions of a project’s organisational structure consist of distribution of tasks and responsibilities, definition of relationships in communication and reporting, and authority for project decision making. As Egan (2002), stated, large construction projects are typically characterised by the engagement of diverse contractors and project teams. This leads to the formation of a temporary multi-cultural project structure to manage the construction project.

From the above, a multi-cultural project structure can be presented in two dimensions. The first feature is based on a relationship between complexity and uncertainty. The second feature involves the work of Baccarini (1996). Williams (1999) claimed that uncertainty is dwelling in the instability of circumstances and assumptions upon which the project is based. Evidence shows that as the project matures in real time, the uncertainty and hence project complexity is minimised (Meredith and Mantel, 1995). Uncertainty can make project situations appear weighed down with danger. The researcher noted that Williams’s discussion of complexity and uncertainty is similar to that of Turner and Cochran’s classification of project complexity. Joining in with the debate Christensen and Poulsfelt (2006) discussed uncertainty in two dimensions: contextual and operational uncertainty. Their definition of operational uncertainty is parallel to Turner and Cochran (1993). The four authors suggested that in order to minimise contextual and operational uncertainty the handling of project information is vital. Contextual uncertainty depends on the knowledge of the project manager has about the circumstances in which the results of the project will be conveyed. External factors can be looked at as the driving force for uncertainty in projects the competence of the project manager and buyer. Complexity will multiply through higher demands on the project’s performance.

The issue of complexity is the prime-focus in today’s project management literature. Project complexity can be found in three dimensions: outside the project, inside the
project and finally the environment outside the project. One of the key reasons why project complexity varies is that clients have different goals, interests, and expectations of the construction project that can originate from different levels. A second reason is that inside a construction project the project process is often focused. Moving from one phase to another probably means that the aim is on project result rather than process. Finally, a third reason is that in different project phases you find different driving factors.

3.5 MANAGEMENT OF PROJECT COMPLEXITY

The three main objectives of project management are to meet a specified target within cost and on schedule (time) (Meredith and Mantel 1995). All the three objectives are interconnected and the primary aim of the construction project managers is to manage those objectives and the relationships between them. There are always a number of ways to achieve the project’s objectives; however, the result on time and within cost will vary (Maylor, 2003). Maylor further argues that the key constraints are cost, quality, and time. Quality is an element that has to do with standards that will appraise the output of the process as the project process itself. This element is often looked as the project’s scope. All construction projects by definition have a time constraint. Cost refers to resources needed to carry out the project work. Project scope, time, and cost are orthogonal elements. From the construction project management’s point of view, it is crucial for the project manager to relate the management of the project complexity to the project process. Meredith and Mantel (1995) suggested that, at the start of a project, it is vital to forecast on how uncertainty might affect project delivery performance, cost, and schedule. In project management, it is common to refer to very high levels of uncertainty as sources of risk (Smith 1999). Project managers must make a decision on which risk levels are acceptable based on technological, economic, social, and political factors.

Project managers must have a number ways of managing complexity. Baccarini (1996) proposed that structural complexity could be managed by applying integration, that is, by communication, control, and co-ordination. It is vital to encode the order between events and activities. Unforeseen events do maximise complexity and the changes can multiply within the project, which makes time delays difficult to manage and monitor. The application of integration to manage project complexity is
addressed by Laufer et al (1996). Project management styles will depend on: managing the project in a turbulent environment, from a multi-disciplinary teams, managing functional project plans consecutively and interdependently, overlap design and execution, develop, and maintain project communication, and simultaneous management, monitor concurrently the utilisation of means, the accomplishment of objectives, and their validity (Laufer et al 1996). Simon (1977) presented an explanation to why projects build up organisational systems such as hierarchies, to master structural complexity. One merit Simon discussed is that they are easy to manage, i.e. hierarchic systems need minimal information transmission among their parts compared to than do other types of organisational solutions. Secondly, changes are easier to manage since the components of hierarchies themselves are stable systems. Lastly, the complexity of a firm with a hierarchical structure, as examined from any particular position within it, becomes almost independent of its total size.

Flourishing project management requires analysis of how project complexity affects the project constraints of quality, cost, and time. The researcher suggests that clients and senior managers in Kenya and the UK require this knowledge in order to manage the complexity of heavy construction engineering projects. As argued, it is crucial that throughout the project life cycle clients and senior managers develop plans and standardise with the purpose of managing project complexity in the most efficient way. As stated by Emmit and Gorse (2007), incessant communication and coordination during the project’s life cycle facilitates effective management of project complexity, which is sustained by Baccarini (1996), Laufer et al (1996) and Williams (1999). However, it is essential to leave room for team adjustments within the standardised framework of construction project management. This allows flexibility for the project team to create project specific solutions in order to maximise commitment on the individual level and thus increases project impetus and project success.

The primary function of culture in a project environment is to minimise uncertainty and ambiguity in everyday project team interaction and decision making by providing a framework for situational interpretation and limiting alternatives for appropriate behaviour and response. Cultures surface and develop in response to social cravings for answers to a set of problems common to all groups. In order for a project team to
survive and to exist as a social identity every project team regardless of its size has to come up with solutions to these problems (Hofstede 1991; Schein 1985). These solutions then become characteristic for the group, which separate them from others. The following section presents factors that influence project complexity in Kenya and the UK. In seeking to understand complexity on projects, the following section is divided into project perspective and cultural perspective.

3.5.1 PROJECT PERSPECTIVE

Construction projects and project participants are all different and the big challenge facing clients and senior managers, which a business manager is fortunate to be almost without, is the need for setting up a construction site team spirit almost immediately (Egan 2002). In a construction project, the project team is new. It is brought together for the project and its participants are not chosen as project team players but by the lowest price tag. They are not the projects employees but leased from their home firm, which probably has other success criteria than the project in question. Since the project is new and the site is unbroken, nothing at all is as it was in the previous project. A second problem facing senior managers is that they need to act fast. In a project environment there is no such thing as a second try. The culture of team working must be introduced from the very beginning and kept all the time. In addition, service and support must be introduced in order to gain confidence and the project’s targets must be clearly communicated, particularly if the construction project is one where recurrent changes may be expected (Emitt and Gorse 2007).

The single project perspective sturdily suggests reasons for the fragmented and adversarial atmosphere of the construction industry in Kenya and the UK. Rethinking Construction (Egan, 1998) and current reports have reflected on the causes of this negative atmosphere and complexity in construction. Their general conclusions highlight the individualistic and competitive focus of the industry. Some of the proposals for change by the construction reports in the UK (Egan, 1998) such as, integrating teams, collaboration in the supply-chain, replacing competitive tendering with long-term relationships and improving the industry’s commitment to people, clearly indicate the need to address complexity in construction projects. The inference is that project teams in the current climate, accept that their existence is temporary and focus solely on the outcomes of a particular project, with little or no
regard for concurrent or future projects. A number of participants in this study suggested that the single-project outlook pervades every aspect of construction and is arguably the primary cause of the industry's problem in Kenya and the UK (see findings Chapter). Two government sponsored reports into UK construction, Egan (1998) and Latham (1994), each drew attention to the complexity in the industry's project delivery. The industry needs to integrate its processes and products to ensure that better value can be delivered to the client. This approach involves clients, designers, main contractors, and subcontractors working together as an integrated team, rather than as a disparate collection of separate organisations. A follow-up report (Strategic Forum for Construction, 2002) made the case for a unified team even more strongly.

In their research Blismas et al (2004), identified ten main factors influencing project delivery on construction projects. The ten factors were grouped under four headings: environmental influences, client influences, third-party influences, and planning influences. Environmental factors exacted the greatest overall influence on project delivery, constituting five out of the ten factors. Two of the characteristics that aggravated the effects of these factors were uncertainty and immitigability. These two factors are by nature unpredictable and, therefore, uncertain in action and effect. In addition, they are generally beyond the control or influence of the organisations. The second factor was client influences. Although a number of decisions taken by the client have ongoing effects on construction projects, two main influencing factors that were acknowledged as originating from the client body were indecisiveness and non-uniformity. In their findings, non-uniformity of the client resulted in inter-departmental differences and constant changes to the projects. Changes made were due to misunderstandings between departments, indecision, insufficient information or altered circumstances. Lack of client leadership and internal communication emerged as causes of complexity in projects. The third factor was third party influences. Blismas et al suggested that third party influences, external to the client were generally disruptive to project delivery. It was found that, third parties had no vision of project planning and, therefore, usually applied enormous pressure on individual project phases. While a number of authors have argued the case for improved management practices that could lead to a better-unified team integration across the different tiers of the construction supply chain (Bresnen and Marshall,
1999; Briscoe et al., 2004; Wachira and Mitullah 2003), the reality proves difficult to attain.

Kenyan and UK construction, with a few exceptions, remains typified by adversarial practices and disjointed supply relationships. Commonly, clients appear to distrust their main contractors, who in turn maintain an arms length relationship with their subcontractors and suppliers. Heavy construction engineering projects are treated as a series of chronological and mainly separate operations where the individual players have very little stake in the long-term success of the resulting building or structure and no commitment to it. It has been widely suggested that supply chains can exist in a number of different forms and can vary significantly in their complexity and diversity (Cox, 1999). Construction supply chains on larger construction projects involve hundreds of different organisations supplying materials, components and a wide range of construction services (Dainty et al. 2001). A continued dependence on a disjointed and largely subcontracted workforce has arguably amplified the complexity of this supply network and delimited opportunities for process integration. In reality, since the 1970s, the industry’s reformation has given rise to the creation of what now appears to be an institutionally entrenched low-skill, poorly equipped and labour intensive sector (Borsh and Philips, 2003; ILO 1972). A number of contractors operate as flexible firms, exemplifying the hollowed out structure characterised by extensive outsourcing and an almost elite focus on management and coordination functions (Atkinson 1984; ILO, 2001). This demonstrated a problematic context for attaining the integrated delivery of the industry’s projects and processes. Despite the complexity that the industry faces, it is vital that it expands its supply chain practices to deliver value to the client, rather than simply seek to generate short-term cost savings.

3.5.2 CULTURAL PERSPECTIVE

In this section, the researcher provides a theoretical basis of people and culture issues affecting the construction industry. The argument presented in this section is that in order to mitigate the industry's cultural complexity challenge it will require a concerted and joint effort over a sustained period. Several issues emerged which offer directions for future effort in both research and practice.
3.5.2.1 Human skills
There is no doubt that a wide range skills and human resources are needed for a flourishing construction business. As pointed out by Egan (1998) and Latham (1994), construction is a highly complex process involving a large number of specialists, a large range of materials, specialist plant and equipment, contractors and a vast variety of unique products. From the above, one could easily imply that of all the occupations that an individual could choose, construction is the most complex. It is worth highlighting that, with construction there is a need for a wide range of specialists each with their own skills and areas of special knowledge. As discussed by Lawrence and Lorsch (1967) in their research of differentiation and integration within organisations, for a higher level of performance the various specialists need to be fully integrated as a team. Highly educated and trained individuals as well as possessing specialist skills need to have acquired general ones, so that they may communicate effectively with each other and co-operate (Fox 1996; 2002; Goleman 1996). A series of government reports (Egan 1998; 2002) have stressed the need to integrate project teams in the construction industry more effectively. However, it is worth pointing out that human capital cannot fully realise its potential unless there exists appropriate co-operative attitudes, which go hand in hand with specialist knowledge (Rwelamila and Hall 1994; Walker 1995). At the heart of any heavy construction engineering project is teamwork and it is no accident that Latham and Egan stressed the need to build an integrated team. Egan (2002) suggested that the construction industry in the UK needed to recruit three hundred thousand people. Getting the right individuals with the right skills is a priority but so too is updating and developing the skills and, where applicable, management abilities of its existing staff.

3.5.2.2 Self-reliant Construction Culture
In the UK, the construction industry has well-established skilled specialists, education and training, all of which contribute to a self-reliant construction culture. Some of the research studies have highlighted that major contractors have been too strong and powerful for the good of the industry as a whole (Ball, 1988; Cockerhill, 1993). Ball suggested that many of the industrial relation problems in the 1960s and 1970s stemmed from a manipulation by main contractors in order to extent more capital from their clients through claims. For example, in Kenya main contractors have been very influential on political leaders and political parties, such that the government has
awarded construction contracts when they are not really justified. It is only in recent years that this latent influence has become more known to the people of Kenya. However, it does show the strong influence of contractors and the construction culture. Such self-reliant strength illustrated how Kenyan contractors not only have understood the need for government support but also have actively introduced steps to ensure it to their own advantage. This behaviour is of course not accepted by a number of contractors in Kenya who regard it as covert and not in the best interests of the society as a whole.

3.5.2.3 Long-term vision on projects
If both the Kenyan and the UK construction industry want to accomplish better practice, there must also start thinking about what constitutes best practice. Fox (1999) identified four variables that could be grouped under the theme of better practice. In sequence, these were ethical behaviour, communication between government and contractors, attention to organisation culture, and government understanding of the construction industry. The variable of ‘attention to organisation culture’ had a common concept of values, which connected culture with ethical behaviour. Culture is all about shared values. The linking of individual values in order to introduce a construction culture is clearly important but lacking within the Kenyan and the UK construction industry. Communication between government and contractors needs to be as strong. From the literature reviewed, some of the studies suggested that since most governments are major clients of the industry (Hindle, 2000; Milford, 2000; Wells, 1998) they should use their influence as a client in order to encourage better practice. From the government reports (Egan, 1998; 2002), it could be argued that the UK already supports this; however, much still needs to be done to improve the cultural complexity within the industry. If both governments can take prominent roles in encouraging best practice within the sector, through its role as a client and its good knowledge of the industry as a whole, then much can be improved.

For a successful project outcome, clients need to enter the construction process with a clear understanding of their business needs, project requirements, and their environmental and social responsibilities and hence the functionality they require from the finished project (Egan 2002). Without this clarity at the outset, there are
likely to be changes throughout the delivery process resulting in waste, duplication, poor design, and discontent for everyone. To help inexperienced clients draw on the knowledge of experienced clients, Egan (2002) proposed a generic process map as shown in Figure 3.5.2.3. While all the steps are important, Egan believed that, to date, inexperienced clients do not invest adequately in the first two, which are most important if a project solution is to be achieved.

Figure 3.5.2.3: Key Steps a Client must consider when faced with a Business Need

Source (Adapted from Strategic Forum for Construction, 2002, pg. 20)

From the government publication (Egan 1998; PER 2003; ROK 1997), it could be argued that this variable does need a champion for change. Fox (2003) asserted that a vision is something that needs to be formulated consensually amongst all stakeholders within the industry if it were to be successfully. A vision can only be strong if it affects the individuals who need to receive it. A strong vision and a coherent strategy need strong leadership. In seeking to institute strong leadership, clients need to
improve their understanding of how construction can best meet their business needs and help lead the process of the creation of integrated teams. Integrated project teams deliver greater process efficiency and by working together over time can help drive out the old adversarial culture, and provide safer projects using a qualified and trained workforce (Egan 2002).

Clearly, the issue of client leadership in both countries needs to be addressed. Inexperienced clients should understand what value means to them. Lack of clarity at the outset of a project is likely to lead to complexity throughout the delivery process. Any force of change should come from its proactive role towards excellence and from its own individuals taking responsibility for both organisational and personal development (Fox 1999). The inference is that collectively the construction industry in Kenya and the UK need to alter its culture from a reactive one to a proactive one. Fox’s model was developed from an international survey, and this embodies a generic conceptualisation, rather than one developed on only one particular nation.

3.5.2.4 Communication

Communication in project teams is an important factor in the successful completion of projects. From the literature reviewed, communication between firms and individuals temporarily brought together to realise a construction assignment is an activity that is undertaken constantly but it is an area that has received little attention from the research community (Emmitt and Gorse 2007). A number of government led reports in the UK (Egan, 1998; 2002; Latham 1993, 1994) have consistently highlighted the difficulties caused by organisational systems in which project teams operate. The inadequacies discussed seem to emerge from poor interaction practices. The nature of interaction affects the strength of relationships between actors and in the end colours their ability to transfer knowledge and appropriate task-based information to complete construction projects successfully. The first specific review of communication in the UK construction industry was by the Tavistock Institute with two publications, Communication in the Building Industry: The Report of a Pilot Study (Higgin and Jessop 1965) and Independence and Uncertainty (Building Industry Communications 1966). These two reports tentatively covered some of the issues discussed in the Emmerson (1962), Phillips (1950) and Simon (1944) publications. The Tavistock report highlighted many of the issues concerning the separation of design and
production teams, a theme that persists in the construction research literature. Recent publications instigated by the UK government (Egan 1998; 2002) follow a similar path in recommending improvements and proposing ways in which the construction industry should be organised. From the literature search, the researcher found a paucity of scientific research in Kenya. However, from the interviews, participants had the same message of improving existing practice within the sector. This will be discussed in the findings chapters.

The problem with a number of communication researches is that they were conducted with little attention to culture. Emmitt and Gorse (2003), suggested that culture influences communication (intrapersonal, interpersonal, intergroup, organisational and political). The key issue that emerges with studying communication in construction projects is that different individuals are drawn from a diversity of educational and cultural backgrounds, thus barriers to effective communication are sure to exist and cannot be ignored. As Emmitt and Gorse (2003), stated, individuals on a project team have their own agenda, goals, and experiences that differ from the next individual in the project information chain. This, therefore, influences the interaction and participation of individuals. In particular, it influences the efficiency of communication between them. While free access of data is possible within a company, access becomes difficult when looked in terms of the temporary project environment. Some team members may decide to hold information as means of gaining some form of advantage (i.e. acting as a gatekeeper) partly because many of the project team members may well be competing for the same market segments, thus security and policing of the system become overriding, and restricting, factors (Emmit and Gorse 2003). The ability to sharing information within the construction industry is a complex technical and social problem with which the Kenyan and the UK construction sector is still struggling to come to terms.

Another worthy factor considering is the manner in which the industry as whole organise, design and construct projects. Government-led publications (Egan 1998; Latham 1994) have a propensity to encourage a particular approach, for example supply chain management, lean thinking, partnering etc. this temporarily distorts research into specific areas identified in the publications and some of the more complex underlying issues, common to all construction projects tend to be neglected.
There is of course no universal answer to the challenges facing project teams; instead, there are a number of underlying factors common to each construction project, regardless of context. The major factor is the temporary interaction of individuals and their collective ability to implement communication media effectively in dynamic situations. It is both the social life of construction projects and the formal and informal relationships that help and sometimes obstruct the delivery of a successful project.

3.5.2.5 Tribal Uncertainty
In Kenya, the issue of tribal discrimination goes beyond the top positions. It permeates to important middle-level and low cadre positions. It is with this in mind that in May 2007 the Kenyan standard newspaper highlighted the worrisome picture of a country increasingly retreating into a precarious mire of tribalism, a vice that may threaten the long-term stability of Kenya. Kenya consists of roughly forty-two ethnic tribes. To be sure, all these communities can fabricate enough qualified people to fill all top positions in the construction sector but it should take more than paper qualifications to fill these managerial positions. As argued in the standard newspaper, the very integrity of those being appointed to senior public, even where it is merited, is destabilised by tribalism. In the newspaper, it was further noted that tribal nationalism is so deeply embedded that even educated people express sentiments that those from certain communities cannot govern. According to SID (2006), Kenyans cannot see any major differences between the Kenyatta, Moi and Kibaki regimes. The conclusion of the above is that overall project complexity can be characterised by tribal uncertainty. Tribal uncertainty brings a further element to the idea of complexity on construction project teams in Kenya. Turner and Cochran (1993), characterised uncertainty in two dimensions, that is, uncertainty in goals and uncertainty in methods. Dealing with the second dimension, uncertainty in the methods to carry out heavy construction engineering projects has added complexity to project delivery in Kenya. If methods are uncertain, the fundamental building blocks of project management will not be known. Clearly, due to tribalism in organisations some of the characteristics of structural complexity have occurred on project sites. This has led to considerable interdependencies between project teams as methods on projects need to be tried and re-planned. Uncertainty in methods can be related to project teams. It could be suggested that by addressing the issue of tribal uncertainty
within the construction industry in Kenya, the industry can become more successful. This can in turn enable the industry to retain the quality of construction workers it needs, which would enable it profitably to deliver products and services for its clients.

3.5.2.6 Trust

It has been confirmed that the construction industry is known for being highly fragmented and operating through a network of formal and informal teams whose members originate from different cultures and disciplines. Trust is necessary in a project team, because the higher the interdependence between disciplines means that team members must rely on the functional expertise of other members. However, trust may also be difficult to establish in project teams because team members are less familiar with the methods of team members from other disciplines and geographic distance makes it difficult to create a shared understanding within a project environment (Cramton, 2000). Developing trust may be particularly difficult to develop in an integrated project team due to different work practices, which makes it difficult to develop perceived trustworthiness for a team member in a different discipline. While trust is a resource of unquestionable value to the construction industry, it is not necessarily straightforward to develop and maintain trust in project settings. According to Garfinkel (1967: 38-52), trust is so closely related to basic norms of behaviour and social customs that most actors take it for granted until it is violated. When a new project team is formed and when knowledge and information constantly flows among project team members, trust comes to the forefront.

It could, therefore, be argued that a number of people feel that higher trust for one’s colleagues will result in better project performance. Research, however, has found conflicting results (Dirk, 1999; Dirk and Ferrin 2001). Dirk and Ferrin (2001), suggested that rather than having a direct impact on performance, trust has a direct effect on other determinants of performance, such as job satisfaction, individual job performance, and problem solving. Dirk and Ferrin proposed two factors. Firstly, trust moderates the effects of motivation on performance by influencing an individual’s expectations about another’s likely behaviour, thus maximising or minimising the trustor’s motivation and output performance. Secondly, trust may also moderate the relationship between the trustee’s performance and trustor’s perception of follow-through, such that higher trust would result in higher perceived follow
through independent of actual performance. Thus, the trustor with the higher trust will have a higher perception of the trustee’s follow-through and job performance compared to than of an objective observer, for example, the project manager and not the client.

In high trust groups, motivation is directed toward group processes, while in low trust groups motivation is directed towards individual effort. One could apply the above team concept to the construction industry. For example, in an integrated project team, if you have an individual whom feels trusted he or she might end up contributing more ideas and thus have higher work output. In addition, if you have a trustor who trusts a team member within a project team, this could result to the trustor being more flexible and also providing more information resulting in a faster, better, cheaper work outputs. As suggested by Parsons (1978), we can only put our trust in individuals who share the same goals and values. This excludes trust between different cultural groups who do not share the same values. Whilst joining in with the debate Luhmann’s (1979) focus is different as he sees trust as the backdrop of his system theory. The central characteristic of modern societies is their overwhelming complexity. Complexity describes the multi-layered structured of society, where many levels operate mutually dependent on each other. This leads to the fact that each individual has a number of experiences and actions than he can realise. Therefore, reduction of complexity on projects is the main task for the construction industry. When trusting, we minimise the future complexity on projects, because we choose to consider only a subset of all possibilities, for example, a colleague will solve a project task satisfactorily. From the above, it can be observed that trust building on construction project teams is a complex issue facing the construction industry.

If a project team is to co-operate there needs to be a willingness to do so. This has been an issue in the Kenyan and UK construction industry. Over a period, successful partnerships on projects can develop and what can be defined as a good level of trust can develop. In turn, trust depends on openness, honesty, and integrity between the project teams. A number of studies and reports have encouraged a greater level of trust, co-operation and collaboration (Hong Kong Housing Authority (HKHA) 2000; Latham, 1994). As verified in Chapter Five and Six, trust is the most important
factor. To a certain extent, it could be argued that the strand of culture transparency is a political dimension. For example, it has been shown how the Kenyan government makes decisions incorrectly in order to present ‘correct’ images to the public. Making right decisions requires more effort in explaining to the key stakeholders, and hence it demands, in turn, a higher level of transparency as well as greater availability of resources. Therefore, trust is concerned with both the social environment, the general business environment, and the construction industry environment. In the findings chapters, the researcher sets out the fundamental importance of building trust in multicultural project teams.

3.6 SUMMARY
Although this chapter has signposted the reader towards project and cultural issues facing the construction industry in Kenya and the UK, it worth noting that projects have certain critical characteristics that determines the appropriate actions to manage them successfully. The literature reviewed highlights that these are themselves rooted in socially constructed perspectives on the industry and the ways in which project teams’ work and interact. This chapter has re-examined the literature on complexity in projects and found that previous research has been too prescriptive. Consequently, as the complexity and scale of heavy construction engineering projects increase, the ability to bring these projects to a successful completion decreases. This implies a need, therefore, to place emphasis and effort on longer-term people and culture issues in projects. Given the fragmentation and cultural disconnection of project teams presented in this research, it is vital to propose practices that can be used in overseeing complexity in projects in Kenya. Therefore, the development of a research approach and a research methodology needs to consider how best to collect and analyse data from a wide variety of participants in Kenya and the UK, whilst, at the same time, covering range of dissimilar topics. This issue is discussed in chapter four.
4.1 INTRODUCTION

The methodology section of a thesis deals with the correlation between data and theory. It is regarded as a focal point (Phillips and Pugh 2000). It is one of the main features in the process of a research design and provides insight into the light of the current field. It also justifies the chosen methodology in the light of that field. Construction management research relies not only on engineering, technology (hard sciences), but social and economics (soft sciences) disciplines to explore and provide better understanding of construction working practices, systems and environments. While the methods for conducting the engineering and technology investigations are well understood and embedded in research, the case is far less for social and economic research in construction.

Typically, the social perspective explores roles of social-cultural environments to explain behaviour of individuals within construction. The economic perspective on the other hand explores the aggregate effect as an outcome of individual behaviours. The erosion of the discipline boundaries as a result because of an increasing demand for multi-knowledge and multi-skilled professionals is fostering a situation where the economics and social perspectives inform and reinforce each other (Edum Fotwe et al 1996; Fellows and Liu 2003; Leslie 2003). Economics research addresses a micro-level interaction and social research focuses on the dynamics that take place at macro level. Linking the two perspectives holds considerable potential for a more comprehensive appreciation of issues that play out in construction. For these reasons, both qualitative and quantitative methodologies were used. The use of both research methods was useful, as they all recognise the complexity, pressures, demands, and extreme constraints of the project environments, which senior managers face. The triangulation ensured that issues germane to the experiences and attitudes towards multi-cultural team working were appropriately explored.

The chapter discusses the different research strategies and the broad issues of quantitative and qualitative methods. The chapter deals with the whole issues of research design, research approach, research types, research methods, sampling
strategies and data collection techniques. The data collection methods adopted, namely, a postal questionnaire and interviews are discussed at length. Then, the chapter goes on to discuss the issues of sampling, gaining access strategies, measuring instruments, description of the participants, framework development, data analysis details, research limitations and validation.

4.2 QUANTITATIVE RESEARCH
According to Bryman (2004), the design of quantitative research is usually a logical structure in which theories determine the research problem that is presented in the form of a hypothesis or a statement of a proposed relationship to be subject to a test. Quantitative research is based on the positivist approach, which assumes that the researcher operates remotely from the social world and that measurements should be approached through objective methodologies. The positivist belief that human behaviour can be explained in terms of cause and effect stems from epistemological assumptions of a belief in an external reality constituted of facts that are structured in a law like manner (Evered and Louis 1991). Research in this area may be viewed as having the positive focus needed to generate clear results, which are able to be generalised and reliable. Interestingly, (Easterby-Smith et al 1991) argues that it simply refines and extends what is already known.

The explanatory nature of the positivist approach makes it essentially deductive, intended to ascertain or verify causes and relationships between phenomena. Data for this type of research are usually structured, concise, explicit, and therefore quantitative in nature. Because of its structure, more formally controlled research strategies and statistical analysis techniques can be used to improve study reliability and conclusion validity. The outcome of these quantitative techniques is usually in the form of casual relationships between variables. This positivist tradition of searching for casual relationships and empirically testing explanatory theories into which deductive quantitative methods fit, has earned it the label of the traditional approach to research (Gill and Johnson 1997 and Walker, 1985). The benefits of construct and internal validity gained by the quantitative approach are highly suited for testing of large populations where one can sample to represent the whole population. However, when the information required is of a non-quantifiable nature these benefits are still required.
4.3 QUALITATIVE RESEARCH

According to Polit and Hungler (1995), the term qualitative implies an emphasis on processes and meanings that are not measured. Qualitative methods have also been described as a systematic inquiry primarily because knowledge about humans is not possible, without formulating their experiences. As Burns and Grooves (1995), stated the purpose of qualitative research is to generate new theories. In order for one to achieve this, the researcher has to get outside of any existing theories that cover an occurrence, and instead be aware of new theories that may emerge from the abstract thinking processes during the personal experiences of the qualitative process (Bryman 2004; Burns and Grooves 1995). Qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural phenomena according to the meanings people bring to them.

Denzin and Lincoln (1998) claimed that qualitative methods have been criticised as being unscientific, only exploratory, personal, and full of biases. It is called criticism and not theory, or it is interpreted politically as a disguised version of Marxism or humanism. Exploratory research is inductive and descriptive in question. Its intention is to discover the nature of the phenomena in question and explore any significant feature that emerges from within the field of study. This method is usually chosen because of a lack of previously developed knowledge, theory, or method, which makes it difficult to construct specific hypothesis or anticipate subject responses prior to data gathering. Exploratory data are usually unstructured and qualitative in nature, where the focus is testing the existence of variables rather than their frequency (Bryman 1988; 2004; Walker 1985). Typically, qualitative methods yield large volumes of rich data obtained from a limited number of individuals. They permit the evaluation of issues in depth and detail, where the data collected are not constrained by predetermined categories (Patton; 1990). The results of this type of data collection will be personal and will require interpretive and creative analysis. It is for this reason that concerns exist over the validity of qualitative research, referred to as impressionist, having low internal and population validity, low reliability and more open to distortion imposed by the values and purposes of the researcher (Allan and Skinner, 1991; Bygrave 1989).
Walker (1985) believed that the qualitative approach may be suitable to topics that are complicated or sensitive, concerned with relationships or with processes of change and if the population is small. He further suggested quantitative and qualitative methods may be used to complement each other, and that early qualitative techniques may support quantitative ones at a later stage. The nature of this research is both exploratory and explanatory, which according to the two discussions requires the use of both qualitative and quantitative methods. The justification for this research choice of methods and the consequent research strategy developed will be discussed in the next sections. It, therefore, should be noted that the review of theoretical concepts presented throughout the remainder of this chapter will focus on both qualitative and quantitative research principles.

4.4 THE DEBATE ABOUT QUANTITATIVE AND QUALITATIVE

This study used both Qualitative and Quantitative research methods. Since there is a plethora of published material on research methods, broadly divided into qualitative and quantitative, it is important to appraise these different research methods in order to ascertain the most appropriate method for this research.

Many qualitative authors (Neurath, 1959) argue that interpretative approaches to research, such as ethnography arise out of a critique of positivism's tendency to reduce human action to the status of automatic responses excited by external stimuli. Essentially, this reduction can be achieved by ignoring the subjective dimensions of human action, that is, the internal logic and interpretative process by which action is created. A number of authors (Bryman 2004; Fitzgreald and Howcraft 1998; Gill and Johnson 1997) have justified such an approach by preventing a divorce of the social sciences from the natural sciences; attempts at such a severance being perceived because of the residues of theology (Bryman 2004). Other authors, (Smart 1976) have justified their concern to follow what is assumed the approach of the natural sciences by expressing the evident operational successes of the former.

According to Giddens (1976), the result of the positivist's concern to emulate science methodology necessitates a denial of the importance of human subjectivity, a denial usually supported by further methodological criteria. As Giddens (1976; p.19) stated,
The specific unreliability of the interpretation of consciousness indeed whether by self or by an observer, has always been the principal rationale for the rejection verstehen by such schools. The intuitive or empathetic grasp of consciousness is regarded by them merely as a possible source of hypothesis of human conduct.

On the other hand, Denzin (1997) argued that interpretative approaches such as ethnography reject the positivist’s over deterministic orientation towards an understanding of human action and behaviour. Instead, Denzin (1997) shows that unlike animals or physical objects, human beings are able to attach meaning to the events and phenomena that surround them and from these interpretations and perceptions select courses of meaningful action, which they are able to reflect upon and monitor. These subjective processes provide the sources of exploration of human action and thereby constitute the rightful focus for social science research. The aim of such interpretative approaches is thus to understand how individuals make sense of their world, with human action being conceived as purposive and meaningful rather than externally determined by social structures, drives, the project environment or economic stimuli.

Researchers are thus confronted with a philosophical choice regarding the nature of human action and its explanation, which has direct methodological implications. Which set of philosophical assumptions are implicitly or explicitly adopted regarding what (Denzin 1997) termed ‘human nature’ influences our subsequent choice of particular ‘modes of engagement’ and what we see as warranted in research. According to Barrell and Morgan (1979), if researchers accept the philosophical assumptions of qualitative and its consequent epistemological prescriptions, we are invariably drawn towards the exclusive utilisation of nomothetic methodology, conversely; if researchers’ philosophical orientations are interpretative, the ensuing epistemological mandate impels us towards a more ideographic methodology such as qualitative as it enables verstehen.

Notwithstanding the above criticism, qualitative researchers are more apt compared to quantitative researchers to confront the constraints of the everyday social world, such as experiences of individuals involved in managing a project. They see this world in action and embed their findings in it. Quantitative researchers abstract from this
world and seldom study it directly. They seek a nomothetic or etic science based on probabilities derived from the study of large numbers of randomly selected cases. These kinds of approach stand above and outside the constraints of everyday life (Bryman 1988), and they would not be suitable for the study of the experiences of individuals involved in heavy construction engineering. Qualitative researchers are committed to an emic, idiographic, case-based position, which directs their attention to the specifics of particular cases, accepting that rich descriptions of the social world are valuable, whereas quantitative researchers, with their etic commitments, are less concerned with such detail.

According to Bryman (1988), qualitative research is holistic and humanistic in its approach. It is holistic in that descriptions of behaviour encompass the context. The humanistic side of qualitative refers to the motivating purpose, which is to achieve an understanding of a specific research problem through the perspective of other people. It is worth noting that research in social sciences has been influenced by two major theories “positivism” and “phenomenology”. The concept of “positivism,” which underlies quantitative, emerged through sciences such as biology, physics, and chemistry. Bryman (2004) believed that, the purpose of quantitative methodology is to describe a given set of phenomena with the purpose of controlling them through certain interventions. The researcher must minimise biases and personal opinions, to remain as objective as possible. Qualitative research methods or phenomenological studies were developed in such disciplines as anthropology and sociology. Because construction project management involves the study of human behaviour, qualitative methodology is often employed there as well. The phenomenologist gathers descriptive data and seeks to understand how individuals experience and interpret their worlds.

Bryman (1988), claimed that some sociologists used participant observation in classic studies such as (Gan’s 1962) investigation of an Italian-American community. Dalton’s (1959) examined of the world of managers and (Roy’s 1960; Lupton’s 1963) researched industrial workers. Bryman (1988) further stated that existence of such studies highlighted that qualitative research is not a new tradition but one, which has a history that precedes the surge of interest in its potential in the 1960s. Because of the nature of work in other cultures, qualitative research has been effectively utilised in
cross-national / cross-cultural studies (Seringhaus and Geunther (1991)). Usunier (1998) claims that if you are to understand the people, the society, and the culture in which you are working it is imperative that you immerse yourself in a programme of systematic observation and research. Thus, the historical application of both quantitative and qualitative research supports its application in the present study.

However, according to Bryman (1988) the argument that a qualitative and quantitative research represents a different epistemological implication is thought to be an exaggeration that is not held by all researchers. Some suggest that qualitative and quantitative methods are appropriate to different kinds of research problems, implying that the research problem determines or should determine style of research (Easterby et al. 2003). While Bryman (1988) stated that certain research problems could not be addressed by quantitative methods, for example, capturing the individual point of view, examining the constraints of everyday life and securing rich descriptions, reflect a commitment to qualitative research methods. Therefore, these views imply that the decision over whether to use a quantitative or qualitative approach should be based on ‘technical’ issues regarding the suitability of a particular research problem. Table 4.4 lists eight important differences between quantitative and qualitative research.

Table 4.4: Differences between quantitative and qualitative research

Source (Bryman 1988; 2004)

<table>
<thead>
<tr>
<th></th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nature of data</td>
<td>Hard, reliable</td>
<td>Rich, deep</td>
</tr>
<tr>
<td>2. Image of social reality</td>
<td>Static and external to actor</td>
<td>Processual and socially constructed by actor</td>
</tr>
<tr>
<td>3. Role of qualitative research</td>
<td>Preparatory</td>
<td>Means to exploration of actor interpretation</td>
</tr>
<tr>
<td>4. Relationship between researcher and subject</td>
<td>Distant</td>
<td>Close</td>
</tr>
<tr>
<td>5. Researchers stance in relation to subject</td>
<td>Outsider</td>
<td>Insider</td>
</tr>
<tr>
<td>6. Researcher strategy</td>
<td>Structured</td>
<td>Unstructured</td>
</tr>
<tr>
<td>7. Scope of findings</td>
<td>Nomothetic</td>
<td>Ideographic</td>
</tr>
<tr>
<td>8. Relationship between theory concepts and research</td>
<td>Confirmation</td>
<td>Emergent</td>
</tr>
</tbody>
</table>
In Creswell (1998), qualitative and quantitative should be used if the research topic needs to be explored, as was in this study; secondly, if there is a need to present a detailed view of the research topic and finally one should chose qualitative and quantitative research if they will be studying individuals in their natural setting. This does involve going out to the field of study, gaining access, and gathering material. Considering the aim and objectives of this research and given little was known empirically about the application of multi-cultural team integration in Kenya and the UK, both qualitative and quantitative was used. As in most engineering management studies (Lewis et al 2002; Maylor 2001), this study did not attempt to promote integration or solve any cultural complexity problems. The literature search revealed that there were already external factors, which influenced the implementation of team integration on heavy construction engineering projects in Kenya. These factors were assumed as integral to everything, which took place in the projects but rather than attempting to make the connections between the two explicit, the study focused on the experiences of the individuals involved in heavy construction engineering project management. This opened up the possibility of developing a clear understanding of multi-cultural team integration, in particular the understanding of cultural complexity in Kenya and the UK.

4.5 COMBINING QUANTITATIVE AND QUALITATIVE RESEARCH

In this research, participants were interviewed in their own working environments and the focus was on participant understandings and experiences of managing multi-cultural project teams. Field and Morse (1998) urge the employment of a qualitative approach especially in extracting data from experts in the field; while Bryman (1988), Easterbly et al (2003), and Tilden et al (1990) hold that, a quantitative method using interviews with knowledgeable participants enriches and extends understanding of the topic, and provides valuable data. Turner (1981) further argued that qualitative research is likely to generate detailed, significant data that can be used by both the researcher and participants. Bryman (1988) further stated that by combining the two, the researchers' claims for the validity of his or her conclusions are enhanced if they can be shown to provide mutual confirmation.

The use of multiple methods or triangulation was an attempt to secure an in-depth understanding of the phenomena in question. In this research, the data were collected
in the form of in-depth interviews and a questionnaire. According to Denzin and Lincoln (1998), the combination of multiple methods to collect data in a single study is best understood as a strategy that adds rigour, breadth, and depth to the investigation. Rigour was achieved by focusing on verification strategies. These included the responsiveness of the researcher during the data collection and data analysis period, methodological coherence, and sampling strategy.

In developing a research approach, careful consideration must be given to how best to collect and analyse data covering possible differences in construction project management practice. A solution would seem to be to focus the research on ensuring diversity in the sample, in terms of heavy construction engineering projects managed by subjects. Such diversity will ensure that potential differences in practice can be identified and it will facilitate the analysis of any influences on different projects that are researched. As well as considering developments in project delivery, in terms of team integration, multi-cultural teams, cultural complexity and systems, and the influences on such developments, a research study of views based on actual practice may lead to some suggestions for modification of the existing theory.

Therefore, the philosophical consideration of this research can be viewed from three broad perspectives. The first perspective is linked to the essential requirement of investigating actual practice across a variety of culture, company, and project environments as illustrated in Table 4.5.

Table 4.5: Variety of Construction Engineering Projects Managed By Participants

<table>
<thead>
<tr>
<th>Industry</th>
<th>Projects managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Manufacturing plants</td>
</tr>
<tr>
<td>Process</td>
<td>Refinery plants</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>Refinery plants</td>
</tr>
<tr>
<td>Electric Power</td>
<td>Power plant / dams</td>
</tr>
</tbody>
</table>
Chapter Four

The second perspective is linked to the need to select a research that enables the dissemination of a potentially large amount of qualitative and quantitative data, covering a wide variety of disparate topic areas from participants in a number of different project environments. As a result, Easterby Smith et al (1991) stated that it is important to understand philosophical issues. They highlight three reasons for having some knowledge of philosophy. Firstly, it provides a framework for implementing an appropriate research design given the specific research subject or knowledge structure. Secondly, it underpins the overall research design, including the type of data to be gathered, the approach to interpreting the evidence and the methods for collecting and analysing data. Lastly, it facilitates an understanding of alternative research.

Philosophical issues are usually discussed in the context of the two main traditions i.e. quantitative and qualitative. Bryman (2004) and Fitzegerald and Howcroft (1998) identified a number of key distinguishing features for quantitative method; it usually involves the collection and analysis of data and it uses highly structured methodologies to facilitate replication; it is deductive (involving the testing of a hypothesis by observation under controlled conditions). By comparison, the focus of the qualitative method is on explaining why individuals have different experiences rather than seeking to establish casual relationships and fundamental laws through the testing of hypothesis. In terms of research practice, Easterby-Smith et al (1991) stated,

"There are many researchers in the management field who adapt a pragmatic view by deliberately combining research methods drawn from both traditions."

The research design covered in the reminder of this chapter is based on principles drawn from qualitative and quantitative research. In considering how the attitudes and perception of participants influence the understanding of multi-cultural project teams the research design is in part drawing from the qualitative approach. The collation and analysis of attitudes will also draw upon the quantitative philosophy.
4.6 METHODOLOGICAL ISSUES OF THIS RESEARCH

According to Usunier (1998), the search for equivalence and comparability across cultures and countries appears as a natural undertaking in cross-cultural research, whether in management, sociology, or psychology research. Usunier (1998) argued, if researchers compare across cultural contexts, they would need to apply concepts and research techniques that are understood in similar ways in all cultures. Moreover, researchers need to check that the same data collection procedures do not lead to biased findings in one of the contexts under investigation. In this research, the search for equivalence was therefore found to be the most important methodological aspect of cross-cultural project management research. Studies, which strongly adapt purely emic techniques easily, forget that there is always a need for a minimal level of commensurability. A general problem that has been highlighted by Usunier (1998) is the relevance of western models or frameworks that offer the implicit starting base for the comparison process. This is viewed by Usunier (1998: p 102) as a positive attribute. He further argues that the issue here is not to criticise them but rather to face a paradoxical situation. That is that the dominant culture in terms of theories, languages used, and cultural origin of the researchers tends to frame the relevance of the research topics, concepts and methodologies used while at the same time sincerely trying to introduce new insights in different contexts. One, therefore, could argue that the search for cross-cultural equivalence is in this respect a somewhat self-contradicting process.

4.6.1 Conceptual and Functional Equivalence

It is suggested by Tincknell et al (2004) and Usunier (1998), that a basic issue in cross-cultural research is the determination of whether the concepts applied have similar meaning across the units studied. Gray (2002) further stated that problems of conceptual equivalence are frequent when testing the influence of certain constructs on behaviour. For example, the following statement from Geertz (1983) gives an indication of how difficult it can be to reach true conceptual equivalence between cultures and insists on difference in nature:

"The Western conception of a person as a bounded, unique, more or less integrated, motivational and cognitive universe, a dynamic centre of awareness, emotions, judgement and action, organised in a distinctive whole......is, however incorrigible it
may seem a rather peculiar idea, within the context of world's cultures” (Geertz 1983: 59).

As observed in this study, basic concepts such as leadership, trust, and communication are often used in management research questionnaires where perceptions and motivation for action are related to self-image and interaction with other individuals in a particular social and cultural setting. However, it is always important to question the conceptual equivalence of all these words, especially when constructing a cross-cultural questionnaire survey as in this research.

4.7 RESEARCH STRATEGY EMPLOYED IN THIS STUDY

The following section will discuss the broad issues of quantitative methods. Part one examines postal questionnaire design and pilot study. Part two examined sampling technique employed, location of sample, sample size and quantitative data analysis.

4.7.1 PHASE ONE: QUANTITATIVE

Having formulated a set of research questions, a strategy needs devising for the research questions to be answered. Saunders et al (1997: p74-81) describes the three traditional research strategies as survey, case study and experiment. An experimental strategy is based on laboratory type research applied in natural sciences. Given the nature of the research being carried out in this work, the experiment strategy does not seem appropriate. To consider different project teams, organisation and project environments it seems sensible to establish a strategy based on work in the field, rather than in the laboratory.

According to Hutton (1988: p8), survey research is the method of collecting information by questioning a sample of participants drawn to be representative of a defined population. Surveys are a widely accepted research design and involve eliciting information from individuals through interviews and questionnaires. Ghauri et al (1995: 58-60), claims that the survey research can be “descriptive” and/or “analytical / explanatory”. Analytical research aims to understand the relationships between variables. In contrast, descriptive studies aim to provide an accurate profile of chosen phenomena, whether it is people, situations or events.
Bryman (2004), Denzin (1997) and Dillman (1978), suggested that in order to maximise survey response, the researcher must minimise the cost of responding and maximise the rewards. Minimising can be achieved by making it easy, no need to search files for answers etc. Maximising in this sense could mean appealing to the respondents' sense of loyalty to their own industry. The questions, who are they, why did they not respond and would they share the view of those who did respond need to be addressed. Surveys allow variables to be identified. Surveys also show how variables relate to one another and how that relationship might change with time. Variables can be dependent, i.e. the input to a relationship. Dependent variables would include performance perception and attitudes or personal impressions.

The final type of research strategy is the case study. Yin (1984) defined a case study as a

"method of organising data for the purpose of analysing the life of a social unit - a person, family or an organisation".

A case study strategy is a means of gaining a richer understanding of the context of the research problem. As already highlighted, a survey seems an appropriate method for obtaining data from a variety of organisations, such as, project teams, and project environments. However, richness could be added to the data obtained from these different project organisations through detailed studies of a number of selected organisational cases.

A further question in selecting a research strategy concerns the time perspective. It could be argued that research that considers both changes and developments over time will use longitudinal whilst research that considers particular phenomena at a particular time will apply cross-sectional studies. This study focused on investigating how organisations project related factors and the attitudes of project teams in different project environments to help our understanding of cultural complexity in heavy construction engineering projects.
4.7.1.1 Postal Questionnaire design

The detailed design of the postal questionnaire needs to be carried out with due regard to the areas to be investigated by the survey. In this respect, it was found useful to refer back to the subject matter of the research questions stated in the introduction. As was stated in the introduction to this chapter, the research approach must allow an investigation of a broad range of team issues, incorporating behavioural and management features. The specific elements to be investigated were identified from the topics covered by the research questions. Therefore, taken from the headings contained in the statement of the problem in the literature review, the specific topics for investigation were monitoring project team performance, achieving team goals, creating an integrated supply team, improving project team performance, aligning goals within the team and maintaining team affiliation as illustrated in Table 4.7.1.1.

Table 4.7.1.1: Research Topics for investigation

<table>
<thead>
<tr>
<th>Monitoring project team performance</th>
<th>Achieving team goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Co-ordination of resources</td>
<td>• Smoothness of handover</td>
</tr>
<tr>
<td>• Agreeing cost project objectives</td>
<td>• Responsiveness to change</td>
</tr>
<tr>
<td>• Monitoring, controlling a project</td>
<td>• Issue resolution</td>
</tr>
<tr>
<td>• Adherence to defined procedures</td>
<td>• Co-operation</td>
</tr>
<tr>
<td>• Project start-up</td>
<td>• Dispute avoidance</td>
</tr>
<tr>
<td>• Delegating responsibility</td>
<td>• Communication</td>
</tr>
<tr>
<td>• Monitoring, controlling a project</td>
<td>• Joint-decision making</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Creating an integrated supply team</th>
<th>Improving project team performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Project selection, prioritisation</td>
<td>• Ability to deal with quality</td>
</tr>
<tr>
<td>• People selection</td>
<td>• Ability to deal with risk</td>
</tr>
</tbody>
</table>
<pre><code>              | • Budgeting control               |
</code></pre>
<p>|                      | • Ability to deal with time       |
|                      | • Ability to deal with project change |
|                      | • Ability to deal with team integration |</p>

<table>
<thead>
<tr>
<th>Aligning goals within the team</th>
<th>Maintaining team affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Individual work plan</td>
<td>• Client participation</td>
</tr>
<tr>
<td>• Clearly defined goals</td>
<td>• Team contribution to planning</td>
</tr>
<tr>
<td>• Organisation culture</td>
<td>• Contribution to continuous improvement</td>
</tr>
<tr>
<td>• Collective work plan</td>
<td>• Identification of business related issues</td>
</tr>
<tr>
<td></td>
<td>• Project manager leadership</td>
</tr>
</tbody>
</table>

Given that the purpose of the research was to investigate the research questions in the statement of the problem, there was an effort to make the questions, clear, brief, simple, and still meaningful in order to omit ambiguity. The areas included in the questionnaire were in part, developed by considering the data required relating to the...
subject areas of the research questions. In Table 4.7.1.1, the specific content of the postal questionnaire was designed to investigate multi-cultural project teams. Although this was a useful classification in terms of emphasising the different broad elements incorporated within the discipline of project management, it is worth noting that there was a link between the relationships of members of the supply team achieving team goals and creating, and integrating as an efficient work unit. For example, the topic of the performance of the supply chain team, highlighted in the literature review of team integration, incorporates “team goals” element, in terms of identifying team success criteria. Careful consideration of the areas for inclusion in the postal questionnaire contributed to the collection of valid data.

The design of a good questionnaire is a very difficult exercise (Bell 1993). The validity and reliability of the data are also influenced by the design of the questionnaire. The design of the questionnaire was carried out with due attention to the areas of:

- questionnaire focus;
- questionnaire phraseology;
- form of response;
- question sequence;
- overall presentation; and
- introduction to respondents.

These are identified by Dillman (1991); Gill and Johnson (1991) Moser and Kalton (1971) and Oppenheim (1992) as the six key areas of questionnaire design. The questionnaire comprised three main areas. The final questionnaire and a covering letter is shown in Appendix A and B.

4.7.1.2 The Questionnaire and Pilot study

According to Oppenheim (2003), the reliability and validity of any data collected by the survey will depend in part on the rigour of the pilot testing of the questionnaire. A lack of reliability due to subject error may arise when the answer a participant gives is influenced by extraneous factors, such as the working environment or work load. In
this research, the potential for subject error is probably related to the workload of the participant. The questionnaire is demanding on a participant’s time and if the participant feels completing the questionnaire is an unreasonable use of valuable time it might have a negative effect on both the completeness and accuracy of the findings. To overcome this problem, the phraseology of the questions was made simple and this was achieved after a thorough review with my supervisor. In addition, great emphasis was put on making sure that the researcher came up with a focused questionnaire. To consider the validity of the questions, Oppenheim (2003) proposed focusing the piloting of an interviewer administered questionnaire on a number of factors:

- clarity of instructions;
- questionnaire length;
- significant topic omissions;
- any other comments;
- unclear or ambiguous questions; and
- questions a respondent was uneasy about answering and any other comments.

In order to address the above areas, a two stage piloting process was arranged. In the first stage of piloting, a draft copy of the questionnaire was given to six senior members of the academic staff in Loughborough University: one specialising in statistical analysis, another specialising in questionnaire design. They were four experienced academic staff who were knowledgeable in the field of project teams and integration. Feedback was received from each member of staff and modifications were subsequently made to the questionnaire. In the second stage of the piloting, the modified postal questionnaire was administered to thirty experienced senior project managers at a workshop, which had been arranged through European Construction Institute (ECI) in London. Table 4.7.1.2, illustrates the areas covered in terms of questionnaire validity in the piloting process.
Table 4.7.1.2: Questionnaire feedback

<table>
<thead>
<tr>
<th>Area of feedback</th>
<th>Phase1: Academic staff Loughborough University</th>
<th>Phase2: European Construction Institute Members (ECI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Questionnaire Phraseology Feedback</td>
<td>Feedback</td>
<td>Feedback</td>
</tr>
<tr>
<td>2. Questionnaire Length Feedback</td>
<td>Feedback</td>
<td>Feedback</td>
</tr>
<tr>
<td>3. Unclear or ambiguous questions</td>
<td>Feedback</td>
<td>Feedback</td>
</tr>
<tr>
<td>4. Significant topic omissions</td>
<td>Feedback</td>
<td>N/A</td>
</tr>
<tr>
<td>5. Questionnaire Focus Feedback</td>
<td>Feedback</td>
<td>N/A</td>
</tr>
</tbody>
</table>

After carrying out the piloting process, some changes were made to the draft questionnaire. No major substantive modifications were made, except for small alterations to question phrasing, sequencing, terminology, and some reduction to the questionnaire length. In summary, the questionnaire format and pilot study adopted in this research is represented in Figure 4.7.1.2.

![Figure 4.7.1.2: Illustrates Questionnaire format and pilot study](image-url)
4.7.1.3 Sampling technique employed

Sampling is the process of examining a representative number of parts of a population in order to gain an understanding of some feature or attribute of that population (Easterby et al. 2003). Any knowledge thus gained can only be an estimate of the characteristics of the whole population. The level of accuracy of that estimate depends upon the size of the sample, how it was selected, and the extent of variability within the population. The quantitative researcher uses statistical tools designed to provide a representative sample of a known population but all statistical sampling is subject to experimental error. It is worth noting that all surveys are concerned with identifying the research sample that will provide all the data necessary for answering the original research questions.

Gill and Johnson (2002) define three types of sampling techniques “random sampling or probability”, “simple random” and “stratified sampling”. Deciding whether to use random, simple, or stratified sampling depends upon ensuring that those who participate are a representative sub-set of the research population and so any findings can be generalised or extrapolated to that target population with confidence. The aim of random sampling is to ensure that participants who are involved in a study are a representative sub-set of the research population and thus any findings can be generalised to that target population with confidence. The first phase involved in this method includes selecting a list of participants from the research population from which a random sample may be drawn. It is worth noting that problems may arise since any systematic discrepancy between the research population and the sampling frame is a key source of error because it means that the entire target population is not correctly represented.

Oppenheim (2003) suggested that when a good sampling technique is in place and the population is accessible, a good sampling technique to employ is simple random sampling. This will involve the completely random selection of population members so that each member has an equal chance of being selected for the sample. An alternative sampling strategy, explored is called stratified sampling. This requires a researcher to have prior knowledge of the make-up of the population from which a random sample is to be drawn. For example, the researcher can be aware that there may be a particular population characteristics or a stratum (colour / gender) that
makes the random sampling from within the specific sub-group that exhibits this particular characteristic necessary if the sample is to be representative and proper conclusions drawn. This is particular important if one wants to know the strata in the population which may have a systematic influence upon the dependent variable or other important factors. In this study, the focus was on eliciting information from a disparate set of senior managers in a cross-section of projects managed as represented in Table 4.7.1.3.

Table 4.7.1.3: Details of participants

<table>
<thead>
<tr>
<th>Industry</th>
<th>Projects Managed</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Manufacturing</td>
<td>Manufacturing plants</td>
<td>Project directors, Project managers, Project engineers</td>
</tr>
<tr>
<td>2. Process</td>
<td>Refinery plants</td>
<td>Project directors, Project managers, Project engineers</td>
</tr>
<tr>
<td>3. Oil and Gas</td>
<td>Refinery plants</td>
<td>Project directors, Project managers, Project engineers</td>
</tr>
<tr>
<td>4. Electric power</td>
<td>Power plant / dams</td>
<td>Project directors, Project managers, Project engineers</td>
</tr>
</tbody>
</table>

According to Oppenheim (2003), the population must be clearly defined to ensure that accurate, unambiguous, and reliable conclusions are obtained. That is, defining the population is crucial so that research findings can only be legitimately applied to the population being studied. It was possible to obtain information about the wider population i.e. the numbers of senior managers who work in heavy construction engineering organisations and been involved in projects. In light of the above, this research adopted a simple random selection to ensure each individual had an equal probability of being selected from the population.

4.7.1.4 Location of sample
Given that the population from which the sample is to be drawn is "senior managers who have some involvement in projects". It was necessary to contact individuals in organisations where projects were being undertaken (or have been / will be undertaken). The most useful method of identifying potential sources of information
was the researcher's network on contacts in the area of heavy construction engineering project management. This network included contact through European Construction Institute (ECI) at Loughborough University, the Ministry of Planning and Development and the Ministry of Trade and Industry in Kenya. However, over-reliance on one particular contact might result in over representation in one area. Using this network, contact was made with project directors in a number of organisations after methodologically gathering data from heavy construction engineering organisations in Kenya and UK. The objective of the research and the required participation in terms of time were discussed; and manager's suitability, in terms of their involvement in projects was assessed. None of the organisations contacted in the UK and Kenya refused to participate.

4.7.1.5 Sample size
Gill and Johnson (2002) argued that in order to generalise from a simple random sample and avoid sampling errors or biases, the sample needs to be of an adequate size. What is adequate will depend on a number of issues, which often confuse people carrying out research for the first time. It is important that the absolute size of the sample is selected relative to the complexity of the population, the aims of the study and the kinds of statistical manipulation that will be used in data analysis and not the proportion of the sample selected relative to the complexity of the population. From the literature (Brewerton and Millward 2001; Gill and Johnson 2002), suggested that larger sample sizes reduce sampling error but at decreasing rate. A number of statistical formulas can be used to determine sample size but what is most useful in quantitative data analysis is the simplicity of reading the tables that have been developed to calculate sample size whilst taking into account the variance of the population, the magnitude of acceptable error and the kind of analysis to be used.

Therefore, in deciding upon a suitable sample size, the choice of the simple random sampling method means there is a requirement for a sample size to be achieved to allow generalisations to be made about the wider population with any statistically based degree of confidence. However, Sekaran (1992) argued that sample sizes larger than thirty and less than five hundred are appropriate for most research. Given the need for in-depth information, constraints of time and cost, and research approach, it seems sensible to aim for a sample size towards the upper end of the size limit
specified by Sekaran (1992). To aim for a sample size at the upper end of the thirty to five hundred range, the parameters shown in Table 4.7.1.5 were used to determine a certain minimum size of sample.

Table 4.7.1.5: Matrix of Industry, Projects managed, Project role and Number of years worked in sector

<table>
<thead>
<tr>
<th>Industry</th>
<th>Projects Managed</th>
<th>Project role</th>
<th>Numbers of years worked in sector</th>
<th>Years involved in managing projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Manufacturing</td>
<td>Manufacturing plants</td>
<td>Project directors, Project managers, Project engineers</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
</tr>
<tr>
<td>2. Process / Oil and Gas</td>
<td>Refinery plants</td>
<td>Project directors, Project managers, Project engineers</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
</tr>
<tr>
<td>3. Electric power</td>
<td>Power plant / dams</td>
<td>Project directors, Project managers, Project engineers</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
<td>1-5 years; 11-15 years; 16-20 years</td>
</tr>
</tbody>
</table>

In the four sections of the questionnaire, the participants specified their socio-demographic characteristics and then identified a project they had completed. In choosing the sample size, the key aim was to achieve a balance between the level of representation required within the matrix represented by the maximum sample size, and the time and cost constraints involved in obtaining data from the chosen respondents. Finally, three hundred postal questionnaires were distributed to senior managers in Kenya and the UK and one hundred and thirty two were returned giving a response rate of forty-four percent.

4.7.1.6 Quantitative data analysis

According to Bryman (2004), most researchers find dealing with quantitative data quite daunting. Bryman (2004) further claimed that most researchers are quite comfortable with quantitative research methods and analysis; they tend avoid using quantitative statistics. However, it is worth noting that the ability to perform quantitative data analysis is increasingly becoming an important skill for researchers to possess. The availability of computer software programmes such as SPSS (8, 9, 10, 11, 12, and 13) that can be used to analyse data has meant that researchers do not have to be able to perform quantitative statistical analysis. During the data analysis phase,
the researcher found that one has to know the appropriate analysis to perform and in addition how to do it to obtain the required information.

After reviewing a number of packages (SPSS for windows 8, 9, 10, 11, 12 and 13), it was concluded that SPSS for windows was best suited for this study. Bryman and Cromer (2005) suggested that the great merit of using a package like the SPSS is that it will enable a researcher to analyse data very quickly and many different ways. In other words, it does help researchers to eliminate those long hours which would have been spent in working out scores, carrying out involved calculations and making those inevitable mistakes that so frequent occur during the analysis phase. Secondly, it also provides researchers with the opportunity for applying more complicated and often more appropriate statistical techniques, which would not have otherwise been attempted. What Bryman and Cromer (2005) failed to highlight is that the researcher has to learn how to use these programs. However, the time spent in carrying out the analysis will be much less than doing the same calculations by hand.

In this study, computer assisted analysis (SPSS for windows 12.0) was used to identify characteristics of the respondents, their knowledge levels and the significance of the results. Cross tabulations and descriptive analysis of the data were completed. Descriptive analysis was used to determine measures of central, frequency, median, variability and relationships, whereas cross tabulations were used to demonstrate the presence or absence of a relationship. The t-test was used to compare the means of a criterion variable for two dependent samples. The t-test is appropriate when you have a single interval dependent and a dichotomous independent, and wish to test the difference of means between samples. For this study, the mean was calculated in a sequence, which was categorical in nature: very important (VI), fairly important (FI), and slightly important (SI) and not important (NI). These qualitative measurements were ranked in order, and thus considered ordinal. In the computation of the t-test, each of the participant's observations was replaced by ranks. That is all scores from all respondents were combined and ranked in a single series. The smallest score was replaced by rank 1, the next to the smallest by rank 2 and so on as illustrated in Table 4.7.1.6.
According to Bryman and Cramer (2005); Field (2005), the t-test is a parametric test assuming a normal distribution but when its assumptions are met it is more powerful than corresponding two-sample non-parametric tests. There are three types of t-tests:

- one-sample t-test: test whether the mean of one variable differs from a constant;
Chapter Four

- independent sample t-test: is used to compare the means of two independently sampled groups, and
- paired sample t-test: is used to compare means where the two groups are correlated as in before-after, repeated measures, matched pairs, or case control studies. The algorithm applied to the data is different from the independent sample t-test but interpretation of output is otherwise the same.

In order for one to carry out any of the above tests, you need to select, analyse, and compare means. In a paired sample t-test, two paired variables are selected (use shift select; the “before” and “after” responses must be organised as two variables in the data set for matched pairs or case control study, the response for each test subject and its matched control subject must be in the same case in the data file).

The data, which was to be analysed quantitatively, was preceded by an adequate preparation that comprised of editing, categorising, data acquaintance, testing reliability and validity.

4.8 EXPLORING RELATIONSHIPS BETWEEN VARIABLES

This section focuses on relationships between pairs of variables and categories. In this study, the investigation of relationships was found to be an important step in explanation and consequently contributed to the building of the eight categories. They incorporated: monitoring project team performance; achieving team goals; integrating supply teams; project team performance; aligning goals within the team; maintaining team affiliations; managing obstacles to integration; and effective formation of multi-cultural teams. According to Bryman and Cramer (2001), there is a relationship between two variables or categories when the distribution of values for one variable is associated with the distribution exhibited by another variable. In other words, the variation displayed by one variable is patterned in such a way that its variance is not randomly allocated in relation to the other variable.

In order to present some flesh to the above, the notion of cross tabulation was introduced as illustrated in Table 6.9. For this study, a potentially fruitful approach was to compare the means and t-test values. T-test is a very flexible method for exploring relationships and comparing means between two sets of data. The t-test
was used to assess whether the means of data from Kenya and the UK were statistically different from each other. For example, from the analysis respondents from Kenya and the UK identified trust as one of the determinants to have achieved better relationship between project participants because it can improve the communication flow for team members to understand each other's objectives with ease. In addition, it was further established that high level of trust contributed to the success of collective work plan on projects. In order for a relationship between variables two/three to be confirmed, not only must there be substantiation that there is a relationship but the relationship must be shown to be real. Interviews were used in this study as a verification tool for the exploration of relationships. Through the use of NVivo software, connections were made and the same time exploration of patterns on categories and variables was ascertained.

4.9 PHASE TWO: QUALITATIVE RESEARCH
The following section will focus on broader issues of qualitative methods. Part one explores interviewee selection, data collection method, and research limitations. Part two looks at the validation and verification process.

4.9.1 Literature control
A literature review was performed to determine what is known about the specific research problem of team integration and project delivery in Kenya and the UK. The review was conducted into a variety of project management disciplines, such as, project teams, cultural complexity, project culture, and trust in production, team integration, and project communication. From the foundation of the review, a research problem was defined (multi-cultural team integration), thus determining the direction of the fieldwork. This procedure is in line with the purpose of literature control, as defined by May (2002), who indicated that literature should assist the researcher in planning the narratives for the actual research. At the end of the process, the narratives were compared with the research into the relevant literature in order to draw relevant conclusions.

4.9.2 Purpose of this research
The aim of this study was to increase 'verstehen' or understanding, of the factors, which cause cultural complexity in a project team. The basic premise of the
qualitative approach is to emphasise the qualitative aspects of human behaviour (Bryman 1988). According to Weber (1947), he began to apply the term ‘vertehen’ to this phenomenological approach, referring to a phenomenologist as one who seeks to gain an understanding. Adding to that definition, (Denzin and Lincoln 1998) stated,

"Verstehen refers to the unique human capacity to make sense of the world."

Because human beings have an exclusive form of consciousness from other forms of life, they have the ability to empathise with others through personal experience. According to Denzin and Lincoln (1998), the qualitative researcher pursues ‘verstehen’ in social-cultural context, as opposed to merely explaining the dynamics of the situation. Denzin and Lincoln (1998) further described the qualitative researcher as one concerned with naturalistic observation of reality from within the situation, rather than defining an objective reality from the perspective of an outsider, which is the goal of qualitative research.

The philosophy of ‘verstehen’, which motivates the methodology of qualitative inquiry, is also the essence of working with individuals in other cultures within a project environment. Usunier (1998) described the challenge of working cross-culturally as the ability

"...to walk from our own culture into the culture of others and to live in their own way rather than our own".

Qualitative research endorses this goal, as the researcher seeks to understand the inside perspective of a research problem. The literature review for this study defined some of the possible causes of cultural complexity that were involved in projects. The fieldwork carried out in Kenya and the UK confirmed that there were many sources, which gave rise to this complexity. The management of cultural complexity was of specific interest to this research. Through the literature and the research, this study defined qualities of responsive management that are conducive to minimising cultural complexity within a project environment. More specifically, this research attempted to pinpoint communication strategies necessary to minimise cultural complexity.
4.9.3 Researcher: Ethical consideration

Because qualitative research is generally carried out in the social sciences, the research involves the actions and reactions of individuals. Gill and Johnson (1997) defined ethics as the moral principles, which determine the rules and expectations of correct conduct in a given setting. In research, these socially accepted strategies apply to the rights of the participants and to the responsibilities of informed researchers. A participant should feel safe throughout the interview process. This safety should include freedom from both emotional and physical harm. Physical harm is not usually an issue, however; emotional harm may become a problem depending on the nature of research and the resulting questions used during the interview process. Emotional harm may be inadvertently caused by the researcher, if he or she pursues issues that bring pain to the participant. A sensitive researcher should be able to perceive an uncomfortable response and shift the questions of investigation in another direction.

In this study, the setting of the interview was the participant's office. The researcher's inexperience of interviewing (project directors, project managers, project engineers) meant that the researcher was unable to anticipate some situations or know what was likely to happen, such as cancellations at short notice and disagreements of opinions between participants. The effects of such situations on the data collected were minimised by allowing as much flexibility as possible including informing participants to choose to discontinue or opt out if they felt that the issues being discussed were too sensitive. Fortunately, this did not prove to be the case. However, everyday life can never be pre-planned and this meant the researcher had to respond to all sorts of factors and considerations that arose from situations that could not have been totally foreseen.

A participant has the right to personal privacy. The right is protected through the sensitivity of the researcher who must refrain from delving into issues, which would encroach on the privacy of the participant. The researcher's responsibility is to be aware of the participants' need for privacy throughout the interview process. The right to privacy encompasses the rights of confidentiality and anonymity. Bryman (2004), referred confidentiality as the way in which data is handled. Anonymity in research means that collected data should not be associated with an individual or the
individual’s company in any way. Anonymity is safeguard with code names. In this research, the researcher was careful to protect the rights of privacy, confidentiality, and anonymity of the participants. Participants were not asked questions, which would affect their rights of privacy, confidentiality, and anonymity. Confidentiality was dealt with through the open use of a tape recorder. Because the nature of the research involved the explanation of cultural complexity on projects, the researcher requested that the participants refrain from using the names of co-project workers on the tape recording. Instead, participants referred to individuals as Person A, B, C or D. Anonymity was not only achieved by using code names during the interviews but also in the typed transcripts of the interviews.

4.9.4 INTERVIEWEE SELECTION

Denzin and Lincoln (1998) noted that interviewee variety is essential to the profundity and richness of data obtained in qualitative research. The aim of this was to explore expert views from successful project directors, project managers, and project engineers on cultural complexity within the Kenyan and UK construction industry. The main advantage of this sample was that each participant had worked on projects in developing countries. This allowed the researcher to focus in-depth on the experiences of each participant. This was particularly important because the research subject is in a research area of which there is little available data in Kenya and UK. The participants worked in various types of organisation formations and project arrangements. All participants were considered to have practical understanding of managing multi-cultural project teams and their views were considered those of knowledgeable practitioners. The following is a summary background of the organisations used in this study, for the purposes of confidentiality, the firms name have been changed. For the purposes of identification, the eight organisations have each been given one-letter identification from (A) to (H). Participants have been given an alphabetical identification that links them to the organisation they work for as illustrated in Table 4.8.4. A summary profile of the twenty participants involved in this study is provided in Section 4.8.5b.

4.9.4.1 Company A

Company (A) is a global group of energy and petrochemical companies. The company is active in more than one hundred and thirty countries and territories and
employ one hundred and eight thousand people worldwide. Company (A) is an
ergy company, which explores for, produces, and trades in a range of energy
resources. They also produce oil and gas products, such as fuels and petrochemicals.
They do also have a broad portfolio of hydrogen, bio-fuels, wind, and solar power
interests. Company (A) does provide consultancy and technical services as well as
research and development expertise to the energy industry. The aim of the company
Group is to meet the energy needs of society, in ways that are economically, socially,
and environmentally viable, now and in the future. Their focus is on delivery and
growth.

4.9.4.2 Company B
Company (B) is one of the UK's leading construction companies. They do have a
famous heritage; a well-defined culture with strong values and a strategy - 'Being
Number One' - designed to ensure a successful future. Company (B) are committed to
understanding, managing and monitoring environmental and social impacts to ensure
that they do have a positive impact on the communities in which they operate. This
does reflect in the successful delivery of their customers' projects and to the
organisation as a whole. They have developed an umbrella approach to the
management of Corporate Responsibility (CR), which does include existing and new
policies and strategies. The company's supply chain plays a fundamental role in both
the work winning process and successful project delivery.

4.9.4.3 Company C
Company (C) is a leading international engineering, construction and project
management contractor, and power equipment supplier. The company operates
through two business groups: the global engineering, construction, and global power
group. Their reputation for safely delivering quality projects on time and on budget is
well recognised in the industries they serve. Company (C) have a proven expertise in
managing large, complex projects, a global reach, and a longstanding international
presence, strong relationships with clients and cutting-edge processes and
technologies. As one of the worlds most prestigious engineering and construction
companies, Company (C) has over one hundred years of experience and dedicated
highly skilled personnel providing services worldwide. They design, engineer,
construct leading-edge processing facilities, and related infrastructure for the
upstream oil and gas LNG, and gas to liquids, refining, chemicals and petrochemical, pharmaceuticals, biotechnology and healthcare, environmental and power industries. Company (C) does have the flexibility and the strength to be able to deliver large or small projects successfully anywhere in the world.

4.9.4.4 Company D
Company (D) is a global engineering, construction, and project management company with more than a century of experience on complex projects in challenging locations. Privately owned with headquarters in San Francisco, they do have forty offices around the world and forty thousand employees. Company (D) had revenues of $18.1 billion in 2005 and booked new work valued at $18.5 billion. Projects managed include roads and rail systems, airports and seaports, fossil and nuclear power plants, refineries and petrochemical facilities, mines and smelters, defence and aerospace facilities environmental cleanup projects, telecommunications networks and pipelines.

4.9.4.5 Company E
Company (E) is a limited liability company responsible for the transmission, distribution, and retail of electricity throughout Kenya and East Africa. Company (E) owns and operates the national transmission and distribution grid, and is responsible for the scheduling and dispatch of electricity to more than six hundred thousand customers throughout Kenya. Projects managed include power plants.

4.9.4.6 Company F
Company (F) is a medium-sized company offering premier quality consultancy, design, engineering, procurement, construction/project management, and validation services principally to the process and manufacturing industries and other customers whose facilities include technical complexity. Their traditional involvement is in the investment phase of our clients' capital assets. They also have expertise in the pre-investment and operational phases where they regularly help to find solutions to increase production efficiency, address health, and safety, regulatory, and other issues. The company is owned by its management, which results in a flat management, an entrepreneurial 'can do' attitude, high accountability and a competitive cost structure. Currently the company employs approximately two hundred and sixty staff. It has a fee turnover of £13.5M per year, and work on
approximately £250M capital value of projects per year. They provide services ranging from a few thousand up to in excess of fifty million pounds. They focused primarily on food, consumer goods, pharmaceutical, biotechnology, chemicals, and the fibre industries. It undertakes work worldwide for a range of companies from 'start-ups' to major multinationals. For their recognition of a commitment to achieving best practice for the benefit of their clients, most of their employees and supply chains, regularly receive awards recognising their unique capabilities.

4.9.4.7 Company G

Founded in 1919, Company (G) is one of the world's largest providers of products and services to the oil and gas industries. The company adds value through the entire lifecycle of oil and gas reservoirs. It provides and integrates products and services starting with exploration and development, moving through production, operations, maintenance, and conversion and refining, to infrastructure and abandonment. Company (G) employs more than one hundred thousand people in over one hundred and twenty countries working in five major operating groups. Projects managed include nuclear power plants, refineries and petrochemical facilities, aerospace facilities environmental cleanup projects and pipelines.

4.9.4.8 Company H

Company (H) is the leading electric power generation company in Kenya, producing about eighty percent of electricity consumed in the country. The company utilises various sources to generate electricity ranging from hydro, geothermal, thermal and wind. Hydro-electricity is the leading source, with an installed capacity of 677.3MW, which is 72.3 per cent of the company's installed capacity. Company (H) has a workforce of one thousand five hundred staff located at different power plants. With its wealth of experience, established corporate base and a clear vision, the company intends to maintain leadership in the liberalised electric energy sub-sector in Kenya and the Eastern Africa Region. Projects managed include power plants.
The eight organisations were selected from a number of heavy construction engineering organisations to ensure that a variety of project environments would be examined. Interviewing more than one project leader in an organisation allowed more information about their actual practice (and opinions) to be obtained. In order to investigate the factors that influenced project management practice it was necessary to have a range of organisations in terms of status, size, and projects managed. The eight organisations that were selected, where twenty of the participants interviewed, operated in the energy, pharmaceutical and petrochemical sector. The selected organisations were well balanced in terms of projects managed. In general, terms there was a link between the existence of project work and the type of projects undertaken.

4.9.5 Sampling and gaining access
According to Marvasti (2003), defining the target population and selecting the sampling technique lies at the core of any qualitative research. First, the population must be clearly defined to ensure that accurate and ambiguous and reliable conclusions are achieved. Defining the population is crucial because research findings can only be legitimately applied to the population under study. May (2002), argued that bias in the selection of the sample can be introduced if the sampling is not random and the sampling frame that serves as the basis for the selection does not involve the population adequately, completely or accurately or when some sections of

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Profile of projects</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Energy and Petrochemical</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>Energy and Petrochemical</td>
<td>S</td>
</tr>
<tr>
<td>C</td>
<td>Energy and Petrochemical</td>
<td>R</td>
</tr>
<tr>
<td>D</td>
<td>Defence, Energy and Petrochemical</td>
<td>J</td>
</tr>
<tr>
<td>E</td>
<td>Power plants</td>
<td>G, H, L, P, Q</td>
</tr>
<tr>
<td>F</td>
<td>Energy, Pharmaceutical and Petrochemical</td>
<td>C, I</td>
</tr>
<tr>
<td>G</td>
<td>Energy, Pharmaceutical and Petrochemical</td>
<td>D, E, F, K</td>
</tr>
<tr>
<td>H</td>
<td>Power plants</td>
<td>B, M, N, O</td>
</tr>
</tbody>
</table>
the population are impossible to find or refuse to co-operate. Therefore, knowing who can grant or block access to individuals is part of the overall sociological knowledge required for a qualitative study. However, the consent of the gatekeeper does not necessarily allow direct access to individuals as was discovered in this research. Numerous gatekeepers were encountered in this research, signifying the complex process in negotiating access.

Ticknel et al (2004) stated that a researcher must locate individuals who meet certain criteria and who are willing to participate in a research study. To ensure that appropriate recruitment of senior managers, various organisations were contacted. The gatekeepers included board members of ECI (European Construction Union) and Company directors in Kenya and the UK. Between them, these individuals allowed access to their senior project team members. Huberman and Miles (2002) suggested that the population for a study is

"the group which the researcher wants to gain information and draw conclusions"

From that large group, a researcher selects the sample, which will yield desired data. After selecting the largest population, the size of the sample must be determined. There are no rules for choosing the size of a sample in qualitative study (Bryman 2004; Creswell 1994). The size of the sample is connected to the purpose of the research and the ability of the researcher to get information-rich data. May (2002) addressed this specific issue by suggesting that the sample size is dynamic and ad hoc, and relies on the availability of the participants and saturation of the data, rather than targeting representatives to generalise to a larger population. Sample sizes for qualitative research should be judged according to how well they fulfil the aim of the research, rather than applying predetermined logic for probability sampling, as used by quantitative researchers (Bryman, 1988).

As Denzin and Lincoln (1998) stated that purposive sampling is recommended for qualitative research. The underlying principle in strategies of purposive sampling is choosing information-rich cases. The researcher chooses purposive sampling technique in qualitative research. It was critical to find participants who had managed
multi-cultural project teams successfully and experienced impacts of cultural complexity as illustrated in Table 4.9.5a.

Table 4.9.5a: Cultural complexity projects managed by participants

<table>
<thead>
<tr>
<th>Year managed</th>
<th>Participant</th>
<th>Project</th>
<th>Country of Implementation</th>
<th>Impacts of cultural complexity</th>
<th>Project outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>A</td>
<td>Refinery plant</td>
<td>Dubai</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2005</td>
<td>B</td>
<td>Power plant</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2002</td>
<td>C</td>
<td>Pharmaceutical plants</td>
<td>UK</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2005</td>
<td>D</td>
<td>Refinery plant</td>
<td>Azerbaijan</td>
<td>Impacts were seen</td>
<td>Unsuccessful</td>
</tr>
<tr>
<td>2005</td>
<td>E</td>
<td>Refinery plant</td>
<td>Azerbaijan</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2005</td>
<td>F</td>
<td>Refinery plant</td>
<td>Azerbaijan</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>G</td>
<td>Power plant</td>
<td>Kenya</td>
<td>No impact in project</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>H</td>
<td>Dam</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2003</td>
<td>I</td>
<td>Food plant</td>
<td>UK</td>
<td>No impact in project</td>
<td>Successful</td>
</tr>
<tr>
<td>2001</td>
<td>J</td>
<td>Refinery plant</td>
<td>Saudi Arabia</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2003</td>
<td>K</td>
<td>Refinery plant</td>
<td>Azerbaijan</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2003</td>
<td>L</td>
<td>Power plant</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2003</td>
<td>M</td>
<td>Power plant</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>N</td>
<td>Dam</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>O</td>
<td>Dam</td>
<td>Ethiopia</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>P</td>
<td>Dam</td>
<td>Ethiopia</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2005</td>
<td>Q</td>
<td>Power plant</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2003</td>
<td>R</td>
<td>Manufacturing plant</td>
<td>Hong Kong</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2004</td>
<td>S</td>
<td>Refinery plant</td>
<td>Azerbaijan</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
<tr>
<td>2002</td>
<td>T</td>
<td>Dam</td>
<td>Kenya</td>
<td>Impacts were seen</td>
<td>Successful</td>
</tr>
</tbody>
</table>

In the first phase, senior managers in the purposive sample were contacted and asked to complete a project questionnaire. The questionnaire [see Appendix C] was initially piloted to ensure that it met the objectives of identifying the participants who had experienced cultural issues on projects in developing countries. Once the project background of participants was verified, the sample was purposively selected.
Usunier (1998) stated that where researchers who want to compare across cultural contexts, need to use concepts and research instruments that are understood in similar ways. In all cultural studies, as in this study, the researcher made sure that the same data collection procedures did not result in biased findings. The search for equivalence was the most important methodological aspect in this research. In order to define a sampling procedure for this research, the researcher selected a method, which was based on several national or cultural samples, each being fully representative of the populations of the country. The sample was designed to obtain Kenyan and UK participants with the requirement of having experienced cultural complexity on projects. The second requirement for selection was that participants had successful managed multi-cultural project teams, and the third requirement was that participants had worked on heavy construction engineering projects. Furthermore, the twenty participants varied in terms of project background as shown in Table 4.9.5a. The variety lent multiple perspectives to the interview process. The twenty interviews provided rich data, which proved to be more than sufficient for this research.

Following confirmation with initial gatekeepers, letters were distributed to the senior managers. The gatekeepers facilitated the undertaking of the study among the senior managers within their organisations. The process of recruiting participants was a lengthy one and lasted over two and half months [January 2006-Mid March 2006]. The researcher visited the organisations in Kenya and UK carrying out the interviews. The aim of this was to provide all the participants with an information sheet about the study. It was made clear to the participants that participation was voluntary. Within this context, the researcher continually emphasised that the study had a primary focus, with the findings being part of an accumulative body of knowledge about how best to improve project performance on multi-cultural project teams.

At the start of each interview carried out in this study, participants were advised to read and to sign a statement of consent [see Appendix D]. The statement of consent briefly highlighted the purpose of the research project, and then explained that the interviews would take the form of a structured discussion. The consent form also assured the participants of complete anonymity during the research process. The interviews took place in offices. Appointments were made with the participants, so
each participant had a planned interview time. The offices were large and well lit with fluorescent lights. During the interviews the doors were closed this gave participants a sense of privacy and confidentiality. The tape recorder was placed on the desk in clear sight. Participants were aware of its presence but accepted it. There were few interruptions in the interviews. The tape recorder was turned off during the interruptions. Interruptions were also noted on the typed transcript.

One of the key advantages that emerged after the interview process is that the sample size used for this research allowed the researcher to focus in-depth on social issues in different types of projects. This was particularly important because the research subject is in a research area of which there is little available data in Britain and Kenya. The following is a summary profile of the twenty managers involved in this study [see Table 4.9.5b]; for the purpose of confidentiality, the researcher used alphabetical letters to represent names of participants.
Table 4.9.5b: Summary profile of Twenty Managers involved in this Study

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Sector</th>
<th>Current Job</th>
<th>Numbers of years worked in sector</th>
<th>Number of years managed projects</th>
<th>Role and Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Male</td>
<td>Construction</td>
<td>Project Manager</td>
<td>29</td>
<td>17</td>
<td>Managing projects</td>
</tr>
<tr>
<td>B</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Leader</td>
<td>18</td>
<td>7</td>
<td>Planning</td>
</tr>
<tr>
<td>C</td>
<td>Male</td>
<td>Process</td>
<td>Project Manager</td>
<td>27</td>
<td>15</td>
<td>Managing projects</td>
</tr>
<tr>
<td>D</td>
<td>Male</td>
<td>Construction</td>
<td>Chief Project Manager</td>
<td>19</td>
<td>10</td>
<td>Managing projects</td>
</tr>
<tr>
<td>E</td>
<td>Male</td>
<td>Construction</td>
<td>Project Manager</td>
<td>12</td>
<td>5</td>
<td>Planning</td>
</tr>
<tr>
<td>F</td>
<td>Female</td>
<td>Construction</td>
<td>Junior Project Manager</td>
<td>10</td>
<td>4</td>
<td>Managing projects</td>
</tr>
<tr>
<td>G</td>
<td>Male</td>
<td>Electric Power</td>
<td>Chief Project Manager</td>
<td>14</td>
<td>6</td>
<td>Managing projects</td>
</tr>
<tr>
<td>H</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Engineer</td>
<td>20</td>
<td>10</td>
<td>Co-ordination of work</td>
</tr>
<tr>
<td>I</td>
<td>Female</td>
<td>Oil and Gas</td>
<td>Project Engineer</td>
<td>15</td>
<td>7</td>
<td>Managing projects</td>
</tr>
<tr>
<td>J</td>
<td>Male</td>
<td>Oil and Gas</td>
<td>Project Manager</td>
<td>20</td>
<td>10</td>
<td>Managing projects</td>
</tr>
<tr>
<td>K</td>
<td>Male</td>
<td>Oil and Gas</td>
<td>Junior Project Manager</td>
<td>15</td>
<td>6</td>
<td>Co-ordination of resources</td>
</tr>
<tr>
<td>L</td>
<td>Male</td>
<td>Process</td>
<td>Project Manager</td>
<td>20</td>
<td>11</td>
<td>Managing projects</td>
</tr>
<tr>
<td>M</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Leader</td>
<td>14</td>
<td>3</td>
<td>Co-ordination of work</td>
</tr>
<tr>
<td>N</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Engineer</td>
<td>17</td>
<td>5</td>
<td>Managing projects</td>
</tr>
<tr>
<td>O</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Engineer</td>
<td>15</td>
<td>6</td>
<td>Managing projects</td>
</tr>
<tr>
<td>P</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Leader</td>
<td>11</td>
<td>5</td>
<td>Co-ordination of work</td>
</tr>
<tr>
<td>Q</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Engineer</td>
<td>19</td>
<td>9</td>
<td>Managing projects</td>
</tr>
<tr>
<td>R</td>
<td>Male</td>
<td>Electric Power</td>
<td>Project Engineer</td>
<td>20</td>
<td>11</td>
<td>Managing projects</td>
</tr>
<tr>
<td>S</td>
<td>Male</td>
<td>Process</td>
<td>Project Manager</td>
<td>23</td>
<td>9</td>
<td>Managing projects</td>
</tr>
<tr>
<td>T</td>
<td>Male</td>
<td>Process</td>
<td>Project Manager</td>
<td>25</td>
<td>11</td>
<td>Managing projects</td>
</tr>
</tbody>
</table>

4.9.6 Fieldwork experience

It is worth noting that the length of fieldwork varies according to the collection of data. Ideally, fieldwork should continue until the data reaches saturation point, when the data begins to repeat itself. For example, this is illustrated when the researcher had interviews with participants A, I, O and P. Each participant was asked to define project integration in relation to the way they work.

Eddy: What is meant by integration-please give examples?

A: "Project integration is getting everyone involved in the construction process to focus in the need of the client."
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I: "Project integration is getting everyone involved with a project to focus on client needs."

O: "Project integration is getting everyone involved in the project cycle so as to focus in the need of the client."

P: "Project integration is putting a single team together so as to meet client needs."

Huberman and Miles (2002) addressed the issue of fieldwork by suggesting that the researcher should continue until the research questions are fully answered and the purpose of the research is completed. Whilst joining in with the debate (Denzin and Lincoln 1998) argued that fieldwork must be done long enough to gain in-depth understanding of the participants and the context under study. The fieldwork for this study was accomplished during June and December 2006. The data collected were rich and informative.

During the interview process, the researcher had to maintain an open mind. This required flexibility in the research design. Even though the researcher adopted a flexible approach, the author had to remain focused on the objective of the research throughout the data collection process. In qualitative research, interviews are the most common method of data collection. Face to face, interviews with people create opportunities for an in-depth understanding of a situation and a context. May (2002), suggested that questionnaires and interviews aid in data collection by asking individuals questions, rather than only observing their behaviour. Qualitative interviews are meant to be flexible and dynamic, and are described as open ended; non-standardised, non-directive, and unstructured (May 2002). According to Denzin and Lincoln (2003), the main aim of interviews is to obtain information, which cannot be gained in another way.

There is considerable variation in interview style within the context of qualitative research. Richards (2005) highlighted that interviews can vary on a continuum from very informal to very formal. In a formal interview, the researcher asks pre-arranged questions and in an informal interview, the researcher tailors the questions to the responses given during the interview. Although the interview method was found to be
effective in this study, one should always adopt a cautious approach. Leaning toward an informal conversational interview, Steinke et al (2004) emphasised that only truly open-ended questions allow participants to answer in their own terms. Steinke et al (2004) further stated that self-report answers, as in the case of interviews, might contain data, which is incomplete or distorted. This can arise when the topic of study is threatening to the participants, if the participants fear that honest answers may harm them, or if the questions call for a higher level of insight than possessed.

Denzin and Lincoln (2003) listed four types of interviews:

- closed fixed response interview: in this approach, questions are predetermined and responses are fixed;
- standardised open-ended interview: in this approach, all questions are open-ended. This method of interview reduces the naturalness of the questions. This style is helpful when organising and analysing data;
- interview guide approach: in this approach, the researcher works out an outline of the topics before the interview. This approach continues to be conversational and can be adjusted to a situation; and
- informal conversational interviews: this style allows maximum flexibility in studying a phenomenon; however, it makes data analysis difficult.

The researcher used the interview guide approach, in keeping with the qualitative method employed in this research. The opening request for each interview was describe your role and responsibility in the organisation. During the interviews the researcher attempted to respond to comments with ‘how’ questions to maintain openness and to elicit an undirected response. At other times, the researcher asked questions to clarify information. The literature review prior to the interviews assisted the researcher in asking questions. When recording the field notes, the researcher was careful to make detailed and accurate notes in a systematic manner. Since the researcher used a qualitative method, the field notes were obtained by commencing each interview with one question, than maintaining an open conversation with the participants. As already, highlighted the other fieldwork tool used was the recorder. During the interviews, the researcher was aware of the need to listen carefully and to
open ended questions. At the same time, the researcher understood the need to keep the conversation on topics related to the study, such as team integration.

4.9.7 Leaving fieldwork

Gaining access for fieldwork is different as it involves forming a relationship with the participants. Within these social setting individuals are affected to varying degrees by the presence of the researcher and research activities. In negotiating entry to organisations, the initial relations of fieldwork were a balance between sincerity and artificiality. However, over time, these relationships became meaningful; highlighting that qualitative research relies upon establishing and building relationships of significance with others in the field. Bryman (2004) further suggested that these relationships give a qualitative research its intensity and quality. Leaving fieldwork was therefore not going to be easy. To overcome the above, when the researcher obtained consent at the beginning of the data collection the researcher made sure that the aims and objectives of the research were explained to all participants. They all recognised that the main aim of the research was to obtain a PhD qualification but they all requested that it should be kept informed and were keen to question the dissemination process. A number of participants stated that the findings should go beyond the achievement of an academic award, they wanted their voices to be heard “especially when they were asked if there was one thing they felt is not working properly and would like to change.”

Participant:

A: “To have contractors and sub-contractors more involved in the process I would also like to see designers more involved. Having the three incorporated can successfully lead to proper integration. If they are not involved at an early phase of the project then all the integration can come undone. That is one thing I would like to see changed.”

S: “Get graduates and build them through the organisation, make a long term investment. It is mainly because there is not enough investment being made on young graduates.”
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R: "We need to get people who know what project management is all about and also people who think about the welfare of ordinary Kenyans."

Leaving the fieldwork, therefore, highlighted some key considerations of qualitative research and in particular engaging with participants.

4.9.8 Qualitative Data analysis

In any qualitative research, data analysis becomes an ongoing process; meaning that the researcher has to make thoughtful, informed decisions throughout the data collection procedure Bryman (2004). According to Lewis and Ritchie (2003), the thread of analysis is woven through the interview process, when the researcher starts to record 'personal comments' beside the narrative data. The thread then winds through a coding process, which is a way to sort a large quantity of descriptive data. Finally, the thread completes its journey as the data is interpreted and new findings declared. Thus, the researcher seeks to define themes, which will lend a coherent synthesis of the data. In a qualitative inquiry, data analysis begins during the interviewing phase as new avenues of research begin to emerge. The researcher records insights and interpretations beside the actual narrative data. During the analysis, broad themes and patterns are looked for, rather than narrow, precisely variables of qualitative research (Bryman 2004). As possible topics become evident, the researcher may try to verify the research area during the interviews.

For this research, data was not a distinct stage of the study. Formally, it started to take shape in analytic notes; informally it was embodied in thoughts, ideas, hunches, and emergent concepts and continued into the writing up process. Even though the data analysis phase was placed after the fieldwork phase, the data analysis phase was an ongoing process of fieldwork itself, rather than as a final stage in a linear model. Qualitative researchers (Bryman 2004; Denzin and Lincoln 1998; Huberman and Miles 2002; Silverman 2001) stress the continuous interconnection of fieldwork and interpretation. Bryman (2004) addressed it as a spherical sequence, whereby the researcher's original theoretical position is continuously altered or refocused by the fieldwork in a dynamic dialectical method. At the end of fieldwork, the researcher had two methodological and theoretical notes, together with over three hundred and seventy-five pages of transcribed material.
At the conclusion of the transcription, the researcher must find a way to study, sort and analyse a large quantity of data. It is worth noting that, in analysing results of a qualitative research, the researcher is expected to add his own impressions and feelings to the data, then to interpret the data through reflection and introspection (Huberman and Miles 2002). Computers can easily offer assistance in the management of complex data (Richards and Richards 1998). After reviewing a number of software packages, the researcher came to conclusion that the NVivo was best suited for this research. The basic process in using the NVivo to assist in the analysis of data is to import and number the files, code data files and search the coded segments for similarities [see Appendix E for an example of a retrieved segment from NVivo]. The NVivo software has a number of facilities that allows a researcher to code items of text and then retrieve the codes in order to undertake analysis of the data. All interviews were recorded and transcribed verbatim and they were then analysed through the use of qualitative analysis software package NUDIST NVivo™. During the analysis, broad themes and patterns were looked for, rather than narrow, precisely variables of qualitative research.

One of the primary functions of this software that emerged was the ability to add memos to sections of the data, as thoughts and connections were made during all phases of the data analysis. It enabled the researcher to sort through the data and at the same time allowed exploration for patterns and recurring phenomena. This allowed the researcher to compare, contrast, and synthesise. The codification system was drawn from the initial interview questions that had been based on appraisal of key issues arising from the literature. It is essential that the codes be not seen as ends in themselves, as the answers are not in the codes but in us, and the data (Seidel 1998: p.18). For this research, the available information was entered into a computer. Data was then first coded, searched according to codes and the underlying themes and patterns revealed. Initial and subsequent impressions and thoughts were recorded in detail emphasising the organic nature of this method for data analysis. As the data analysis progressed, further details were obtained, with sections of data intensively analysed. At this stage, the researcher had already generated some categories through the ongoing theoretical reflections and applied these for initial coding purposes, refining and extending the categories as he went along. In some cases, a particular section would fall into more than one category, but this seemed to indicate the
interlinking of themes rather than a fault in coding, for example trust, communication and teamwork.

The data material was further coded using shallow categories (Davies 1999). This was followed by a more specific search (Spradley 1979) that allowed the identification of broad themes in this research that could be developed subsequently by adding clusters of codes. As the researcher progressed with the data collection, certain themes became increasingly robust such as the notion of communication, whilst others changed 'shape'. There was a continual measurement and refining of concepts as the fieldwork proceeded. The researcher purposely sought different examples that may disprove some initial theoretical constructs. As the analysis proceeded, the researcher developed working categories that explained cultural complexity on project teams. Following the construction of a category, the next component of the process was the presentation of the data in a narrative form supported by evidence from the statements recorded during the interview phase and making theoretical references as necessary.

In the next phase, the generation of themes was an ongoing and development process, garnered in part by the application of a large number of codes. Four main parent codes (or clusters) provided meaningful categories. These included:

1. identifying the critical success factors for heavy construction engineering projects in Kenya and UK;
2. establishing the importance of integration to project success;
3. reviewing current practice in Kenya and comparing it with practice in the UK; and
4. identifying factors contributing to the development of an appropriate culture required for efficient multi-cultural team integration process;

As illustrated, there was a logical progression to the order of the parent codes. This was an attempt to ensure that the main objectives of the research were met. Once this phase was complete, the researcher took each topic in turn and inserted the relevant interview extracts. Explaining the phases of the data analysis makes it appear
straightforward. However, in reality it has been a prolonged and complicated procedure, at times challenging, at other times exciting.

According to Bryman (2004), a qualitative researcher should take into account personal bias and refrain from making value judgements about the opinions and views of participants. Bryman (2004) further suggested that a qualitative researcher is expected to add his own impressions and feelings to the data, then to interpret the data through reflection and introspection. The conclusions in a qualitative research are the insights the researcher believes she or he has gleaned as the result of a lengthy, intensive effort. Whilst joining in with the debate Fielding (1993) addressed this specific issue by suggesting that understanding is achieved when the researcher knows the rules and can communicate them to members of the culture in such a way that if a colleague were to follow them he or she would be able to empathise with the group. Furthermore, members of the culture often validate these meanings before presenting the findings; this was achieved by presenting the findings to participants in Kenya and UK.

4.10 DATA COLLECTION METHODS

A combination of strategies was used, namely semi-structured interviews and a postal questionnaire. This was found to be particularly important in this study as participants were selected from a cross-section of project teams, organisations, and project environments. Having chosen a research strategy, the specific data collection device needs considering. Jobber (1991) identified three choices of survey methods: postal, telephone and face-to-face interviews. The main advantage of face-to-face is its ability to cover complex issues. Adopting a semi-structured questionnaire with topics as opposed to questions provides maximum flexibility during an interview. The length of time devoted to each topic depends upon the responses given and new topics can be applied, as they appear relevant. Face-to-face interviews allow the maximum amount of probing. Probe questions can be used to understand what the participant is saying or exploratory designed to ensure that the participant gives as full an answer as possible. Postal questionnaires must be fully structured, as clarification is not possible. A questionnaire ensures consistency and uniformity in approach in obtaining data from a disparate set of participants. There are two broad types of questionnaire: interviewer-administered and respondent / self-administered.
As highlighted in the introduction to the chapter, this study considered cultural complexity practice across a variety of project teams, organisations, and project environments. This study also investigated a wide range of behavioural, culture and socio-cultural environments issues. The study design addressed these considerations and, given the amount, variation and potential complexity of the data required, a self-administered / respondent questionnaire was used. The data and information from the survey helped to establish a good background, test the significance of the study, acquire an overview of current practices and delineation of primary synthesis for the development of the framework. The data collected at the preliminary phase served as a background for further steps, namely, semi-structured interviews.

One approach employed to this research was a series of semi-structured interviews with senior managers from differing backgrounds. The use of interviews allowed the researcher to elaborate points, which were unclear to participants. It also enabled the researcher to clarify meaning of questions and provided the opportunity to introduce the research topic and motivate the respondents to provide honest answers. Additionally, it provided the opportunity to explore some issues and allowed the researcher to classify (or at least) clarify the responses to such questions into useful categories during the course of the interviews. In the present study it was used to derive senior managers' constructs of cultural complexity affecting project performance and related issues. The method employed helped to evaluate senior managers' attitudes and perceptions as well as to refine and improve the development of the framework. Case studies were employed to validate the framework developed using data information derived from the last two steps. This would provide the opportunity for a combination of respondent / self administered postal questionnaire and interviews to yield a better consistency of the findings since it allowed a systematic comparison of different organisations by exploring different management features and examining different levels of behavioural variables involved. Employing various data collection methods provided a complete picture of the issue under investigation if it is admitted that it has more than one dimension (Bryman 2004). The following sections present the issues involved.
4.10.1 Postal Questionnaire

A preliminary survey was carried out with project managers and consultants in the UK. In an effort to maximise the response rate, complete anonymity was assured to respondents. The main purpose of the questionnaire included:

- to explore respondents’ views about the degree of success encountered in achieving team goals;
- to explore respondents’ views about improving multi-cultural project team performance;
- to explore respondents’ views about maintaining multi-cultural project team relationships;
- to explore respondents’ views about creating an integrated multi-cultural project team;
- to explore respondents’ views about aligning goals within the team; and
- to explore respondents’ views about the uses of project integration tools and techniques.

The questionnaire was found to be the most appropriate instrument for this study for many reasons, which included:

- questionnaire was found to be a quick and generally inexpensive means of obtaining data from people;
- for this study the questionnaire was found to be one of the easiest instruments to test for reliability;
- data was obtained from respondents in a wide spread geographical area; and
- since anonymity was assured, it was observed that respondents were more likely to provide honest answers in this study.

The disadvantages in a questionnaire were identified as:

- respondents had to be literate;
- in the case of any ambiguous items, some respondents did not have the opportunity to clarify the questions. These two disadvantages were addressed by
making sure that the organisations selected for this study had a background in heavy construction engineering project management; and

- it was also observed that use of a postal questionnaire required the respondents to complete the answers without any help from an interviewer. The questions had to be in simple form. This was addressed by carrying out a two stage piloting process as discussed.

Since the participants were presented with a similar questionnaire, variability in answers did not attribute to variability in the question, but only attributed to variability in the people answering.

4.10.2 Interview

Is a method of data collection in which the interviewer obtains responses from participants in a face-to-face encounter or over the telephone. Interviews are used frequently in descriptive and qualitative research studies. In this study, semi-structured interviews were used. A preliminary survey was carried out with experienced project managers in UK. The purpose of the survey was to assess clarity of questions, timing, and suitability of the respondents for the study and to establish its reliability and validity. The interview schedule included closed and open questions. The purpose was to obtain rich data about attitudes, opinions, and experiences of people involved with heavy construction engineering projects. The interviews were solely conducted by the researcher.

In-depth interviews are also suitable since a 'culture,' in this case experiences of individuals involved in heavy construction engineering project management, can be covered more completely by interviewing since one can usually talk about many more events than by merely observing or using closed questions. A semi-structured interview was adopted in this study, in which a list of topics to be covered was drawn up. Twenty interviews were carried out with senior managers: ten in Kenya and ten in UK. Questions were asked to elicit cultural complexity on heavy construction engineering construction projects. Purpose of the interviews was to get views from participants about:
• degree of success encountered in achieving multi-cultural team integration;
• benefits of project integration;
• applicability of project integration within the heavy construction engineering sector;
• difficulties faced in implementing multi-cultural team integration;
• uses of project integration tools and techniques; and
• difficulties faced in managing cultural complexity.

Advantages of interview method included:

• by focusing on multi-cultural team integration issues, most of the data obtained from Kenya and the UK were used in this study; and
• in order to obtain in-depth information, the need for confidentiality and protection of participants was assured to participants.

The disadvantages included:

• interviews were found to be time consuming;
• in this study, arrangements for interviews were difficult to make. This was mainly because a number of project managers had on-going projects to manage; and
• during the interviews, a number of participants were anxious because answers were being recorded.

The information obtained from the twenty interviews that were conducted was found to be very useful in addressing the research objectives.

4.11 RESEARCH LIMITATIONS

All scientific research, qualitative and quantitative has limitations. This section will consider the general limitations of this research, as well as the unique limitations, which apply in a cultural complexity study.
4.11.1 General limitations

Quantitative research methodology of scientific inquiry has prized objectivity as a key characteristic, however, qualitative research has been accused of too much subjectivity, because the researcher completes the process of data collection and data interpretation (Richards 2005). Qualitative research usually involves quite a small sample of participants. This may be seen as a limitation in the world of quantitative inquiry, but it is one of the keys to the process of qualitative study. The essence of qualitative research is to develop an understanding of participants in their natural setting (Denzin and Lincoln 2003). This in depth data is most likely achieved through a small sample.

In this study, the number of male participants was greater than that of female participants. One of the female participants, highlighted that within the construction sector you will always find that the percentage of males in management roles is greater than of females. Participant (I) further suggested that it is an issue, which can be addressed by encouraging final year A-level female students to enrol on construction management courses. Participant (I) went on to suggest that the construction industry needs to widen its recruitment and attract more women and more people from minority groups. In order to achieve this, governments need to make funding available for training and work experience. Participant (I) asserted that the national curriculum appears to work against this and steers away women from developing skills because the system has been designed to set a high premium on academic success. Another area of possible, limitation is in the actual data. Bryman (2004) discussed the complicated issue of 'truth' in qualitative research. This is a remainder for the researcher to be on the lookout for exaggerations and distortions from participants. Denzin and Lincoln (1998) stated that self-reporting depends on the co-operation of the participants. It relies on their honesty and requires participants to have enough self-awareness to understand their own feelings and thoughts. Richards (2005) commented that, it is necessary for the researcher to keep in mind that participants are always reporting perceptions-selective perceptions.

4.11.2 Sampling limitation

It is suggested by (Gray 2002; Tincknell et al 2004) that the main issue in the cross-cultural sampling techniques is the selection of samples that can be considered
comparable across nations. Usunier (1998) highlighted that it is extremely difficult to reach perfect comparability. In this study, the limitations were considered when the research findings were being interpreted. Hofstede (1991) clearly addressed this issue by suggesting that samples of cultures should not be confused with samples of individuals. Hofstede (1991) further draws attention to the risk of abusive stereotyping, whereby nations characteristics are calculated as individuals' characteristics or where mean values are calculated on the scores from each of the questions.

According to Usunier (1998), one can address the sampling issue by selecting a method based on several national cultural samples, each being fully representative of the populations of the country or culture, which it attempts to represent and furthermore provides comparable data across other countries or cultures. Secondly, estimating sample size is important. The application of traditional statistical procedures such as constructing confidence intervals around sample means or hypothesis testing is difficult to use in a cross-cultural setting in as much as they need precise estimates of the variance of the various populations that been compared. For this study, variance estimate was achieved by selecting a sample size from the two countries and taking into account their respective peculiarities.

4.12 VALIDATION, VERIFICATION, RELIABILITY, AND RIGOUR
In a research context, verification can be defined as the provision of a description of others understandings and perceptions of the goodness of data. There are four established test of research quality (Creswell 1994). Construct validity: the application of an appropriate research approach; Internal validity: the demonstration of cause and effect relationships; External validity: establishing the type of and extent to which the research findings are capable of generalisation beyond the realm of the study itself. Fourthly reliability: recording the methods and systems used in the research process to enable it to be respected. The validity and the reliability of qualitative and quantitative findings involve assessing their plausibility and credibility and that of any evidence provided in support of them; secondly, how convincing is the relationship between the variables and categories. Validity and reliability were achieved by first assessing the plausibility in terms of already existing knowledge on some of the cultural issues raised by participants.
The verification took place after the interpretation of data; this involved presenting the framework to the main participants of this study in Kenya and the UK. This was achieved through workshops and group discussions. These workshops enabled the framework to be continuously adjusted and refined. The main purpose of this process was to ensure that the framework that was developed was not influenced by the researcher’s own interpretation and thus distanced from the reality in question. The validation took place after the verification process; this involved presenting the proposed model to a different group of managers who were not involved with the study. This was achieved through a focus group. In this research, rigour was achieved by focusing on verification and validation; this included the responsiveness of the researcher during the fieldwork, methodological coherence, sampling, data analysis and thinking theoretically.

4.13 SUMMARY
This chapter contains information about the research approach and the research methods used in this study. It has presented the main philosophical views behind research methodologies. A review of methods available for quantitative and qualitative was then conducted focussing on data collection methods, data collection techniques, sampling techniques and analysis techniques. The choice of both quantitative and qualitative strategies adopted by this study was then justified. The main differences between quantitative and qualitative research strategies were discussed.

In terms of research approach and research method the chapter highlights the reasons for using survey and interviews. The need for diversity in terms of projects managed and organisation suggested a survey is more appropriate for this study. Secondly, the large amount, variety, and potential complexity of data required in this study suggested that interviews were the most appropriate method to use.

Following this review, this chapter provides details about the design of the questionnaire and participants in the context of obtaining valid and reliable data. The detailed design of the questionnaire is discussed and the chapter provides a rationale for including specific topics for data collection. A rationale for using simple random sampling is provided. Interactive workshops and group discussions were chosen to
allow data validity, consensus building, and sense of framework ownership. The next two chapters will be a discussion based upon the accounts of senior managers in managing multi-cultural project teams in Kenya and the UK.
CHAPTER FIVE: QUALITATIVE FINDINGS

5.1 INTRODUCTION

This chapter presents results and discussion of the qualitative findings relating to the experiences of managing projects in a developed (UK) and developing country (Kenya). Interview participants in Kenya and UK identified a number of key factors influencing multi-cultural team integration in heavy construction engineering projects. During the analysis of the qualitative data, four categories emerged: these were success factors for projects in Kenya and UK; the importance of integration to project success; current practice in Kenya; and factors for efficient integration of project processes. These were further sub-divided into nine sub-categories as presented in Table 5.1.

Table 5.1: Multi-cultural categories and sub-categories

<table>
<thead>
<tr>
<th>Categories</th>
<th>Sub-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success factors for projects in Kenya and the UK</td>
<td>• Cross cultural team selection and composition process</td>
</tr>
<tr>
<td></td>
<td>• Cross cultural leadership style</td>
</tr>
<tr>
<td></td>
<td>• Cross cultural management of team development process</td>
</tr>
<tr>
<td>Factors for efficient integration process</td>
<td>• Cross cultural communication</td>
</tr>
<tr>
<td></td>
<td>• Cross cultural trust in project teams</td>
</tr>
<tr>
<td></td>
<td>• Cross cultural collectivism on projects</td>
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<tr>
<td></td>
<td>• Cross cultural empathy in project leadership</td>
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<tr>
<td></td>
<td>• Cross cultural change management in project teams</td>
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<tr>
<td></td>
<td>• Cross cultural uncertainty on projects</td>
</tr>
</tbody>
</table>

During the discussions, the effectiveness of team integration was explored, and the facilitation factors that may influence project teams to adopt strategies in achieving effective team performance were analysed. This analysis was conducted as experiences and attitudes are known to be construed by choices available to individuals. In this chapter, for the purposes of classification the twenty participants have each been given one-letter identification from (A) to (T).
Chapter Five

5.2 SUCCESS FACTORS FOR PROJECTS IN KENYA AND UK

Participants in Kenya and UK identified a number of success factors for heavy construction engineering projects. They included the following.

5.2.1 Cross cultural team selection and composition process

During the interviews team selection and composition was mentioned as a vital factor. In this particular sub-category, all of the twenty interviewees identified a number of conditions and initiatives that are conducive to good team selection and composition. These conditions and initiatives fall within the following four main variables:

- picking people on value for money;
- understanding client needs;
- initiatives to sustain involvement and well being of all project workers; and
- quality of leadership.

For example, participant A suggested,

"When it comes to team selection it's all about picking people on value for money and this is by looking into the quality aspect of an individual. This can be achieved by making sure that the individual understands our aspiration and the needs of the organisation. It is a cultural and teambuilding thing. We do this by carrying out a multi-cultural analysis".

The twenty participants involved in this study referred to this sub-category. They argued that project team members should be carefully selected for the ability they offer as well as their capability to fit into the project team. They also pointed out that the client and project manager should allocate time so as working relationships can be developed within a project environment. This is in particular is important where the project team do not know each other or have not previously worked together. This finding suggests that senior managers in heavy construction engineering recognise and appreciate the value of getting the team to work together. This is further reflected in the discussion with participant C in the UK, who suggested,

"When we are procuring for a design project. We do ask contractors the following questions:-where have you worked before? Have you worked in projects successfully before?"
We then get references from the clients. We do look into their understanding of the project and their ability to work with us.”

In addition, participant C pointed out that

“I always want to procure a good team and that’s why I have to ask the above questions. The danger of getting references from other clients is that you are getting somebody else opinion but at least they get to break down the boundaries for you. In US and Australia they do use the above process a lot”.

Participant A went on to suggest,

“That the key to integration is making sure that you pick individuals who have the ability of working in a team and also have the ability to adapt and work with different people. I also have to look at technical and architectural competence of each individual. This then allows me to know what they are going to bring to the project. It also enables me to determine if they do have a better understanding of the project”.

In the latter part of Participant C’s response, he introduces an important point by suggesting that getting references from other clients contributes to breaking boundaries within a project environment. For example, Participant C highlighted that it becomes very visible when highly difficult issues are dealt in a mundane fashion. Once again, this suggests that the objective is to have a good project team, which brings both personal and professional respect. Establishing the project team properly at the initiation phase helps in defining and setting team goals which are united and which can be measured to assure success for the project team. Respect between team members has been highlighted by Cornick and Mather (1999). They concluded project teams should have clearly defined project goals. This finding also emerged within the lay concepts of team effectiveness in the work of Akintoye (2000) and Guzzo (1995). Some participants B, G, H, L, P and T in Kenya reported mixed experiences with this kind of approach.

“We have tried in the past in one or two projects, but we didn’t come up with the benefits we expected.”
The researcher noted that a number of organisations in UK have tried to employ contractors on a permanent basis and this has allowed a number of organisations to gain a better understanding of each contractor’s strengths and weaknesses and enable decisions to be more easily made. There was a consensus that this mainly works for large organisations.

"Participant A argued that it does allow them to get the full benefit during the project process. Some of the participants D, E, K, I and S suggested that it does depend on how the organisation does think."

Participant B claimed,

"An important thing to do is to build a framework so as to enable everyone to know what their responsibilities are."

Participants C, D, E, F, J, R and S went on to suggest,

"When it comes to selecting teams company culture plays a big part. Secondly, it comes down to individual beliefs. You can have somebody within the organisation who strongly believes in an integrated team while the rest of the company don't. It is difficult to get that blend. We select them based on how they work within a team for there is no real type of process that one has to follow."

"It's all about senior managers getting in a room like this and throwing ideas around to determine who will be leading each area of the project. Every project must have a project manager who will take full responsibility."

Participant C stated that they had just won a project, and as part of the data collection process the researcher was invited to be part of the project-briefing meeting. Managers who attended the project meeting included the operations director, bridgstream manager, sales manager that sold the project and the project manager. Before the meeting participant C stated that between the four managers, they would decide who is going to be given a particular job. During the meeting, the researcher noted that four names of sub-contractors were proposed and each manager made their decisions in terms of the sub-contractors experience. At this point, the sales manager
played a major part because he knew what had been sold. Because the company is owned by directors, they do get involved at every stage of the project.

Participant C further highlighted that when it comes to alignment of procedures, knowledge, techniques, attitudes, and process:

"They do carry out a Meredith assessment. All the senior managers and team members have done a Meredith assessment. We usually go through the results so that we can have a good team balance. We always do know how to complement our weaknesses. For instance, I am a good finisher and would thus be useful in the final phase. In terms of procedures, we don't really have anything specific to follow. It is getting harder to follow procedures because we are incorporating contract workers and not permanent staff; this makes it harder to assess the project team. It all comes down to trust".

As observed in this category, participants A, C, E, J and K in the UK reported the use of multi-cultural analysis and Meredith assessment psychological profiling methods to select team members based on compatibility of personalities. Cornick and Mather (1999) and Egan (1998) showed that the construction project team has a purpose, composition, and method of working which are unique to the industry it is formed to serve. This uniqueness stems from the fact that its composition in terms of team members is not selected because of their ability to form an effective team in human terms but because they introduce the most technically and financially attractive competitive price for construction. Participants E, F, S, R, and S in the UK stated that with about fifty per cent of work coming from abroad attitudes towards managing projects have changed dramatically. This has made a number of organisations start introducing personality analysis. Participant E suggested that if psychological profiling is not undertaken it is not possible to determine whether the individuals that are going to be an effective and well integrated part of the team.

Participant E, F and S stated,

"They do select a good team by knowing the sort of person their bringing into the team because they expect them to know what is required in a project".

During the interview, participant E and F pointed out
"The market is over stretched now, so you do find that the people we do bring in want to do the job. Most of us have worked together as well for a very long time on other projects."

Participant L stated,

"When it comes to selecting teams it mainly has to do with the company. This does involve openness, trust, fair sharing of risk and reward, an understanding of others objectives and interests. Not to forget co-operation as well within the project environment. It is difficult to get the above blend."

It was also emphasised by participants that project teams are selected based upon how each individual has performed on previous projects. As established in this research, for a successful heavy construction-engineering project, clients look for contractors who understand the client’s business needs and social responsibilities. In order to attain the above and accomplish maximum integration of the team in an optimal time, participants stated that most clients interview contractors. In the UK, it was found that a number of organisations have in-house teams and process, which ensured they establish crucial project information at the outset, before the decision to build, and engage with external contractors is taken.

There was a good consensus among participants that it is about motivating and setting up the project team and making sure that everything is well co-ordinated. Participant C stated that it is essential to ensure that you have a good communication system in place. As established in this research, the most important factor in obtaining and maintaining commitment to integration is a willingness of people to work together and making people enjoy the job throughout, teamwork is a major facet. If the structure is right then you will end up with a good team. Across all the participants, there was a general acceptance that multi-cultural teams are the right solution to the clients’ rapidly changing needs. Participant C, E, F, K, R and S stated that there has been a change in the way many major industrial projects are executed. This is especially in parts of Western Europe where local levels of investment have dropped and many construction project contractors are now working on projects in other parts of the world (Weatherley, 2006). This has led to the rise of multi-cultural project teams which are often widely separated by geography with team members from different cultures and backgrounds working together to achieve a common objective.
In practice, several of the UK participants highlighted that they had been less than successful in incorporating multi-cultural team structures into some of their projects in developing countries. They argued that in some developing countries, governments do exclude members of certain cultures and that dictates selection of contractors. They justified this by stating that a primary responsibility of the project manager is to secure the involvement and commitment of the individuals to the team goals and objectives. In this study, the researcher argues that individuals with complementary skills are critical to the success of any multi-cultural project teams.

5.2.2 Cross cultural leadership style

In this particular sub-category, all twenty participants identified factors, which they believed represented quality of leadership. The participants believed that characteristics of good leadership in heavy construction engineering projects included responsive and inspirational leadership. This was the most referred to sub-category for critical success factors of heavy construction engineering projects in Kenya and the UK. Several participants documented the quality of leadership as an essential factor to be attained for team integration. The client and project manager must keep in close contact with what is going on so that they can counter in a timely way changing project circumstances.

For example, Participant A suggested that:

"As a project manager I always make sure that our projects are aligned to the project teams and not to individuals and this is important because you have to get everyone to focus on the client needs. By doing this you make sure that everyone involved with the project does know piece and bits about the elements of the project. Leadership is also important; you have to demonstrate to the team that if you don't deliver you will have to be disciplined. You have to come to an agreement with the team about what the disciplinary measures will be".

From the respondents there was a consensus that,

"A good leader is someone who can bring the best out of individuals working within a project environment and can get people to work together. A bad leader is someone who forces individuals to do things".
Participant A went on to highlight that,

"In order to achieve commitment to team integration trust and good leadership definitely counts. I also think the procurement framework is important because that reinforces the integration culture. For example, I have had partners who encourage people not to work together by setting up contractual relationships. It is a framework that cannot support team integration. There has to be a project mechanism, which would make sure that if anything goes wrong with the project then the participants would get full support. In terms of commitment and achievement of team integration it all comes down to good leadership and trust."

It is also important to try to change people attitudes by trying to convince them that certain issues ought to be done in a certain way. This would allow senior managers to go a long way in getting people working together as a team. In all the interviews, participants expressed the belief that senior managers need to put across to the project team why individuals need to work in certain ways and emphasise this level of commitment to team members. All this comes down to good leadership. This finding was also voiced by participant B who believed,

"Issues on projects are complex. As a leader, one has to encourage people and also get involved in decision making."

For example, participant C highlighted that,

"To achieve commitment to team integration, you must make it fun. Recently, I was involved in a project that involved working long hours. What I did was to produce a questionnaire which only had yes / no questions-this was after the design phase. The questions covered included:-do you believe in working together; do you believe in communicating; do you believe in all the important things that were important on the job? Despite many quick questions, it took about two minutes to complete. One of the weak areas they highlighted was communication. Things were not being communicated correctly within the project environment; information was not being relayed well. To be honest with you, we received all sorts of answers-like "I want to go for an early lunch". But there were important things as well, like the pay review where people highlighted what percentage they wanted. So it was all about having fun."
You can be working sixty hours but still bring fun into everything you do. This finding was mostly among participants in the UK, some of the participants in Kenya expressed concern by discussing the disadvantage of this particular trait, arguing that for excellence in project performance, the project team must develop a serious and positive culture and it is the job of the project manager to ensure that this culture is created and maintained.

On the other hand, clients have to be involved at every stage of the project. Clients who only get involved at an early phase of the project are the obtuse clients. A client has to know what they really want and what they are going to receive. As argued by the participants, the best clients are the ones who stay with the project manager all the way through the project life cycle. Recent research by Briscoe et al (2004) demonstrated that the UK construction industry identified various drivers for change and prominent among these was better client leadership. The results of this study provide independent empirical support for some recommendations of the recently released *The Accelerating Change Report* (Egan 2002) and some practical intensification.

*There was a consensus that in order to maintain commitment to team integration project leaders need to always try to make the project team to enjoy the job throughout, teamwork is a major thing.*

5.2.3 Cross cultural management of team development process

A number of the respondents agreed that once the project team has been picked and the project manager chosen it is essential to introduce team-building activities. It was mentioned that team building affords an opportunity to refine the composition of the project team by testing their capacity to work together in a project environment. There was general acceptance from all the senior managers that it is vital to institute a distinctive project team identity, which will produce a good team spirit and loyalty.

Ten participants in the UK stated that they have client feedback forms, which help senior managers to know what they need to improve and what progress is being made. The feedback forms are issued on a monthly basis. The responses are categorised as excellent, good, fairly good, bad and any improvements if needed. It usually takes
two minutes to complete and clients can highlight any issues on the form. One of the items is teamwork, which includes team performance. In order to emphasise to this practice, participant C stated that:

"We do have a kick off meeting at the beginning of the project which explains why the project is being done and why it will be done in a certain way. A number of clients do come to these meetings so as to advise the project team on what they expect and want at the end of the project. We encourage this even though not all clients do it. I mean, everyone wants to be successful in life-so it's a question of how you go about measuring success within the project environment and managing the team development process".

Some participants suggested that a critical step to insure team development process is to put in place some kind of stretch targets. Participants acknowledged that stretch targets are not just a mixture of key performance that includes financial and non-financial measures but rather a system that translates the client/project manager vision and strategy into a linked set of performance measures. Participant S stated that every output or result has to be determined by a set of inputs. Participant S argued that an effective way to promote a continuous flow of ideas for improvement is to challenge individuals with project stretch targets.

Participant S claimed that he:

"Had a project whereby about six guys were working together. Four of the guys did really well but two of the guys under performed. I had to tell the two that they would not get bonuses and I can assure you it didn't go down well. The company does insist that I put it together in other words, it is a stretch target it is common in the industry".

Perhaps it could be attributed to the common culture of the industry where clients try to ensure that the aims and objectives of the project are aligned to the company culture. It has always been hard to encourage new team members to adopt company culture. In terms of aligning project needs in project development, it is important for the team to know what the value of the project is.

5.3 IMPORTANCE OF INTEGRATION TO PROJECT SUCCESS

There was a consensus that in order for project integration to be successful, there should be:
• a clear identification of who does what and reporting lines with defined roles and responsibilities for co-ordinating aspects of the design and the industrial construction process;
• performance measurement and benchmarking of both the supply team member’s performance in order to promote continuous improvement. The aim is to identify and resolve problems and to share best practice;
• arrangements for sharing efficiency gains so that all parties in the team benefit and incentives for everyone in the integrated team to work together to bring about innovation, and cost effective design solutions;
• a shared risk register with risks allocated between managers and across the team; and
• clear measurable targets, improving value for money in industrial quality, delivery times, and whole life costs that are agreed between the client and organisations that make up the integrated team.

Several participants emphasised the importance of initiatives to sustain team spirit. It is notable that individuals working in a high-performing team usually have a good mix and balance of different personality types, which enable individuals to play to their natural strengths. Some of the participants highlighted that there have always ended up with a project that is on budget, on-time and good quality. In this extract participants highlighted that some of the benefits of integration include: improved communication, greater awareness of opportunities, fewer disputes, improved performance, improved quality and greater certainty of outturn cost.

For example, participant I related that she had worked on a variety of projects whereby the teams had integrated and where some had not. This was mainly because of poor communication systems and lack of trust among project team members.

“I had a situation whereby the main contractor didn’t want to integrate with the sub-contractors mainly because of poor communication systems which were in place”.

On the other hand, she further pointed out that she had worked on other projects whereby integration has run smoothly and this was because the project teams trusted each other. Attitude does play a big part on integration as well. If you get a balance
on risk, values, and teamwork then you have a good chance of implementing the strategy successfully. In order to achieve the benefits of integration the project leader must set shared goals, which are to be shared by all, and there has to be a strong incentive for members to help each other in achieving their goals. The participants suggested that integrating project teams requires careful management and coordination. As acknowledged by participants, the client and senior managers have to ensure that there is a cultural balance of enthusiasm, experience, drive, organisation, and control which when brought together should ensure projects are given the best possible opportunity to succeed. As stated by Participant A:

"The underlying message which underpins the project team should be to try and enjoy the day to day activity on a project. This can be achieved through team building activities so as to create an environment, which is both focused and efficient in producing the project deliverables".

5.4 CURRENT PRACTICE IN KENYA AND UK
In the UK, the participants stated that the industry does not have standards for integration but partnerships but co-operatives are being introduced and integration and collaboration are becoming generally accepted needs for project teams, organisations, and industrial survival. What the industry needs to work on is engaging the client, designers, contractors, and sub-contractors in the project process. This approach is further supported by Briscoe and Dainty (2005); Chandika et al (2007); Jawaharnesan and Price (1997) who argued that construction projects involve a number of individuals, such as client, designers, consultants, contractors, sub-contractors and vendors who are often new to each individual project. The three authors suggested that in order to achieve a common project objective, these parties should all be involved in the process, and share objectives, interests and ideas for improving the performance by means of some form of team integration. It is important for the industry to try to involve the contractors and sub-contractors in the supply chain at an early phase of the project, especially when the contract is being signed and not to wait until everything has been finalised.

Participants in the UK highlighted that in a complex environment, integration is not an easy feature to attain, but they stated that it has been simplified into two strands,
supply chain integration, and project team integration. Participant D suggested that the first strand is the integration of clients and their supply chains. A number of project leaders in UK suggested that a number of clients have build relationships with a limited number of contractors who represent day-to-day interactions in one part of the industry. The other piece of evidence that emerged was that suppliers group together into supply chains. The construction industry in the UK is responding to the demands being imposed on it by its clients. Half of the participants in UK argued that contractors must re-examine the services they provide to correspond to the changing economic and social demands of clients. As suggested by participant A, R, E, S and J construction companies in UK are expanding globally to tap the potential of foreign markets which means they need to use multi-cultural teams because they promise the necessary flexibility, responsiveness and improved resource utilisation on projects. As defined by Marquardt and Horvath (2001), multi-cultural teams are a task-oriented groups consisting of people of different national cultures.

Interestingly, Participant C claimed that due to changes in the employment market in the UK it has become difficult for firms to retain workers. He went on to suggest,

"We used to hire people on a permanent basis but nowadays a big percentage is contract workers-that's what the industry has embraced now. The contract workers only come here for a couple of months and make it difficult to achieve quality. They don't understand how you work. Our work is repetitive-we work with same clients who may get disenchanted when they come across variations from previous job. So if it was up to me, I would hire people on a permanent basis. Get graduates and build them through the organisation, make a long-term investment. That would be my biggest criticism."

Though participants in the UK were relatively satisfied with how the integrated supply chains are being driven, not only through unconcealed client pressure, but also by the increasing realisation that, in an increasing independent world, it is supply chains that compete and not individual firms. Participants (I, J, K, R and S) highlighted that a number of organisations in the UK were moving away from established practice into new and enlightened areas. Communication is been managed much better than in the past. This sentiment was expressed by all the participants interviewed in the UK.
In summary, Participant A suggested,

“One thing I would like to see changed in my organisation and within the industry is to have the contractors and sub-contractors more involved in the process. I would also like to see designers more involved. Having the three incorporated can successfully lead to proper integration. If the three are not involved at an early phase of the project then all the integration realised can come undone. That is one thing I would like to see changed”.

All the ten participants in Kenya appeared strongly to suggest that the construction industry is plagued by severe problems that permeate most aspects of the industry from initial feasibility and design through to cost management of the industry. From the findings, it emerged that participants in Kenya had difficulties in introducing the concept of supply chain and team integration due to uncertainty, which has permeated throughout the construction industry. This is explored in the next theme. The researcher noted that the gap in construction practices between Kenya and the UK has widen making it increasingly difficult for participants such as clients, designers, consultants, contractors and sub-contractors to implement modern construction practices. All the ten participants suggested that we need to eradicate negative practices within the construction industry, because the amount of capital that is wasted is huge.

All the ten participants emphatically acknowledge that the main objective is to ensure that you meet the clients' aspirations in the most cost effective way. To do this, participants need to ensure that best input is obtained from relevant experts and sub-contractors in a close working relationship, together with good planning, and accounting for procurement constraints such as long lead times. However, all of this is lacking due to an image problem because the international aid agencies do not trust a number of organisations when it comes to funding. As pointed out in the literature review, a number of big construction projects in Kenya are funded by international aid agencies for example World Bank, UN and IMF. Participant G highlighted that organisations in Kenya need to address the issue of project finance and he further noted that Kenya needed to learn from countries like the UK and China. From the findings, the researcher noted that due to the capability gap in Kenya, this has left the domestic market door open for international construction firms. The government
needs to eliminate the dependence on international construction. Aid agencies favour international firms because they do have a good record of accomplishment on project management. As discussed in this extract, it does show that the construction industry in Kenya is more complex compared to the UK.

5.5 FACTORS FOR EFFICIENT INTEGRATION PROCESSES
This section describes participants' accounts of factors contributing to the development of an appropriate culture required for integration. Participants agreed that assessing critical success factors of a team is a good way of achieving integration. There was a consensus that it is essential to ensure that the team knows what the project is about and in making the team aware of the critical success factors of the project. Participants acknowledged a number of key factors influencing efficient integration process. They comprised the following.

5.5.1 Cross cultural communication
The twenty participants involved in this study believed that communication is important. Participants agreed that effective communication on projects is aided by the early establishment of clear lines of responsibility and clear robust issue resolution processes within the integrated team.

For example, Participant A highlighted that,

"It should not be about criticising people, it should be about being clearer. If an individual had a problem then he could come forward and solve it collectively as a team rather than sit back. As a client if contractors come to me with a problem, I would try and solve it collectively. This minimises recurrence of the problem. My aim is to always have a collective intent".

Participant A stated that conflict on projects can be divided into positive and negative. With positive conflict, you can get somebody to do something in a particular way, which they might of considered doing it differently. This leads to the generation of a better solution. As a project manager, you can encourage that type of conflict within a project environment because it does lead to good results. Negative conflict is the opposite; people hold different views on how issues can be resolved. The most
important thing is to find out why a conflict has occurred. The best way is to highlight to the team why you have decided to resolve an issue in a certain way.

Interestingly, Participant B highlighted that they

"Resolve conflict in a group by establishing whether you can work in a team by using evaluation forms. We also look at your previous work experience. We have also tried to ensure that resources are available to everyone within the team. In the environment we work in there is a lot of conflict. You always get people who disagree".

Participant B went on to further suggest the way he handles conflict is to get people to sit down and talk about it-finding out why the conflict happened is important.

"You can then try to achieve compromise. Most of the issues are project related".

Of the twenty participants, twelve agreed that when faced with a conflict it is essential to highlight the objectives of the project and demonstrate what the objectives of the project are. If not, you will not achieve your goals. All the participants acknowledged that effective communication is about not only sending data or information; it includes ensuring that any message is received and understood by those team members to whom it is addressed. This is made easier by team members knowing each other. Participants claimed that one has to be clear about the value management approach; your focus has to be on what are your needs. Participants agreed that value management techniques are important because they help one in highlighting the values of the project straight away. Value management also helps one to identify the purpose of the project and helps the team to understand why they are doing the project. Several participants noted that as a project leader it is essential to ensure that everyone has the right attitude by communicating to the team clearly.

As observed in the UK, participants used team workshops and meetings than newsletters and emails because face-to-face communication was more effective. The way in which project leaders communicated on projects has more influence than the actual words we use. For example, results of work by (Mehrabian, 1981) showed that the relative influence of verbal and non-verbal communication on feelings and attitudes are seven percent verbal, thirty-eight percent vocal and fifty-five percent
facial. As a result, project team members need to pay careful attention to the vocal and facial aspects of their delivery, which may comprise ninety-three percent of the communication in some circumstances.

Participant D stated that when it comes to questioning team assumptions, again value management techniques have to be in place. He further stated the need to get people to sit down, discuss the project structure, and explain why they should carry out the project in a certain way. This can be achieved by holding workshops where people discuss various issues, which emerge from the project. As a project leader, one needs to be disciplined and to respect the lines of communication that are in place.

Participant D stated that:

"What we do is to hold meetings on a weekly basis. I chair the meeting. We sit round a table and talk about the project. I do update the project program as we go along. In the meeting I also let people know about the changes that have been made. It is all about making sure that everything is discussed. In this meeting, you can end up having twenty issues popping up that you may have to deal with. We go through each issue and it is important that I do give everyone the opportunity to talk."

To develop as a project team, it is essential that learning does occur. It is good practice not only to review the project objectives and deliverables as a team at regular meetings but also to carry out a process review. It was found that there is a need to communicate lessons learned from previous company projects. The participants also expressed the view that where suitable, such learning should be included or taken account of in the present project. In some instances, the participants highlighted that communicating learning can occur as the project proceeds and it is essential that opportunity is given to review what is being done to pinpoint learning points and if possible, to refine the way the team is working. What is happening within the industry is that clients have started to interview people who have been selected to run projects. The main reason behind this is for them to assess an individual’s technical ability and to see if they can be part of a team. The participants agreed that when it comes to communicating project procedures it is hard to get the message through to team members. There was an expressed view that you need to motivate team
members or else they may take a week to do something, which should only take them a day. For example, participant C suggested,

"One former project manager, who is now a director one time said that he used to spend 70% of his time talking to people and the other 30% at his desk. The surprising thing is that the director was one of the most successful project managers within the organisation. It is interesting to note that, he rated communication as the most important tool when it came to managing projects."

Participant (C) went on to claim,

"The former project manager used to talk to people to enable them understand issues and problems".

Participant C acknowledged that his failure has been lack of communication with people at the bottom. From the above, effective communication on construction projects are not just about informing. As stated above, a key aspect of communication is the ability of the client and project leader to listen, to give feedback, and to respond to any project issues, which might arise. On the other hand, good communication with a high level of trust, honesty, and respect for others is significant in building and maintaining a high team performance. Furthermore, communication must be maintained with members as individuals and as a team. Participants suggested that adequate internal and external communication systems must be in place. The participants agreed that senior managers must take an active role in keeping team members informed. Communication from the project leader to team members must be consistent regardless of their project location, and all project team members must be aware that this communication is equal. There was a general perception that expectations, misconceptions, and misgivings from those outside the project team may increase with lack of information. Effective communication is the key to managing expectations and minimising misconceptions and misgivings.

5.5.2 Cross cultural trust in project teams

In this study, the participants appeared to agree that trust is fragile, intangible, and generally difficult to quantify but it is essential for successful of integration. Participants suggested that trust could be developed where there are good
interpersonal relationships and mutual respect between project leaders and team members. Participants recognised that trust can be promoted within projects by the behaviour of individual team members and it can be apparent at different levels. For example, trust can be at a social and professional level. However, participants suggested that as trust increases within the project team, the team members will become more open and honest with each other and this openness will enable them to jointly identify, assess, plan and manage cultural complexity more effectively. Clearly, trust depends very much on the interaction of people and interpersonal relationships, yet it tends to be construction firms, not people, that are assigned to teams. Results revealed that a number of participants cannot, or do not want to trust their team colleagues. This was mainly because a few had long memories of confrontational and adversarial relationships. Despite the above, participants highlighted that trust can be built as the project teams start to work on a project. For a project team to be fully integrated, all the team members need to trust and understand each other. Participants noted that this could be achieved by team building and team effectiveness training events. They also appeared to believe that in order to instigate, build, and maintain trust within the integrated project team the nucleus should monitor behaviour and project leaders should flag up and address any project issue that risks breaking the trust. All twenty participants agreed that trust reduces complexity and helps in building up a team.

Participant E emphasised,

“Trust is extremely important. If you don’t have trust, it’s hard to have an integrated team. Trust also means that if I do something wrong then I will be accountable. So if I do something good you say so and if I do something wrong you say so as well. This makes it easier because if an individual does something wrong rather than keeping quite, they will ask for help.”

Most participants suggested that they want to work with the right people, especially with people they know. They introduced the concept of right people in such words “they must be experienced, they must have a good technical ability”. In Kenya, a few participants place their trust in tribes. Clearly, from the above there are number of factors that influence the nature of trust in heavy construction engineering projects. The findings suggested a complicated picture of influences on integrated team
working. These are in line with an emerging picture from other studies such as Naismith et al (2005). Though participants in Kenya were cognisant of tribal trust on projects, this did not translate to projects in the UK.

Participants in UK also expressed the view that the adversarial nature of heavy construction engineering projects implies that conflict will always be a common place within project teams. To improve understanding and trust in teams, participants suggest that there needs to be open and honest communication all the time. Although most participants showed that trust could often be rebuilt, its success will also depend upon the causes of mistrust. It is clear from the above that where the level of mistrust is very high, project leaders should consider the omission of personalities from the project team and this can help to aid the situation and allow trust to re-develop. In general, participants agreed that team trust is developed when individuals in the team are working towards common objectives.

5.5.3 Cross cultural collectivism on projects
All the twenty participants described the relevance of collectivism to projects. Hofstede (1980) noted that individualism or collectivism describes whether the culture values either individual (individualism) or group goals (collectivism). According to Javidan and House (2001), this point reflects the degree to which individuals of a certain culture are encouraged to integrate into teams within organisations and society. When the discussion centred on the nature of collectivism, participants suggested that cultures that collective cultures demonstrate a more emotional dependence on the project team. They are more conforming, organised, traditional, and team oriented. In Kenya, participants highlighted that in most projects, multi-cultural teams differed in orientation between individualism and collectivism because of challenges to developing team roles in the projects. All the participants suggested that since most projects are funded by international aid agencies, a number of managers from abroad had different senses of organisational and individual responsibility. In this study, the researcher noted that when it came to defining roles on projects all the participants acknowledged that culture does vary. It was found that in a collective project environment the interest of the project group succeeded over the interest of the individual member. Interestingly, participant S argued that in an individualistic project environment the interest of an individual
could prevail over the interest of a project group. This is perhaps surprising since Participants A, C, E, I, J, R and S suggested that in a project there

"Has to be good organisation within the project. There has to be encouragement of teamwork within the project process. The mechanisms of integration depend on collectivism within the project process. It is important as well for the client/project manager to know how to engage with different type of people and also have the right attitude. This allows you to end up with a happy team".

In their analysis Hosfstede (1991), Schwartz (1990) and Triandis (1993) argued that collectivism and individualism are two ends of the same continuum. The authors highlighted that collectivists perceive themselves as independent individuals of an "in-group" who share the same responsibility of team success whilst in an individualistic organisation it is common for an individual to bear the total responsibility for either success or failure of the business. Recent research by Abraham (1997); Dickson et al (2003); Singelis et al (1995) showed that there two types of collectivism and individualism i.e. vertical and horizontal. Horizontal collectivism is associated with subordination to the goal and good of the immediate cluster to which they belong; vertical collectivists are more likely to have a sturdy commitment to the organisation as a separate unity. Vertical individualists tend to believe in a desire for the enjoyment of competition at work and strong importance on superior performance and winning. On the other hand, horizontal individualism is linked to the need for independence rooted in freedom that does coexist with the longing for conformity.

In discussions, the participants expressed satisfaction with collectivism on projects and dissatisfaction with individualism. All participants identified the counter productive effects of individualism within their organisations. They were able to highlight that this is largely caused by contractors who want to do things their way rather than conform to an imposed standard. During the discussions, some project leaders admitted of their unwillingness, at times, to conform to an imposed standard and usually led to direct conflict within the project team. Participant T suggested,
“There are number of ways in which individualism can be managed and its effect harnessed. This can be done through encouragement of team participation and redefining team boundaries”.

However, participants recognised that the development of integrated teams does require a commitment from all the team members (client, project manager, and contractors). All participants suggested that the key to integration is making sure that a client or project manager has the ability to adapt and integrate with different people. Some participants recognised this as a prerequisite to acquire the authority to make high-level decisions both internal as well as external. During the discussion participants highlighted that team members must have both the authority and answerability to achieve their project tasks. Participant A placed particular importance on the need for team independence. Internal team independence, or decision-making, includes the ability to schedule team meetings and activities, control internal team processes. It is clear that from the participants those teams with greater external decision-making authority tend to be more effective.

5.5.4 Cross cultural empathy in project leadership
Participants identified that the project leader must have empathy for the particular culture of that country for the project integration process to succeed. Participants cited that effective project leaders should understand the leadership style preferred by the project team so that the project leader’s authority is respected. Most of the participants they were able to achieve project and organisational goals. This finding suggests that in a project environment the project team must institute a supportive and positive culture. It is the responsibility of the project leader to ensure that this supportive culture is introduced and sustained. In order to maximise team effectiveness participant C pointed out that

“It helps to understand personal problems. For example we had a guy who spilt up with his wife and all of a sudden wanted to do extra hours. He felt that working more hours took his mind away from what he was going through. So I gave him more work within the project and that really helped him. Another guy wanted to do less hours for different reasons. So, understanding people’s personal issues is important and to know as well that everybody is different”.
In the above extract participant C demonstrated to the project team member by example the attitudes and behaviours he expected within the team. Participants in this study argued that an effective leader should be fair and consistent when dealing with team members. This can be achieved by not showing favour or partnership on the way they relate to one another. In general, participants described the value and need for a supportive culture through the personal encouragement of team members. They suggested that it can be achieved with an effective management style that “listens to team members” concerns and complaints. In addition it should have a positive ‘can do’ management style to address the issues described by participant C. In addition, participants felt that this approach has to be balanced by certifying that there is an expectation that the project team will perform and meet their project objectives. However, from the findings it emerged that if an individual failed to meet the required objective then the project leaders would take disciplinary action. Participant E stated that:

“You have to demonstrate to the team that if you don't deliver you will have to be disciplined.
You have to come to an agreement with the team about what the disciplinary measures will be.
It is not about imposing yourself but using your leadership skills to bring the best out of your team and respecting each individual”.

Participants agreed that empathy can be used to give the project team members confidence in carrying their project jobs. In this study, it was common for participants to suggest that project leaders should demonstrate respect and consideration towards all individuals of the team. Open communication and mutual responsibility among members is critical to maintaining respect and trust. Project leaders must practice and encourage loyalty to the team. As a result, project leaders and team members must be willing to deal comfortably with conflict, challenge, and disagreement.

5.5.5 Cross cultural change management in project teams
There was a significant debate on change management. Participants felt that they faced the biggest challenge in trying to change the way people do things in projects. Participants complained about dealing with disruptive and demotivated team members. In spite of the above, the project leaders felt that it was their duty to keep
the project teams well informed to avoid an environment of uncertainty. Participant F highlighted that

"Since you do come across a different national culture, it is important to clarify to the team that it is important to handle certain issues in a different way. This would go a long way in ensuring that you end up with a successful team. It is important to let the team know why they are doing something in a certain way. It is that level of commitment that has to be demonstrated by the project team".

Participant E suggested that in order to make sure everything is well co-ordinated you need to have an inter-disciplinary procedure in place to ensure that change takes place correctly. He went on to state that when dealing with change management,

"It is like talking to a car manufacturer who has been at it for years. Whenever they decide to launch a new model, all they usually do is to refine the old model and come up with a better version. Our experience enables us to deal with change and co-ordinate it well. We have four hundred people involved in this current project, so when it comes to change we have to make sure everything is well co-ordinated. If it is not co-ordinated properly, then we have to re-do it-which is costly".

Most participants believed that it is essential to wind up a project team in a managed way rather than letting it disintegrated. This, they felt, should be done by firstly verifying that the goals have been achieved and then celebrating project success. All participants agreed that they have social gathering paid for by the client. In order to manage change in the next project, participants suggested that it is vital to capture learning from the team. A number of participants highlighted that they do this by producing a written report. Most participants pointed out that project teams are conditioned to oppose change if it is seen as a threat and not as an opportunity. It is vital for project leaders to handle project teams sensitively if the team is to develop a cooperative culture, which delivers better value in place of an adversarial culture. There was a view expressed that constructive feedback must be sought at all stages from team members, considered and acted upon, to make the most of the benefits of integrated team working. There is a current drive within the construction industry to change to a value-based culture. In the case of Kenya, the shift will take time and there will be considerable challenges to individuals and organisations. Interestingly, in the UK participants noted that organisations that have been prepared to commit
time, energy, and resource to making this work through successful integrated team working have seen the benefits.

Evidence from the above, shows that change maybe is unavoidable or highly desirable. Changes to projects may be proposed by the client or senior managers associated with the project. In this case, it is essential that any proposed change to the project be formally controlled. Project leaders and clients need to review changes fully before they are approved and marked up for action. All approved changes should be fully documented and efficiently communicated. The importance of communication in projects, in particular its influence on the acceptance of anything new, is well documented in this study. There are number of reasons why communication is obligatory for the successful management of change to projects. These range from certifying an increased understanding of eradicating waste and motivating those involved in the change. In general, successful communication needs to be focused rather than broad brushed and timing is of crucial importance. Participant B stated that if used effectively, it could reduce non-productive effort, avoid duplication, and help minimise mistakes. Participant B further suggested that communication can be used to manage uncertainty and this may lead to problems being identified sooner or can even lead to generating new ideas that lead to better solutions for projects. Participants agreed that there should be an effective change control system in operation and all senior managers should be familiar with its operation. It appears that if the above is met, the result will be a project within the allocated time and resources.

5.5.6 Cross cultural uncertainty on projects
Another area of concern relating to factors that contribute to the development of an appropriate culture in the integration process was in relation to uncertainty on projects during the diverging and converging phase of every cross-cultural interaction, for example, meeting contractors from different cultures. Participants strongly claimed that when you come across a low uncertainty project team, they do demand less project structure but with high uncertainty project teams they consistency and clear articulation expectations that have to be in place. As suggested by participants in this study, uncertainty on projects was believed to be one of the principal causal factors underlying project team intercultural integration. When the participants were asked
how they went about addressing the issue of uncertainty, most of them stated that an uncertain situation is dealt with by gathering more data to reduce the culture and information gap. With an ongoing increase in the cultural complexity on projects, participants suggested that project leaders must try to be effective cross-cultural communicators in order to operate effectively and achieve high levels of team performance. The participants recognised that effective interpersonal skills, team effectiveness, ability to deal with cultural uncertainty, and cultural compassion toward others are learned behaviours that can be improved through multi-cultural training. It was noted that understanding how to develop the performance of a culturally diverse project team is a central goal of modern construction management research. All the participants agreed that uncertainty on projects is a complex issue. For example, with the recent uncertainty in the US mortgage market, billions of dollars, pounds, and euros were wiped off leaving the global stock market under pressure. Because of the uncertainty banks started to charge significantly more for the money they lend to each other, signalling that they were looking to limit their risks (http://news.bbc.co.uk, 2007). While the above uncertainty example used might provide a heuristic for thinking about factors that might account for uncertainty in heavy construction projects, participants acknowledged that it is essential at the initiation phase to adopt project procedures, which would apply to everyone. Participants highlighted that uncertainty is another side of cultural complexity that project leaders need to manage proactively. As suggested by participant E, definitions of project goals and objectives are important to manage uncertainty. Uncertainty can have various impacts in projects. They vary during different project phases and between projects. Impacts can be positive, negative and everything between. Evidence from this study shows that uncertainty causes challenges in projects together with other internal and external factors. However, participants argued that some projects could benefit from uncertainty. Uncertainty needs to be managed to gain full advantage from it. Before uncertainty can be managed, the issue needs to be discussed because of the sensitive nature of cultures. In many cases participants noted that, cultures are very dynamic which creates another challenge for uncertainty on projects.

5.6 SUMMARY
This chapter has described participants' accounts of managing integration in heavy construction engineering projects. The results of the interviews indicated that the
extent of integration is complex and is influenced by team selection, leadership style, and management of team development, communication, trust, collectivism, empathy, change management, and uncertainty. Participants' accounts of integration were related to their opinions about cultural complexity. Though opinions towards integration appeared to be similar between project leaders in Kenya and the UK, project leaders in the UK appeared to cope much better with the ever-accelerating pace of change in the construction industry. Though the dynamics and diversity of teams were found to be complex, participants in this study showed that there are many benefits to be derived from working with fully integrated teams. Participants in the UK showed that many clients now prefer to work alongside the contractor in integrated teams. This enables them to share knowledge and resources easily and efficiently. Teams better integrated have the best balance of culture, skilled and semi skilled, experienced and inexperienced people. This means that they share the same aim—a successful project!

The discussion of results in this chapter shows that cultural differences on projects can do considerable damage to the organisation of heavy construction engineering. Irrespective of whether the project is international or not, participants demonstrated that cultural differences contribute to complexity on projects. This chapter provides a new perspective on the interpretation of communicative behaviours in project teams. With an ongoing augment in the cultural diversity and complexity of teams, participants showed that project leaders must be effective cross-cultural communicators in order to function effectively and achieve high levels of team performance. Participants in the UK showed that effective leadership skills, team effectiveness, ability to deal with cultural uncertainty and empathy could be enhanced on projects through multi-cultural analysis and Meredith assessment. The findings have not furnished any final answers to the research objectives, though they do support the idea that culture has a pronounced effect on projects. As shown in this chapter, the challenge of project leaders managing multi-cultural integrated project teams is to learn to be conscious of the roots of cultural differences, to assess their impact, and to build structures, procedures and a working project environment that promotes cultural synergy. In the next chapter, quantitative results are presented in relation to project teams.
CHAPTER SIX: QUANTITATIVE FINDINGS

6.1 INTRODUCTION
This chapter will present quantitative findings obtained from the participants relating to the concept of multi-cultural team integration. In order to explore multi-cultural team integration among the survey participants it was necessary to access the following factors: the participants' places of work, job titles, project roles and project management experiences. As a consequence of the breadth and depth of the questionnaire survey (see Appendix A), eight different broad categories emerged from the findings. This chapter discusses the different categories and commences with a presentation of the profiles of the participants followed by a discussion of the eight categories. They included: monitoring project team performance; achieving team goals; integrating supply teams; project team performance; aligning goals within the team; maintaining team affiliations; managing obstacles to integration; and effective formation of multi-cultural teams.

6.2 Survey participants place of work
To achieve a diversity and variety of project environments, thirty-one organisations were selected from a number of business sectors. The business classification used by the European Construction Institute (ECI) at Loughborough University and Ministry of Trade and Industry in Kenya was applied to ensure representation from traditional project focused organisations, such as Energy and Construction. The organisations that were surveyed were mainly involved with heavy construction engineering projects. Given that the purpose of the sample was to appraise multi-cultural team integration in heavy construction engineering projects, the majority of participants (thirty-two point five percent) came from the construction sector, followed by oil and gas (twenty-eight percent), process (twenty-three point four percent) and electric power (fifteen point one percent). The actual figures and gender split are as illustrated in Table 6.2.
Table 6.2: Profile of survey participants’ place of work

<table>
<thead>
<tr>
<th>Business Sector</th>
<th>Organisation</th>
<th>Participants</th>
<th>Male</th>
<th>Female</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and Gas</td>
<td>9</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>28.0</td>
</tr>
<tr>
<td>Construction</td>
<td>11</td>
<td>43</td>
<td>39</td>
<td>4</td>
<td>32.6</td>
</tr>
<tr>
<td>Process</td>
<td>7</td>
<td>31</td>
<td>29</td>
<td>2</td>
<td>23.5</td>
</tr>
<tr>
<td>Electric Power</td>
<td>4</td>
<td>21</td>
<td>21</td>
<td>1</td>
<td>16.0</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>132</td>
<td>126</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>

From the above, it can be observed that within Kenya and the UK there is a high proportion of men in managerial positions. This was expected since most women who embark on careers within the sector are in engaged in supporting project roles. As noted in the literature review, the industry’s market is segregated both horizontally and vertically by sex (Fielden et al 2001). This statistic highlights construction as the most male dominated of all major Kenya and UK industrial sectors. Whilst many would argue this is an important point, it has received little attention in practice. A key feature about the sector was that some organisations in Kenya and the UK had a certain level of cultural diversity and regularly used teams. Using this criterion, the researcher identified a number of large and medium sized organisations in Kenya and the UK, selecting the companies and the research participants based on the size of their international operations and record of employing multi-cultural teams.

6.3 Participants job title and project role

There was a diverse pool of participants, including managers who were residents of highly developed areas and cities in Kenya and the UK. Typically, participants had previously worked in international environments; therefore, the national culture of participants was the primary dissimilarity. As illustrated in Table 6.3, participants were split into five project titles. Again, a similar situation of male dominance was apparent in terms of project titles. Statistical evidence in this research indicates that the majority of male participants in Kenya and the UK were project managers, this is perhaps surprising since there were no female construction managers. It was found that the majority of female participants worked as project managers. It could be suggested that women do not naturally choose construction management as a career so making this difference in gendered choice acceptable within the construction industry. Some of the female participants in this research pointed out that the lack of success in attracting women is mostly rooted in its unpopular image. Women participants in Kenya and the UK argued that the heavy construction engineering is
seen as a tough, heavy, and dirty sector. This unhealthy situation does not augur well for attempts to diversify the construction profession to make it more reflective of the community it serves. As a result, if the working environment is not right for women, it is likely that others, such as disabled individuals and members of black minority ethnic groups, will also fail to thrive and doom initiatives aimed to attract these groups into the construction profession.

Table 6.3: Profile of survey participants’ project title

<table>
<thead>
<tr>
<th>Job title</th>
<th>Male</th>
<th>Female</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project director</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>5.3</td>
</tr>
<tr>
<td>Project manager</td>
<td>67</td>
<td>3</td>
<td>70</td>
<td>53</td>
</tr>
<tr>
<td>Project planner</td>
<td>11</td>
<td>2</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Construction manager</td>
<td>9</td>
<td></td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Project engineer</td>
<td>33</td>
<td></td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>6</td>
<td>132</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 6.3 shows that a large proportion of participants, fifty-three percent, identified management as their main project work area. Those participants involved with management were evenly distributed between those working in construction, process, energy, and petrochemical projects.

6.4 Project Management Experience

To establish the experience of participants, a question pertaining to the number of years involved in managing projects was included. Participants’ levels of experience in relation to the management of projects differed greatly. This has been illustrated Table 6.4, which illustrates that the difference between males and females involved in managing heavy engineering construction projects is less than ten years. This suggests that the concept of gender equality in construction project management is beginning to be readdressed. Perhaps in fifteen to twenty years time the findings could be different.
Table 6.4: Profile of survey participants’ time involved in managing projects

<table>
<thead>
<tr>
<th>Time involved in managing projects</th>
<th>Male</th>
<th>Female</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 20 years</td>
<td>166</td>
<td>109</td>
<td>275</td>
<td>100</td>
</tr>
<tr>
<td>16-20 years</td>
<td>106</td>
<td>109</td>
<td>115</td>
<td>80.3</td>
</tr>
<tr>
<td>6-15 years</td>
<td>20</td>
<td>3</td>
<td>23</td>
<td>17.4</td>
</tr>
<tr>
<td>1-5 years</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>2.27</td>
</tr>
<tr>
<td>Less than a year</td>
<td>126</td>
<td>6</td>
<td>132</td>
<td>100</td>
</tr>
</tbody>
</table>

The largest proportion of participants eighty point three percent had sixteen to twenty years experience of managing projects. The remainder of the participants are fairly balanced between six to fifteen years of experience (seventeen point four percent) and one to five years of experience (two point two seven percent). The most striking feature was the low proportion of female participants involved in managing heavy engineering construction projects in Kenya and the UK. In Kenya, only two female participants completed and returned the postal questionnaire, the remaining four were from organisations based in the UK. This again highlights the fact that a high level of heavy engineering project work is carried out by males. It is clear from the above that, despite some proposals for change in the construction industry, the climate for practicing construction project management is not providing adequate scope for women to thrive. This unhealthy situation does not prefigure well for attempts to diversify the profession to make it reflect the composition of the populations of Kenya and the UK. From the findings, a key distinction that emerged between the two groups showed that UK participants had more international work experience, with majority having more than fifteen years of construction project management.

6.5 Senior Managers response to Questionnaire Findings

This section presents a summary of the questionnaire, which was used to measure the attitude and experience of senior managers in Kenya and UK towards various workplace issues. As previously mentioned, six categories emerged which have been presented in Table 6.5. The aim of the questionnaire was to assess the participants’ views on leadership, team integration, and project performance within their organisations. A copy of the questionnaire is included in the appendices (see Appendix A).
Table 6.5: Summary responses of senior manager questionnaire

<table>
<thead>
<tr>
<th>Level of importance</th>
<th>VI</th>
<th>I</th>
<th>FI</th>
<th>SI</th>
<th>NI</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring project team performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-ordination of resources</td>
<td>79 (59.3%)</td>
<td>48 (36.1%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>1.45</td>
<td>48</td>
</tr>
<tr>
<td>Agreeing cost project objectives</td>
<td>86 (65%)</td>
<td>43 (32.2%)</td>
<td>4 (3%)</td>
<td>0</td>
<td>0</td>
<td>1.38</td>
<td>43</td>
</tr>
<tr>
<td>Monitoring, controlling a project</td>
<td>41 (31%)</td>
<td>89 (67%)</td>
<td>3 (2.3%)</td>
<td>0</td>
<td>0</td>
<td>1.71</td>
<td>41</td>
</tr>
<tr>
<td>Adherence to defined procedures</td>
<td>36 (27.1)</td>
<td>76 (57.1%)</td>
<td>13 (10%)</td>
<td>8 (6%)</td>
<td>0</td>
<td>0.95</td>
<td>24.5</td>
</tr>
<tr>
<td>Project start-up</td>
<td>8 (6%)</td>
<td>29 (22%)</td>
<td>96 (72.1%)</td>
<td>0</td>
<td>0</td>
<td>2.66</td>
<td>29</td>
</tr>
<tr>
<td>Delegating responsibility</td>
<td>22 (17%)</td>
<td>91 (68.4%)</td>
<td>13 (10%)</td>
<td>7 (5.3%)</td>
<td>0</td>
<td>2.03</td>
<td>12</td>
</tr>
<tr>
<td>Achieving team goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoothness to handover</td>
<td>103 (77.4%)</td>
<td>24 (18%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>1.27</td>
<td>24</td>
</tr>
<tr>
<td>Responsiveness to change</td>
<td>99 (74.4%)</td>
<td>26 (20%)</td>
<td>8 (6%)</td>
<td>0</td>
<td>0</td>
<td>1.32</td>
<td>26</td>
</tr>
<tr>
<td>Issue resolution</td>
<td>87 (65.4%)</td>
<td>41 (30%)</td>
<td>5 (4%)</td>
<td>0</td>
<td>0</td>
<td>1.38</td>
<td>41</td>
</tr>
<tr>
<td>Co-operation</td>
<td>51 (68.4%)</td>
<td>39 (29.3%)</td>
<td>3 (2.3%)</td>
<td>0</td>
<td>0</td>
<td>1.34</td>
<td>39</td>
</tr>
<tr>
<td>Dispute avoidance</td>
<td>44 (33.1%)</td>
<td>85 (64%)</td>
<td>3 (2.3%)</td>
<td>0</td>
<td>0</td>
<td>1.67</td>
<td>44</td>
</tr>
<tr>
<td>Communication</td>
<td>112 (84%)</td>
<td>14 (11%)</td>
<td>7 (5%)</td>
<td>0</td>
<td>0</td>
<td>1.21</td>
<td>14</td>
</tr>
<tr>
<td>Joint-decision making</td>
<td>85 (64%)</td>
<td>36 (27%)</td>
<td>12 (9%)</td>
<td>0</td>
<td>0</td>
<td>1.45</td>
<td>36</td>
</tr>
<tr>
<td>Creating an integrated supply team</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project-selection, prioritisation</td>
<td>93 (70%)</td>
<td>35 (26.3%)</td>
<td>5 (4%)</td>
<td>0</td>
<td>0</td>
<td>1.33</td>
<td>35</td>
</tr>
<tr>
<td>People selection</td>
<td>124 (93.2%)</td>
<td>6 (5%)</td>
<td>3 (2.3%)</td>
<td>0</td>
<td>0</td>
<td>1.09</td>
<td>6</td>
</tr>
<tr>
<td>Improving project team performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to deal with quality</td>
<td>42 (31.6%)</td>
<td>80 (60.2%)</td>
<td>11 (8.3%)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>42</td>
</tr>
<tr>
<td>Ability to deal with risk</td>
<td>106 (80%)</td>
<td>22 (17%)</td>
<td>5 (4%)</td>
<td>0</td>
<td>0</td>
<td>1.24</td>
<td>22</td>
</tr>
<tr>
<td>Budgeting control</td>
<td>44 (33.1%)</td>
<td>83 (62.4%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>1.71</td>
<td>44</td>
</tr>
<tr>
<td>Ability to deal with time</td>
<td>88 (66.2%)</td>
<td>31 (23.3%)</td>
<td>14 (11%)</td>
<td>0</td>
<td>0</td>
<td>1.29</td>
<td>31</td>
</tr>
<tr>
<td>Ability to deal with project change</td>
<td>81 (61%)</td>
<td>45 (34%)</td>
<td>7 (5.3%)</td>
<td>0</td>
<td>0</td>
<td>1.44</td>
<td>45</td>
</tr>
<tr>
<td>Ability to deal with team integration</td>
<td>127 (95.5%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.04</td>
<td>3</td>
</tr>
<tr>
<td>Aligning goals within the team</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual work plan</td>
<td>6 (5%)</td>
<td>13 (10%)</td>
<td>114 (86%)</td>
<td>0</td>
<td>0</td>
<td>2.81</td>
<td>13</td>
</tr>
<tr>
<td>Clearly defined goals</td>
<td>94 (71%)</td>
<td>32 (24.1%)</td>
<td>7 (5.3%)</td>
<td>0</td>
<td>0</td>
<td>1.34</td>
<td>32</td>
</tr>
<tr>
<td>Organisation culture</td>
<td>89 (67%)</td>
<td>33 (26%)</td>
<td>11 (8.3%)</td>
<td>0</td>
<td>0</td>
<td>1.41</td>
<td>33</td>
</tr>
<tr>
<td>Collective work plan</td>
<td>127 (95.5%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.04</td>
<td>3</td>
</tr>
<tr>
<td>Maintaining team affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client participation</td>
<td>126 (95%)</td>
<td>4 (3%)</td>
<td>3 (2.3%)</td>
<td>0</td>
<td>0</td>
<td>1.2</td>
<td>4</td>
</tr>
<tr>
<td>Team contribution to planning</td>
<td>33 (25%)</td>
<td>13 (10%)</td>
<td>87 (65.4%)</td>
<td>0</td>
<td>0</td>
<td>2.5</td>
<td>33</td>
</tr>
<tr>
<td>Contribution to continuous improvement</td>
<td>18 (14%)</td>
<td>74 (56%)</td>
<td>41 (31%)</td>
<td>0</td>
<td>0</td>
<td>2.17</td>
<td>41</td>
</tr>
<tr>
<td>Identification of business related issues</td>
<td>0</td>
<td>13 (10%)</td>
<td>87 (65.4%)</td>
<td>33 (25%)</td>
<td>0</td>
<td>2.15</td>
<td>33</td>
</tr>
<tr>
<td>Project manager leadership</td>
<td>123 (92.5%)</td>
<td>6 (5%)</td>
<td>4 (3%)</td>
<td>0</td>
<td>0</td>
<td>1.11</td>
<td>6</td>
</tr>
<tr>
<td>Trust</td>
<td>127 (95.5%)</td>
<td>6 (5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.04</td>
<td>3</td>
</tr>
</tbody>
</table>

UK=66, Kenya=66, Total=132

Measuring instrument: Very important (VI), Slightly important (SI), Not important (NI), Important (I), Fairly important (FI)
6.5.1 Monitoring project team performance

Within the context of this study, the purpose of this category is used to monitor the progress of team goals. The findings indicate that, the factor regarded as most important is "agreeing cost project objectives", with a percentage score of sixty-five. This is closely followed by "co-ordination of resources", "monitoring controlling a project", "adherence to defined procedures", "delegating responsibility" and "project start-up", with percentage scores of fifty-nine point three, thirty-one, twenty-seven point one seventeen and six respectively. Overall, participants considered this group of factors as very important. It emerged that in some organisations the importance of monitoring project team performance varied between different phases of the projects. The variation in levels of importance expressed by different participants who at times were involved within the same project was very striking, this suggests that monitoring team performance should be flexible and a mechanism put in place to monitor continuously the process. In addition, researchers and project experts could face challenges devising a prescriptive method. They need to be more knowledgeable of the projects and individuals involved. Similarly, project leaders should re-examine team performance jointly with the team.

From the results, the participants emphasised the timely provision of resources. It is important in a project team that there are sufficient suitable resources, and experienced project leaders available to monitor team performance. In this category, it was found that the two groups differed in a number of ways, for instance a majority of participants in the UK felt that 'agreeing cost project objectives' was the most important variable whilst a high proportion of participants in Kenya agreed that 'co-ordination of resources' was the more important factor when monitoring project team performance. Interestingly, female participants considered co-ordination of resources as the most important. This is not surprising given the fact that most construction projects have different specifications, scope, and schedules. However, it is essential to highlight that for a high performing project team greater clarity needs to be placed on both variables.

6.5.2 Achieving team goals

In this survey, eighty-four percent of participants agree that if project teams are to be effective, they need to have clear communication procedures (see Table 6.5). For a
high performing project team, seventy-seven point four percent of participants stated that smoothness of handover was very important. In this category, the significant finding was that there was no different between participants in Kenya and the UK when it comes to achieving team goals. In terms of achieving team goals, participants from Kenya and the UK rated highly, communication, smoothness of handover, co-operation, issue resolution, and joint decision making. The results show that project leaders need to hold ad hoc review meetings with project teams. In order to achieve team goals, the project leader and client have to make sure that they do have a balanced project team which has within it most, if not, all the expertise necessary to deliver team goals. The results of the study for this question clearly demonstrate that individuals in high performing integrated project teams usually have considerable freedom of action on projects. It is the responsibility of the project leader to make sure that the alignment of objectives and members of a project team will be pulling in the same direction. The main purpose of developing a set of reciprocated goals is to harness the power of the whole team. There will always be problems in heavy construction engineering projects. Bennett and Jayes (1995) noted that the essential feature of successful partnering relationships is an agreed method for resolving problems. In response to the above, the survey found that the participants perceived the use of a clear and robust issue resolution process as being very important and furthermore it needs to be understood by all team members as it will define and clarify roles, responsibilities, and authority.

### 6.5.3 Creating an integrated supply team

In this survey, participants in Kenya and the UK both considered ‘people selection’ as very important. One hundred and twenty-four (ninety-three point two percent) out of one hundred and thirty-two participants agreed that successful multi-cultural project performance can be improved through the development of integrated project teams. As illustrated in Table 6.5, ‘people selection’ is the most important decision project leaders have to make when setting up a supply project team. As argued in the qualitative findings, it is essential for project leaders to create a common understanding between project team members since lack of culture compatibility between project teams was found to be the most common cause of both team and project failure. Interestingly, seventy percent of participants considered ‘people selection’ and ‘prioritisation’ as quite important. Thomas and Thomas (2005) argued...
that a structured team selection process should be based on a clear value criteria and a robust scoring method for qualitative and quantitative criteria, as the foundation of selecting an effective integrated project team, fully aligned and focused on delivering best value on projects. In this category, the survey results suggest that when establishing an integrated multi-cultural project team, the key factors to consider are compatibility of individuals and project task.

6.5.4 Improving project team performance

Improving project team performance is the ongoing pursuit of added value through team partnerships. Participants' opinions of the importance of the six different team performance criteria are given in Table 6.5. The two criteria with the highest levels of agreement as to their importance are “ability to deal with integration” and “ability to deal with risk”, with ninety-five point five and eighty percent of the participants respectively, stating that these criteria were “very important”. This is reflected in the ranking criteria, based on mean scores. The median distribution for the other four variables showed little evidence for lack of agreement that they are important measures of project team performance. The exception is the “ability to deal with time” and “ability to deal with project change”, with sixty-six point two and sixty-one percent of the participants, correspondingly highlighting that these were very important. This contrasts with “budgeting control” and “ability to deal with quality”, which only thirty-three and thirty-one point six percent of the participants, respectively, believed that these were very important. These results are confirmed by their mean scores. The bottom ranked criterion of “budgeting control” has a mean score of one point seven one, which indicates an average opinion of “very important” and “important”, and the last but one criterion of “ability to deal with quality” has a mean score of two, indicating an average score between “very important” and “important”.

These findings reveal that improvements in integration, risk, time, and project change are areas where project leaders should focus on when dealing with project team performance. Maylor’s (2003) study showed that it is essential to ensure that positive inducements are in place, which will encourage a quality approach to team performance. Maylor maintains that the main constraints of project complexity are quality, time, and cost. Quality has to do with the standards that will appraise the
output of the process as well as the project's success itself. This aspect is often referred to as project scope. According to Juran (1997), quality management demands greater supervision and commitment from senior managers. It is an established fact that clients will go for contractors who offer the greatest value. Some of the values clients look for in contractors are reliability, convenience, adequate performance. All these criteria come under the umbrella of quality. Whilst many would argue this is an important dimension, in this study it has received little attention. Overall integration and risk remain the most important and commonly applied criteria in the assessment of team performance on projects.

6.5.5 Aligning goals within the team
Aligning project goals within a team is the ongoing process of agreement on a set of common objectives. The process for aligning project teams must be done thoroughly because project team members come from different organisations and cultures. The fifth dimension concerns aligning goals within the project team. In this category, there were four main areas as shown in Table 6.5. In this dimension, the two criteria with the highest levels of agreement as to their importance are “collective work plan” and “clearly defined goals”, with ninety-five percent and seventy-one percent of participants, respectively, stating that these criteria were very important. Ninety-six percent of the participants stated that to be effective, construction project teams need to have a cohesive work ethic and clearly defined goals aligned within the team and organisation. For a high performing project team, the client and project manager need to provide detailed project specification to the team. As illustrated in this dimension, sixty-seven percent of the participants agreed that project leaders should have some sort of detailed project specification in place. Interestingly and most significantly, some clients leave it to the project manager and project team to deal with it in an ad hoc manner.

In this category, it emerged that for a high performing integrated project team greater clarity is needed. For high performance teams the client and project manager need to set high specific goals for the team. Setting collective or individual goals within a project team is not enough for project performance excellence, although it is essential to set collective priorities and project work plans. To certify the whole integrated team is pulling in the same direction and to make sure the team is equally supporting
each other, it is vital for the client and project manager to ensure that the team goals are aligned. This can be best achieved through regular project team meetings. During the meetings, the client and project manager should allow each team to test project goals against the project objectives. For each project goal, it is crucial to ascertain and, if possible, identify the extent to which it contributes to or achieves one or more project objectives. The results of this dimension clearly demonstrate that there should be an understanding within the project team that, not only does each individual project team have a responsibility to complete their own goals but there is also an obligation that team members jointly support each other where appropriate in the achievement of the project goals. This is perhaps not surprising since only five percent of the one hundred and thirty-two participants stated that individual work is very important.

6.5.6 Maintaining team affiliations
The final dimension focuses on maintaining team affiliations on projects. This dimension is concerned with building and maintaining relationships with organisations and individuals. To achieve this, the six main criteria's that emerged are as represented in Table 6.5. In terms of percentage scores, the factor regarded as important is “trust” ninety-five point five percent as shown in Table 6.5. This is closely followed by “project manager participation” and “client participation”, with mean scores of one point one one and one point two. The project manager has to set a tone for the project, which will be conducive to the achievement of the project objectives. The creation of trust in project teams is more difficult to achieve in projects (Bishop 1999). Bishop claimed that one of the major challenges of cross-functional, distributed teams is the development of trust. In order to achieve trust, the client and project manager need to establish a common team culture from the outset and ensure that all team members are aware of their roles and responsibility in achieving the shared goals. Therefore, through client participation and project manager leadership they need to show commitment and belief that it can be made to work.

To boost confidence and enhance cohesive team working, it is necessary that senior managers build trust among themselves especially in the early stages of the project. Trust is essential in cross-functional, project teams because the higher the interdependence between disciplines means that project teams must depend on the
functional expertise of other project teams. However, trust may be more difficult to create in these project teams because project teams are less familiar with the methods of team members from other disciplines and geographic location makes it more exigent to form a shared understanding. As noted earlier on, it is vital for the client and project manager to set-up project meetings on a regularly basis to avoid complexities that could arise. This suggests that commitment and belief are key components of building trust on multi-cultural teams. The challenges multi-cultural project teams face are compounded when team members are distributed and have few opportunities to interact face to face, rely heavily on technology to mediate their interactions, and have cultural or language barriers.

In this study, it emerged that there is a growing recognition of the central position trust plays in integrated multi-cultural project teams. For example, Thomas and Thomas (2005) stated that one of the basic elements of a cooperative relationship is mutual trust. The authors further suggested that trust is a salient factor in determining the effectiveness of many relationships. Trust is crucial to affiliation, collectivism, leadership, participation, and organisational culture. Many people instinctively feel that higher trust for one's project team members will result in better team affiliation, however, in this study the issue of trust was found to affect other elements of project life. It has appeared that, rather than having a direct impact on team affiliation; trust has a direct effect on other determinants of performance, such as leadership and participation.

6.6 Managing obstacles to integration
In this study, participants from Kenya and the UK felt that “communication”, “people selection”, “change management”, “issue resolution” and “risk” were obstacles to project integration. The most commonly cited obstacle to integration of multi-cultural teams was a wider project factor, namely “communication” as illustrated in Table 6.6.
Table 6.6: Outline of respondents’ views on ranking of obstacles to project integration

<table>
<thead>
<tr>
<th>Variables</th>
<th>Response</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Communication</td>
<td>56</td>
<td>42</td>
</tr>
<tr>
<td>2 People selection</td>
<td>29</td>
<td>22</td>
</tr>
<tr>
<td>3 Ability to deal with project change</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>4 Issue resolution</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>5 Risk</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

In terms of the specific steps in managing information flows, participants in the UK affirmed that when managing projects in developing countries (for example, Dubai, Azerbaijan, Saudi Arabia), one of the causes of communication difficulties was that words have different meanings and values to people, even when the same language is being used as medium of communication. Verbal communication is a major vehicle for greater project performance and it is a significant issue as confirmed by this study. The second highest obstacle identified was people selection, twenty-two percent of participants recognised that as the most common issue, sixteen percent of participants stated that ability to deal with project change as the third highest, thirteen percent of participants identified issue resolution as the fourth highest and eight percent of participants believed that risk was the fifth highest. The survey results suggest that there will always be obstacles on multi-cultural project teams. As illustrated in this dimension, these problems may be driven by communication, people selection, change management, and issue resolution. To capitalise on efficiency in the team, it is critical for the client and project manager to establish a clear and robust process at an early stage of the project in order to identify and resolve obstacles clearly and swiftly before they develop into major problems. It is essential for project leaders effectively to resolve issues speedily where and when they arise.

6.7 Effective formation of a multi-cultural team

Participants’ views on effective formation of a multi-cultural team are given in Figure 6.7. In this question, participants were asked to indicate how multi-cultural teams could successfully be formed. The findings are presented in the following sequence: communication, project manager leadership, client leadership, people selection, and risk. The factor regarded as most important is “communication” with a percentage score of thirty-five.
From the survey results, it can be observed that the participants believe that interaction among multi-cultural team members can stimulate the effective formation of an integrated team. In this study, it has been shown that heavy construction project management is a collective endeavour. In this feature, project leaders have noted that if integrated project teams fail to communicate effectively, then they will be unable to achieve their collective objectives and talents; this does mean that as a team they will be less effective. It is essential that the project manager take ownership in making sure that both internal and inter-group communication is implemented. This can be achieved through effective leadership and maximising effective external communication procedures. Dainty et al (2006) stated that the interdisciplinary nature of construction project teams is such that they will always involve project teams from different organisations, backgrounds, skills, and knowledge coming together for short periods to work collectively. The process of team formation and reaching a stage where individuals communicate can be an issue in construction projects. The survey results suggest that communication and leadership does influence effective team formation on projects. As highlighted in the literature (Dainty et al 2006), the development of team synergy and a positive project chemistry is theoretically straightforward. The researcher is aware of the dynamic nature and characteristics of heavy construction engineering projects and that it means that team formation may be more problematic than in environments that are more static. Here individuals will join teams for defined periods before moving to other projects. This temporal dimension makes it more complex as highlighted by participants in this study.
6.8 Exploring differences between scores on variables

Measures of association are usually utilised to determine and describe the nature of any relationship between different variables. In this study, the measuring of variable association was found to be essential in that it was used to explain and illustrate the potential relationship between the variables. The display of relationships between the variables added rigour to this study. Obviously, the above depended on the aim and objectives of this study. The two main issues linked with the measuring association are the extent and direction of the association and cause-effect inferences. There are a number of statistical tests used to determine whether a difference between two groups or variables is significant. In deciding the most suitable statistical test to analyse data, it is vital to bear the following considerations in mind: if the data are categorical or non-categorical.

In this study, t-test was found to be the most appropriate since the study dealt with more than two sets of means. From the qualitative findings, it was revealed that there was no consensus on the influence of some of the variables affecting project performance. Therefore, it was decided to establish the degree to which participants in Kenya and the UK agreed to the rankings of variables affecting project performance. For this purpose, the t-test was used to assess whether the means of the participants' findings from the UK and Kenya were statistically different from each other. By matching the two means, it was found that the degree of error deriving from differences between the Kenyan and the UK participants was reduced. The analysis helped to show a significant relationship between the six category's mean scores.

6.9 T test for two unrelated means

In this study, the t-test was used to determine if the means of the two samples differed. This was achieved by comparing the difference between the two means with the standard error of the difference in the means of each variable, which is calculated using the following expression:

\[ t = \frac{\text{sample one mean} - \text{sample two mean}}{\text{Standard error of the difference in mean}} \]
The standard error of the difference in means, like the standard error of the mean is usually distributed. To compare the two means for each variable, the following procedure was followed using SPSS for windows 12.0:- Analyse - Compare Means - Independent-samples T Test [opens independent-Samples T test]- satis -button-[puts satis under Test Variables]-[e.g. achieving project team goals]-Define Groups-in box beside Group 1: Kenya-box beside Group 2: UK-Continue-OK. If not using SPSS the following equation can be used:

\[ t = \frac{\bar{X}_1 - \bar{X}_2}{s_{\bar{X}_1-\bar{X}_2}} \] where \( s_{\bar{X}_1-\bar{X}_2} = \sqrt{\frac{s_1^2 + s_2^2}{n}} \)

This equation is only used when the two sample sizes (that is, the \( n \) or number of participants of each group) are equal as in this study. Where \( s \) is the grand standard deviation (or pooled sample standard deviation), \( 1 = \) group one, \( 2 = \) group two. The denominator is the standard error of the difference between the two means. Alternatively, some researchers use the control group standard deviation for a more conservative estimate (Bryman and Cramer 2001). Table 6.9 presents the rankings of project integration factors provided by participants in Kenya and the UK. These rankings were adjusted for tied ranks. The t test values for each variable are 18.054, 18.054, and 17.830, respectively. In order to determine the level of importance for each variable, the mean and percentage score was used.

In terms of percentage scores the variable regarded as the most important is “ability to deal with team integration” (percentage score ninety-five point five) as illustrated in Table 6.9. This is closely followed by “trust” and “collective work plan”, with percentage scores of ninety-five point five and ninety-five point five respectively. The ability to deal with team integration, trust, collective work plan, client participation, project manager leadership, and communication have the seven highest percentage scores. Despite this difference, the results show a significant agreement between the variables by both participants from Kenya and the UK.

Participants in Kenya and the UK agreed that some variables were important as shown in Table 6.9. The frequency distributions for the other twenty-four variables
show little evidence of agreement that they are important measurements of cultural complexity and project performance success. The exception is “communication” “ability to deal with risk”, “smoothness to handover,” and “responsiveness to change,” with participants believing their very important criterion of cultural complexity and project performance success. These results are confirmed by the mean scores of each variable. This was achieved by comparing the two mean scores of each variable from the two samples. The middle criterion of “ability to deal with time” has a mean score of one point two nine, which, indicates a balance opinion of moderate importance and the least possible criterion of “individual work plan” has a mean score of two point eight one, which indicates a conclusive opinion of “low importance”. The results show there is significant difference in the ranking of cultural complexity and criteria for project performance success between participants in Kenya and the UK.
### Table 6.9: Mean and percentage scores perceived by participants and the results of unrelated t test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (N=132)</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Mean Difference</th>
<th>T Test Value</th>
<th>Importance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to deal with team Integration</td>
<td>1.04</td>
<td>0.45831</td>
<td>0.08511</td>
<td>1.53655</td>
<td>18.054</td>
<td>3</td>
</tr>
<tr>
<td>Trust</td>
<td>1.04</td>
<td>0.45831</td>
<td>0.08511</td>
<td>1.53655</td>
<td>18.054</td>
<td>3</td>
</tr>
<tr>
<td>Collective work plan</td>
<td>1.04</td>
<td>0.45831</td>
<td>0.08511</td>
<td>1.53655</td>
<td>18.054</td>
<td>3</td>
</tr>
<tr>
<td>Client participation</td>
<td>1.2</td>
<td>0.45648</td>
<td>0.08627</td>
<td>1.55429</td>
<td>18.017</td>
<td>4</td>
</tr>
<tr>
<td>People selection</td>
<td>1.09</td>
<td>0.04601</td>
<td>0.08695</td>
<td>1.55036</td>
<td>17.830</td>
<td>6</td>
</tr>
<tr>
<td>Project manager leadership</td>
<td>1.11</td>
<td>0.45898</td>
<td>0.08833</td>
<td>1.56815</td>
<td>17.753</td>
<td>6</td>
</tr>
<tr>
<td>Communication</td>
<td>1.21</td>
<td>0.38309</td>
<td>0.0782</td>
<td>1.52042</td>
<td>19.442</td>
<td>12</td>
</tr>
<tr>
<td>Ability to deal with Risk</td>
<td>1.24</td>
<td>0.38473</td>
<td>0.08022</td>
<td>1.53522</td>
<td>19.137</td>
<td>22</td>
</tr>
<tr>
<td>Smoothness to handover</td>
<td>1.27</td>
<td>0.38715</td>
<td>0.08254</td>
<td>1.55</td>
<td>18.779</td>
<td>24</td>
</tr>
<tr>
<td>Responsiveness to change</td>
<td>1.32</td>
<td>0.37279</td>
<td>0.08336</td>
<td>1.5965</td>
<td>19.152</td>
<td>26</td>
</tr>
<tr>
<td>Clearly defined goals</td>
<td>1.34</td>
<td>0.28678</td>
<td>0.06955</td>
<td>1.56941</td>
<td>22.564</td>
<td>32</td>
</tr>
<tr>
<td>Project-selection, prioritisation</td>
<td>1.33</td>
<td>0.27079</td>
<td>0.0751</td>
<td>1.56615</td>
<td>20.853</td>
<td>35</td>
</tr>
<tr>
<td>Co-operation</td>
<td>1.34</td>
<td>0.2818</td>
<td>0.08496</td>
<td>1.59099</td>
<td>18.821</td>
<td>39</td>
</tr>
<tr>
<td>Organisation culture</td>
<td>1.41</td>
<td>0.28641</td>
<td>0.0716</td>
<td>1.58813</td>
<td>22.18</td>
<td>33</td>
</tr>
<tr>
<td>Ability to deal with Time</td>
<td>1.29</td>
<td>0.28834</td>
<td>0.06796</td>
<td>1.55111</td>
<td>22.823</td>
<td>31</td>
</tr>
<tr>
<td>Issue resolution</td>
<td>1.38</td>
<td>0.27867</td>
<td>0.08812</td>
<td>1.629</td>
<td>18.486</td>
<td>41</td>
</tr>
<tr>
<td>Agreeing cost project objectives</td>
<td>1.38</td>
<td>0.1468</td>
<td>0.05993</td>
<td>1.505</td>
<td>25.112</td>
<td>43</td>
</tr>
<tr>
<td>Joint-decision making</td>
<td>1.45</td>
<td>0.2648</td>
<td>0.07644</td>
<td>1.59583</td>
<td>20.877</td>
<td>36</td>
</tr>
<tr>
<td>Ability to deal with Project change</td>
<td>1.44</td>
<td>0.00577</td>
<td>0.00333</td>
<td>1.44333</td>
<td>26.769</td>
<td>45</td>
</tr>
<tr>
<td>Co-ordination of resources</td>
<td>1.45</td>
<td>0.00577</td>
<td>0.00333</td>
<td>1.44667</td>
<td>26.873</td>
<td>48</td>
</tr>
<tr>
<td>Dispute avoidance</td>
<td>1.67</td>
<td>1.13161</td>
<td>0.05886</td>
<td>1.588</td>
<td>26.981</td>
<td>44</td>
</tr>
<tr>
<td>Ability to deal with Quality</td>
<td>2</td>
<td>0.25967</td>
<td>0.9815</td>
<td>1.66429</td>
<td>16.957</td>
<td>42</td>
</tr>
<tr>
<td>Budgeting control</td>
<td>1.71</td>
<td>0.15305</td>
<td>0.07653</td>
<td>1.5775</td>
<td>20.614</td>
<td>44</td>
</tr>
<tr>
<td>Monitoring, controlling a project</td>
<td>1.71</td>
<td>0.26082</td>
<td>0.08694</td>
<td>1.69333</td>
<td>19.477</td>
<td>41</td>
</tr>
<tr>
<td>Adherence to defined procedures</td>
<td>0.95</td>
<td>0.40931</td>
<td>0.08932</td>
<td>1.5481</td>
<td>17.332</td>
<td>24.5</td>
</tr>
<tr>
<td>Team contribution to planning</td>
<td>1.41</td>
<td>0.28641</td>
<td>0.0716</td>
<td>1.58813</td>
<td>22.18</td>
<td>33</td>
</tr>
<tr>
<td>Delegating responsibility</td>
<td>2.03</td>
<td>0.45597</td>
<td>0.08942</td>
<td>1.62115</td>
<td>18.129</td>
<td>14</td>
</tr>
<tr>
<td>Contribution to continuous</td>
<td>2.17</td>
<td>0.32652</td>
<td>0.11544</td>
<td>1.74875</td>
<td>15.148</td>
<td>41</td>
</tr>
<tr>
<td>Project start-up</td>
<td>2.66</td>
<td>0.43976</td>
<td>0.10089</td>
<td>1.68158</td>
<td>16.668</td>
<td>29</td>
</tr>
<tr>
<td>Individual work plan</td>
<td>2.81</td>
<td>0.51118</td>
<td>0.10224</td>
<td>1.636</td>
<td>16.002</td>
<td>13</td>
</tr>
<tr>
<td>Identification of business related issues</td>
<td>2.15</td>
<td>0.32405</td>
<td>0.08661</td>
<td>1.66643</td>
<td>19.241</td>
<td>33</td>
</tr>
</tbody>
</table>
6.10 SUMMARY
The findings presented in this chapter show a multiplicity of participants surveyed in terms of participants place of work, participants job title, project role and project management experience. Findings of the project management experience shows most of the participants had been employed for more than five years in the sector. Although introducing some bias to the survey, this high level of experience ensured that precise and representative data was obtained from participants regarding their organisations and projects managed. The results of the survey show that the participants had been sampled across all possible functional project work areas. Likewise, the results in this chapter showed that participants surveyed carried out a variety of project roles. As established in this chapter, the sample selected ensured a participant had either direct or indirect involvement in heavy construction engineering project management. This is reflected in the levels of project management experience reported.

The findings presented in this chapter allow a number of broad conclusions to be drawn in respect of the research questions posed in Chapter One. These conclusions will be useful when discussing the aim and objectives in the discussion chapter. The outcomes from the statistical tests suggest that a number of factors have a significant influence on project performance and cultural complexity. In terms of the relative importance attached to individual project success criteria, the findings show that a participant involvement in projects is only significant in influencing perspectives of a small number of success criteria. Specifically, project leaders involved with monitoring project team performance highly rated ability to deal with integration as the most important. In terms of achieving team goals, participants suggested for a high performing team, communication procedures need to be provided to the project team in order for the project work to be carried out and for the team to be effective; in addition, participants noted that smoothness of handover is very important.

The statistical t-test results further show that project leaders in Kenya and the UK agreed that successful project performance can be achieved by creating an effective integrated team. This suggests that there are no differences between the two samples. In achieving team performance and goals within a project team, participants highlighted that a greater supervision and commitment from senior managers is essential. This suggests that there are no differences, perhaps in terms of team
performance and goal achievement. In terms of managing obstacles to project integration, participants claimed that the commonly cited obstacle is communication. The survey results indicate that cultural obstacles do vary depending upon the characteristics of the project environment. In addition, the results from the statistical tests further affirm that effective formation of multi-cultural teams depends on good communication procedures in place. This does imply that there is no single way of integrating project success criteria. All the key variables identified have an impact on each other. The next chapter presents discussion and results of the research.
CHAPTER SEVEN: DISCUSSION OF RESULTS

7.1 INTRODUCTION
This thesis has explored the attitudes and experiences of cultural complexity amongst project leaders in Kenya and UK. The study has illustrated the ways in which multi-cultural team working was experienced. The literature search conducted at the outset of the study, established that though there is currently a dearth of research on cultural factors affecting construction projects, project leaders in UK had started to address some of the issues that have to be addressed. In the first section of this chapter, the qualitative findings and the framework results are discussed. In the second section, quantitative findings are outlined. The chapter also provides an overview of the implications for theory and practice. The chapter concludes with limitations of the study and provides a way forward for the industry.

7.2 OBJECTIVE 1: SUCCESS FACTORS FOR PROJECTS IN KENYA AND UK
On the concept of success factors for projects in Kenya and the UK, an important feature was the identification of what were the participants’ perceptions of project critical successful factors. Participants tended to have tangible and concrete ideas on success factors on heavy engineering projects that aligned well with multi-cultural team working. Participants suggested that project management could be characterised by a two-fold approach: that projects are said to comprise universal characteristics that can be managed with a common approach; however, on the other hand, participants did argue that projects are embedded in their social context and that they need to be managed accordingly. For instance, the majority of participants considered that success factors for heavy engineering projects depended on: cross-cultural team selection and composition process; leadership style; and cross cultural management of team development process.

On the issue of cross-cultural team selection and composition process, participants highlighted that multi-cultural project teams should be selected for the ability they offer as well their capability to fit into the team. There was a strongly held belief that the key to integration is making sure that an organisation or an individual has the

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ability to adapt, and work with different people within a project team. Some of the notable differences between participants in Kenya and the UK were the use of references from other clients. Participants in the UK suggested that the use of references from other clients allowed them to break boundaries within project teams. However, it is essential to point out that the danger of getting references from other clients does mean that you are getting somebody else opinion. This suggests that as a project manager or client, you need to implement a continuous evaluation of an individual’s understanding of your project objectives.

A number of participants in Kenya reported mixed experiences due to inducement within the sector. This means that in order for the construction industry in Kenya to implement the above, a natural starting point would be for the government to formulate strategies to monitor project performance within the industry. Participants went on to point out that, they use multi-cultural analysis and Meredith assessment psychological profiling methods in selecting project teams. It was found that psychological profiling practices affected heavy construction engineering projects through the following functions: team selection and composition. Due to fifty percent of project work coming from abroad, participants in the UK suggested that the use of psychological profiling practices has been on the rise. However, participants agreed that team selection does become more effective when the right individuals and the right conditions apply to a project environment.

On the issue of the style of cross-cultural leadership, mixed suggestions emerged. Participants suggested that characteristics of good leadership in heavy engineering projects should include responsive and inspirational leadership. Participants stated that the quality of leadership style is an essential factor if one is to attain team integration on heavy construction engineering projects. Participants highlighted that the client has to be involved at every stage of the project. A number of participants argued that best clients are ones who stay with the project manager all the way through the project life cycle. One of the benefits suggested for this approach was that it allowed both the client and project manager to counter any changes that might occur.
However, another notable difference that emerged was that during the validation exercise participants in Kenya favoured authoritarian, participative, and inspirational, whilst participants in the UK relied on responsive, inspirational, and charismatic leadership style. As suggested earlier on, depending on the environment, it would appear that projects are embedded in their social context and that they need to be managed accordingly by project managers. In order to transform the development process, participants suggested that it is essential for the project manager or client to put in place formalised team building activities and workshops. Findings suggest that during the team building exercise the project manager or client can use the opportunity to highlight the value, roles, processes, purpose, aims, and objectives of the project.

7.3 OBJECTIVE 2: IMPORTANCE OF INTEGRATION TO PROJECT SUCCESS

Most participants agreed that integration has an important effect on project success. For example, participants mentioned that good project integration enhances the quality of final product by harvesting expertise and creativity of all the team members. This study has elicited a rich array of important information on integration. One of the most significant and unique findings was that the participants felt that good integration saves time, because it allows the early detection of problems and an improved in the problem solving process. The participants suggested good project integration constitutes a motivator and helps people work more co-operatively and easily together. As argued by the participants in this study, integration is characterised by mutual trust and openness, where problems and risks are shared and resolved collectively. In this study, it was found that project integration is quite complex. An interesting feature of project integration need that emerged from this study was that it could vary significantly at different times in the project life cycle.

As suggested by participants, integrating project teams requires careful management and coordination. Some of the key benefits of project integration highlighted by participants in this study included better team working to meet project objectives, better cost estimation and control, improved risk analysis and management, quicker project start-up, as contractors already understand the project. The participants acknowledged that organisations have to ensure that there is a cultural balance of
enthusiasm, experience, drive, organisation and control which when brought together, ensures that projects are given the best possible opportunity to succeed. The underlying message, which underpins the project team, should be to try to enjoy the day-to-day involvement in the project. This can be achieved through team building activities to create an environment, which is both focused and efficient in producing the project deliverables.

7.4 OBJECTIVE 3: CURRENT PRACTICE IN KENYA AND UK

Project management remains an unexplored area in relation to attitudes and experiences of senior managers managing construction projects in Kenya. Findings from this study indicate that the construction industry is plagued by severe problems that permeate most aspects of the construction industry. Participants in Kenya argued that they had difficulties in introducing the concept of team integration due to uncertainty within the industry. In addition, the participants highlighted that they had difficulties in implementing modern construction practices. It was found that in Kenya project managers and indeed managers in general, work in a different context and face different problems than those in the UK. This has led this research to question the applicability of project management in Kenya of the whole range of management concepts developed in the industrialised world and even their general usefulness in their own context.

Fundamentally, these arguments were found to fall into two groups: one is that cultural factors play a role, which does not admit the practice of managerial skills; and that the environment makes it impossible for senior construction managers to operate effectively. The first aspect, calls for senior managers working in Kenya to have skills and sensitivity to understand the basic characteristics of the culture in which they are operating, most importantly they should be able to modify their management approach. It must be recognised that the second aspect, which is the environment, requires adaptation of approaches derived from developed countries. Environments are dynamic because they change and change very rapidly. Their unpredictability means that the logical casual relationships on which many industrialised management techniques are founded, cannot be relied on to operate the same way, thus negating the whole basis on which techniques to apply.
A good deal of debate now involves the issue of effective management in a
development environment. On the one hand, one approach suggests that practices
from the UK have proved themselves successful and effective in their own setting and
that attempts should be made to adjust the setting of the construction industry in
Kenya to suit, particularly by cutting down the unpredictability of the environment.
The significant differences between the UK and Kenya, suggests this approach lends
support to the idea that policy issues are the main ones that face the construction
industry in Kenya, and that policy reforms will improve project practices.

Participants from Kenya highlighted that under its current development policy, the
World Bank helps Kenya to take the lead in preparing and implementing development
strategies in the belief that programs that are owned by the country, with widespread
stakeholder support have a greater chance of success. It was established that since a
number of construction projects are been funded by international agencies this has left
the domestic market in Kenya open for international construction firms. Perhaps the
government needs to address the issue of project finance since the amount of capital
that is been distributed within the economy is huge. The findings suggest that if the
above can be addressed then the gap in construction practices between Kenya and the
UK can be minimised. Findings emerging from this study show that more can be
achieved if the Kenyan government can eradicate negative practices within the
construction industry.

7.5 OBJECTIVE 4: FACTORS FOR EFFICIENT INTEGRATION
PROCESSES
Factors for an efficient integration process were explored in Chapter Five; these
included cross-cultural communication, cross-cultural trust in project teams, cross-
cultural collectivism on projects, cross-cultural empathy in project leadership, cross-
cultural change in projects, and cross-cultural uncertainty. There are summarised
below.

7.5.1 Cross-cultural communication
Participants in Kenya and the UK acknowledged that effective communication on
projects is aided by the early establishment of clear lines of responsibility and clear
robust issue resolution process within the integrated team. Participants highlighted
that in order to achieve effective cross-cultural communication, adequate internal and external communication needs to be in place. It was established that effective communication is the key to managing expectations, misconceptions, and misgivings on multi-cultural project teams.

7.5.2 Cross-cultural trust in project teams
Most participants agreed that trust is a fragile, intangible, and generally difficult to quantify but it is essential to the success of integration. It emerged trust can be cultivated where there are good interpersonal relationships and mutual respect between project leaders and team members. From the above, it does show that trust depends on the interaction of individuals and interpersonal relationships. In this study, it has been shown that, in order for a project team to be fully integrated, all team members need to trust and understand each other. One notable difference that emerged was that in Kenya participants had difficulty in achieving trust due to tribalism, whilst in the UK, it was suggested at times, that it is difficult to achieve trust because of the adversarial nature of the construction industry.

7.5.3 Cross cultural collectivism on projects
It is evident from the findings that all participants favoured collectivism rather than individualism when it comes to carrying out project tasks. All participants highlighted the counter productive effects of individualism within their projects. Participants were able to point out that it is largely caused by contractors who want to do things their way rather than conform to an imposed standard agreed by all. This finding suggests that in a collective environment, the interest of the project group will succeed over the interest of an individual group.

7.5.4 Cross cultural empathy in project leadership
In cultural empathy, participants suggested that effective project leaders should be able to understand the type of leadership style preferred by the project team so that the project leader’s authority is respected. Most participants agreed that it is the responsibility of the project manager to institute a supportive and positive project culture. Participants demonstrated that effective leaders should be fair and consistent when dealing with project team members and this can be achieved by not showing any favour or partnership in the way they relate. Participants showed that cultural
empathy can be used to give project team members confidence in carrying their daily project tasks. As argued in this category, if project leaders are to manage heavy construction engineering projects smoothly they will be required to be aware of their own personality and characteristics. It will be vital for project leaders to learn how to control their characteristics and most importantly use them selectively. There are two basic methods, which could be applied, push and pull. The push method entails forming an opinion and then arguing for it whilst the pull technique depends on seeking the opinion of others. Project leaders applying the pull technique need to form an opinion first and then utilise skilful questioning to encourage project teams to form the same view. As observed during a project briefing session in one of the organisations, the pull technique can take longer to achieve a decision. Overall, it emerged that a skilful project leader needs to utilise both methods, depending on the team or project situation.

7.5.5 Cross-cultural change management in project teams

Cross-cultural changes on projects are one of the most identifiable causes of cultural complexity on project teams. Cross-cultural change can ruin a project that started with high expectations among all the stakeholders. Participants from Kenya and the UK were particularly critical about dealing with disruptive and demotivated project team members. Participants asserted that they faced the biggest challenge in trying to change the way people do things in the project. However, it is essential to note projects do inherently change over time. Despite the above, participants acknowledged that it is the duty of project leaders to keep project teams well informed so as create a favourable project working environment. For instance, participants suggested that constructive feedback must be sought at all project stages from team members and both considered and acted upon if one is to gain maximum benefit from integrated team working. In the UK, it was found that there is a drive within the construction industry to change its value-based culture. In the case of Kenya, it emerged that this will take time and there will be considerable objection from individuals and organisations. In this study, it has been shown that nothing ever remains static in project work, and a project team works in environments filled with uncertainty and complexity where nothing exists in a permanent state. In order to manage cross-cultural change, project leaders need to be flexible in everything that they undertake. Overall, it has been illustrated that the project leader and client need
to review full everything that is before them before granting their approval for actioning.

7.5.6 Cross-cultural uncertainty on projects
In their view about uncertainty, participants agreed that uncertainty was one of the main principal casual factors underlying project team inter-cultural integration. Participants suggested that an uncertain situation could be dealt with by collecting more data about the project to minimise the culture and information gap that might emerge. It was found that uncertainty could have various impacts on a project. While evidence from this research suggests that uncertainty causes challenges in projects amongst other internal and external factors, some participants did argue that some projects could benefit from uncertainty. Some participants in the UK and Kenya argued that when you come across low uncertainty project teams they demand less project structure but with high uncertainty project teams they expect consistency and clear articulation to be in place. There is, therefore, a need for further work in this area to establish the influence of project leaders in managing low and high uncertainty project teams.

7.6 OBJECTIVE 5: FRAMEWORK DEVELOPMENT
This study proposed to develop a performance framework for cross multi-cultural project team leaders in Kenya and the UK. As argued in this study, the framework categories are of fundamental importance for achieving and maintaining multi-cultural project team working. Their vital significance lies where there is an apparent multi-cultural project team working that is not being realised. As suggested by the participants, in a global context the management and development of project teams is inevitably leading the construction industry to consider diverse but related challenges. Participants stated that the proposed framework should to address leadership style, team selection, and composition, cross-cultural management of the team development process, cross-cultural communication, cross-cultural collectivism, cross-cultural trust, cross-cultural management, cross-cultural uncertainty, and multi-cultural team performance. From the validation results, it emerged that the proposed framework can be effective in practice. Reflecting on their personal experience, the participants suggested that the framework has significance for construction managers who work on multi-cultural teams and who are committed to maximising team performance and
productivity. For instance, a majority of participants agreed that the framework captured a generic applicability and a foundation to build understanding and an awareness of cultural differences and how these can be managed. While the framework outlined can be valuable for construction project teams, the researcher is aware that the proposed framework would not instantaneously transform teams into high performing ones.

### 7.7 QUESTIONNAIRE FINDINGS

This section presents a summary of the six categories that have emerged from the quantitative findings; these included monitoring project team performances, achieving team goals, integrated supply teams, project team performances, aligning goals within the team, maintaining team affiliations, managing obstacles to integration and effective formation of multi-cultural teams. These are recapitulated below.

#### 7.7.1 Monitoring project team performance

The survey results suggest that in some organisations the importance of monitoring project performance varied between different project phases. From the results, sixty percent of participants regarded “adherence of defined procedures” as the most important. This was closely followed by “coordination of resources”, with a percentage score of fifty-nine point three. This variation in level of importance confirmed that monitoring team performance should be flexible and good a mechanism should be put in place continuously to monitor the process. From the findings, it emerged that the two groups differed in a numbers of ways, for example some participants in the UK suggested that agreeing “cost project objectives” as the most important whilst a high proportion of participants in Kenya felt “coordination of resources” as the most important factor. This is not surprising, since the survey results found some evidence that given the fact that most construction projects have different specification, scope, and schedule. However, it is essential to highlight that, for high performing project teams, greater clarity needs to be placed on both variables as argued in this study.

#### 7.7.2 Achieving team goals

In terms of achieving team goals, the survey results show that eighty-four percent of the participants were of the same opinion that for high performing project teams
clearly defined communication procedures need to be in place. Participants identified “smoothness of handover” as very important as well. In this category, the survey results show that there was no significant difference between participants in Kenya and the UK. The survey results provide more confirmatory evidence that it is the responsibility of project leaders to make sure that the alignment of objectives and members of a project team will be pulling together. From the survey results, there are indications that the main aim of developing a set of reciprocated project goals is to utilise the power of the whole team. Overall, the participants recognised that the use of a resolution process is very important and that it needs to be understood by all team members.

7.7.3 Creating an integrated supply team
In this category, the survey results indicate that in creating an integrated supply team participants regarded people selection as very important. From the results, there is confirmation that by creating a common understanding between project team members it creates a favourable working environment. Just as Thomas and Thomas (2005) suggested that a structured team selection process should be based on a clear value criteria, it can be argued that the findings from this category reflect the conclusions of the above authors. The survey results show that, when establishing an integrated multi-cultural project team, the key factors to consider are the compatibility of individuals and the project task.

7.7.4 Aligning goals within the team
The survey results illustrate that the process of aligning project teams must be carried out thoroughly because project teams come from different organisations and cultures. In this category, the survey results suggest that the participants indicated that a collective work plan and clearly defined goals as very important. A key finding that emerged from this category was that the result that, project teams need to have a cohesive work ethic and clearly defined project goals aligned within the team and organisation. It was also found that setting collective goals within a project team is not enough for project performance excellence. The survey results suggest that participants in this study favoured setting collective priorities and project work plans. As earlier discussed, this can be achieved through regular meetings. The survey results in this category, confirm that when clients or project managers are setting
project teams, they should ensure that there is an understanding within project teams. This understanding is that not only does each individual project member of the team have a responsibility to complete their project tasks but they also have an obligation to support each other where appropriate in the achievement of the project's objectives.

7.7.5 Maintaining team affiliations
In this dimension, trust was regarded as the most important followed by project manager participation and client participation. It emerged that one of the major challenges of integrated project teams is the development of trust. The survey results suggest that in order to achieve trust, the client and project manager needs to find a common team culture from the outset to certify that all team members are aware of their roles and responsibility in achieving their project goals. A key issue facing clients and project managers within the construction industry is their ability to enhance cohesive team working on projects. In order to achieve this, it is essential for senior managers to build trust among themselves especially in the early stages of the project. In addition, it has been shown that trust is crucial to affiliation, collectivism, leadership, participation, and organisational culture.

7.7.6 Managing obstacles to integration
From the survey results, there are indications that potential obstacles to integration include communication, people selection and change management. The most commonly quoted obstacle to integration of multi-cultural project teams was communication. Again, it emerged that in order for organisations to manage any obstacle that might emerge, it is essential for the client and project manager to highlight a clear robust process at an early phase of the project so as identify and resolve obstacles clearly and promptly before they inflate into a major issue.

7.7.7 Effective formation of a multi cultural team
The survey results suggest that effective formation of multi-cultural teams depends on good communication systems, project manager, and client leaderships. The variable regarded as the most important was communication. The survey results suggest that interaction among team members can encourage the effective formation of an integrated team. From the findings, the survey results indicate that if integrated project teams fail to communicate effectively, then they will be unable to achieve
their collective objectives and realise their talents; this suggest that as a team there will be less efficient. In general, project leaders need to take ownership in certifying that both internal and inter-group communications are in place. From the survey results, there was recognition that communication and leadership does influence team formation in Kenya and the UK.

7.8 IMPLICATIONS FOR THEORY
This study has attempted to clarify the relationship between project leaders, project teams and performance and the influence of cultural factors upon project success. The findings of the study highlighted the importance of further theorising about, and empirical investigation of, cross-cultural team performance in construction in the multi-cultural context. With an ongoing increase of cultural complexity on projects, project leaders in multinational construction organisations will need to be more aware of cultural factors in order to function and achieve high levels of team performance. This research contributes to the body of knowledge by identifying the variables that influence efficient cross-cultural integration and team performance on construction projects. The factors as discussed in the qualitative findings in Chapter Five are cross-cultural leadership, cross-cultural communication, cross-cultural trust, cross-cultural collectivism, cross-cultural empathy, cross-cultural change, and cross-cultural change. The nine categories that emerged were sorted and grouped within the nine main sub-categories. During the verification and validation exercise, it was established that the nine sub-categories are inter-connected. As a result, these sub-categories were used within the thesis to propose a framework of cross multi-cultural team performance for project leaders. This research further contributes to the theory for identifying key strategies that can be utilised to address the gap in construction practices between Kenya and developed countries. Understanding how to enhance the performance of multi-cultural project teams is a central goal of contemporary construction research. The construction research community will need to advance beyond the mere appeal of cultural factors on projects toward a more complete and detail elucidation of multi-cultural project team processes.
7.9 IMPLICATIONS FOR PRACTICE

Majority of construction organisations are now operating throughout the world. As illustrated in this research, construction organisations are now moving resources to almost any worldwide location and have the capacity to work on a global scale. Even organisations without any state of global readiness still maintain a presence overseas by supplying specialist services such as costing and planning in alliance projects with other contractors. The industry has widened its recruitment both local and abroad. One of the key issues that this research sought to address was to explore how cultural complexity can be managed on projects. As Dainty et al (2007) highlighted the industry has been challenged to address its poor performance on people management and cultural issues. This research provides the construction industry with a sense of how widespread cultural issues affect construction projects. The framework proposed is based on the existing practices. This study illustrated the views of construction professionals to the extent to which cultural factors can influence the outcome of a project. This gives industry the opportunity to look at their current practices and structure them to enhance team performance on projects. Effective multi-cultural team integration reduces cost of projects and the risks of team failures, and at the same time improves multi-cultural team performance. This research, therefore, provides good groundwork for understanding the influential cultural factors that affect projects in developed and developing countries.

7.9 LIMITATIONS OF THE RESEARCH

This section provides an appraisal on the research contained in this study. The researcher believes the limitations examined do not indicate a fundamental weakness with the research approach adopted and they do not jeopardise the aim and objectives of the study. This research had the following limitations:

- the focus of the research was on project leaders' views and did not include project workers, however, the influence of project workers on the achievement of integration on multi-cultural team working was considered. A second issue was that, the qualitative findings were obtained from participants carrying out a variety of project roles relating to different types of projects. It was found that some participants had a great deal of project management experience and current involvement in the
management of heavy engineering projects in terms of investigating factors for efficient integration process. For example, in some of the variables discussed in the above objective it was established that participants in the UK proposed better solutions which could be applied in both developed and developing countries. However, this provides the basis for a future research recommendation within the Kenya construction industry. In order to achieve equivalence and comparability across the two countries, the concepts and research technique applied had similar meaning in both countries.

7.10 THE WAY FORWARD

This study has demonstrated the importance of cross-cultural factors in influencing multi-cultural project team working on projects. Current strategies that are applied on construction projects appear to over-emphasise realisation of maximum value for clients. As established in this research, the construction industry is one of the largest, complex and most project team concentrated industries. As argued, current strategies need to address leadership style, people, and cultural issues. From the literature reviewed, it emerged that the way in which project teams are managed and developed is restricting the industry's ability to improve its performance. Indeed, as it surfaced in this study the discourse about cultural issues within the industry appears to disengage from the broader defining construction management literature. In addressing the issues relating to culture, it is vital for the construction research community to establish a basis to build understanding and awareness of cultural differences. In addition, how they may be managed. Evidence presented in this research, has demonstrated that organisations have found that bringing project teams together can be problematic due to cultural factors.

From the findings, it has been highlighted that there is a need for understanding the relationship between senior managers, project teams, and the cultural context of a project. For example, it has been suggested that project leaders will gain control of project teams through better understanding of both behavioural and cross-cultural issues. It was recognised that effective multi-cultural team working depends on the formation of good leadership styles, team development processes, cultural communication, cultural collectivism, cultural trust, cultural management, cultural
uncertainty, team selection, and composition processes. The crucial point is that all the above variables mentioned must be considered from the outset if the project’s chances of success are to be optimised. As recommended, the application of the proposed framework will assist managers in necessitating a common, generic, and logical structure in project decision making. There is considerable evidence presented in this study to illustrate that the framework proposed demarcates key factors influencing multi-cultural project teams.

It could be argued that UK project management concepts may be in every respect unsuitable and irrelevant to the Kenyan construction industry. During this research, it emerged that cultures vary from country to country. As a result values at work and social settings between the two countries vary. It has been shown that by understanding cross-cultural management concepts, senior construction managers can determine appropriate modifications to current project management concepts and apply them successfully in different countries and cultures. In order to manage multi-cultural project teams successfully, it will be essential for senior managers to recognise the cultural context of a country. A natural starting point would be for senior managers to be conscious of a project’s political context, general economic environment, location and its relationship with the local community. For example, it would be vital for the government in Kenya to implement policies that would promote efficiency throughout the construction industry to sustain growth within the industry and to ensure that joint ventures between international and local firms are beneficial to the local communities as well. This may seem as a prerequisite to remedial actions being taken by the industry to improve the way cultural complexity can be addressed but good policy making will require clarity, transparency and participation from the government.

The intricate connection of cultural issues with construction projects must be recognised. As verified in this research, cultural issues on projects are amenable to alterations, modifications, and changes over time. However, for the participants involved in this study the cultural issues they faced on projects were real. These were found to be important areas for understanding cultural complexity and in addressing the aim and objectives of the study. Since the issues are both behavioural and cultural, the most efficacious strategies and solutions must be both behavioural and
cultural. The study may be seen as a fundamental knowledge prerequisite that is required to inform the development of effective and meaningful cross-cultural strategies by a strategic forum for construction and policy makers in Kenya. In the meantime, cross-cultural strategies must be planned and delivered upon a considerably clearer understanding of a project leader’s experiences and attitudes.

7.11 SUMMARY
This chapter discussed the content of previous chapters and delineated the most vital results and findings of the research. It has examined the results of the research within the context of the literature, theory, aim, and objectives. The chapter has also summarised the implications for theory, practice and outlined the limitations of the study. Despite the limitations, a way forward for the industry is proposed. A framework is proposed in the following chapter, which lays out the relationships between the key variables identified in Chapters Five and Six. The framework proposed provides a structured approach in managing cultural complexity on projects.
CHAPTER EIGHT: FRAMEWORK DEVELOPMENT AND VERIFICATION

8.1 INTRODUCTION
This chapter focuses on the verification and validation of the framework in order to assess its the practicality, suitability, and effectiveness. In order to address the above, this chapter will present the proposed framework, process, objectives, and results. In addition, participants’ accounts of managing project teams in a multi-cultural environment will be discussed. The verification and validation exercise was important since it is known that experiences and attitudes are constructed by choices available to individuals.

8.2 THE NEED FOR THE PROPOSED FRAMEWORK
According, to Tomlison (1990), a framework can be defined as a

"Means of describing some part of the organisational situation which is of concern to the participants of study".

Fellows and Liu (1997), suggests that a framework should capture the reality being modelled as closely as practical and include the essential features of that reality whilst being reasonably cheap to construct and easy to use. It has been suggested by Bell 1994; Coxhead and Davis 1992 that the use of a framework in a complex situation assists managers in minimising risk, imposing consistency, and provides a common generic and logical structure in decision making. The framework proposed in this research was used to address the key research questions and the aim posed in this study.

The framework delineates the key variables that influence the integration of multi-cultural teams and highlights how cross-cultural issues can be managed. The framework is developed from the key issue of cross-cultural team integration identified from the qualitative and quantitative analysis. As discussed in the results chapters, the emergence of a good multi-cultural team is likely to depend on the establishment of a number of identifiable project level practices. These were found to
fall within the following categories: leadership style, team selection and composition process, team development process, cultural communication, cultural collectivism, cultural trust, cultural management and cultural uncertainty.

Table 8.2: Cross multi-cultural project team performance variables

<table>
<thead>
<tr>
<th>Leadership style</th>
<th>Team selection and composition process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Responsive leadership</td>
<td>• Picking people on value for money</td>
</tr>
<tr>
<td>• Inspirational leadership</td>
<td>• Be based on ability individuals offer</td>
</tr>
<tr>
<td>• Authoritarian leadership</td>
<td>• Capability to fit into the team</td>
</tr>
<tr>
<td>• Charismatic leadership</td>
<td>• Ability to work in a team</td>
</tr>
<tr>
<td>• Delegative leadership</td>
<td>• Respect between team members</td>
</tr>
<tr>
<td>• Participative leadership</td>
<td>• Measure individuals beliefs</td>
</tr>
<tr>
<td>• Organisational leadership</td>
<td>• Be based on technical ability</td>
</tr>
<tr>
<td></td>
<td>• Use of Meredith assessment and Multi-cultural analysis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cross cultural management of team development process</th>
<th>Cross cultural communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Teambuilding</td>
<td>• Establish clear lines of responsibility</td>
</tr>
<tr>
<td>• Know individuals drivers</td>
<td>• Cultural empathy</td>
</tr>
<tr>
<td>• Recognition and reward</td>
<td>• Establish team effectiveness (collectiveness)</td>
</tr>
<tr>
<td>• Develop team loyalty (shared aims and objectives)</td>
<td>• Value management</td>
</tr>
<tr>
<td></td>
<td>• Establish trust</td>
</tr>
<tr>
<td></td>
<td>• Implement honesty</td>
</tr>
<tr>
<td></td>
<td>• Encourage respect for others</td>
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<table>
<thead>
<tr>
<th>Cross cultural collectivism</th>
<th>Cross cultural trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good team organisation</td>
<td>• Good interpersonal relationships</td>
</tr>
<tr>
<td>• Participatory leadership (PM/Client)</td>
<td>• Mutual respect between project leaders and team members</td>
</tr>
<tr>
<td>• Commitment from all team members</td>
<td>• Team building activities</td>
</tr>
<tr>
<td>• Open decision making</td>
<td></td>
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<tr>
<td>• Use of Multi-cultural analysis</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Cross cultural management</th>
<th>Cross cultural uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Keep project teams informed</td>
<td>• Articulation of project goals and objectives</td>
</tr>
<tr>
<td>• Inter-disciplinary procedure should be in place</td>
<td>• Clear project roles</td>
</tr>
<tr>
<td>• Verify project goals</td>
<td>• Managers need to be cross cultural communicators</td>
</tr>
<tr>
<td>• Encourage co-operative culture</td>
<td>• Effective interpersonal skills</td>
</tr>
<tr>
<td>• Promote constructive feedback process</td>
<td>• Adopt project procedures which would apply to everyone</td>
</tr>
<tr>
<td>• Open communication</td>
<td>• Gather more data to reduce culture and information gap</td>
</tr>
<tr>
<td>• Build cohesion and stability in team working</td>
<td>• Multi-cultural training</td>
</tr>
</tbody>
</table>

Conclusions from the two results chapters indicated that multi-cultural team working requires greater fluidity and flexibility in responding to cultural issues on projects. It was also established that there is an increased need to get project teams from different nationalities to work together effectively. Participants further suggested that integrating project teams from different nationalities can be problematic and
performance is not always at the level required or expected. In addressing the above, there was a need to propose a framework that would:

1. highlight cross-cultural requirements for high performing multi-cultural project teams;

2. establish how project leaders can influence multi-cultural project teams to perform better; and

3. how project leaders can be cross-culturally competent.

Figure 8.2 summarises the main components of the framework that emerged from this study.

The findings show that a framework for multi-cultural project performance in this study needs to draw together:

- project purpose, objectives, values, roles, processes;
• cultural understanding through leadership; and
• critical areas for cross-cultural action.

The three points mentioned have already been discussed in the two results chapters. However, it is essential not to lose sight of what has been learned in the broader sense about the factors associated with cultural complexity on projects and effective team performance. The analysis carried out in the previous two chapters, allowed the researcher to take a step further and propose a more detailed framework (see Figure: 8.5.9). The results showed that the culture of a project leader plays a major role in how members of a multi-cultural team perceive the multi-cultural project team performance framework proposed in this research.

8.3 VERIFICATION AND VALIDATION OBJECTIVES

Verification and validation was carried out to achieve the following objectives, which follow on from the key research objectives.

1. To present all information compiled throughout both the preliminary and main study stages.

2. To ensure that the proposed framework fulfils the requirements of heavy construction engineering organisations for which the study was originally conducted.

3. To validate the applicability of the proposed framework in real life situations.

4. To achieve an agreement on framework requirements to ensure generic applicability.

5. To verify the aims of the framework.

6. To confirm if the framework can only be applied on industrial organisations.
7. To verify the projects targeted (oil, pharmaceutical plants, manufacturing plants, power plant, dams).

8.4 VERIFICATION AND VALIDATION PROCESS
The verification was carried in phases described below.

Phase 1
An email was sent to participants who were involved with this study, which was then followed by a phone call to explain the purpose of the exercise. The questionnaire was sent out in advance to each organisation for collection during the session.

Phase 2
All cross-cultural findings compiled throughout both the preliminary and the main study stages were presented to the project leaders in Kenya and the UK. A verification questionnaire assessing the effective factors for efficient cross-cultural integration was presented to the main participants of study (see Appendix F). The aim of the questionnaire was to measure their level of agreement on the variables that were identified in the analysis. Verification employed the use of the Likert unidimensional scale because it ensured all variables identified from the findings were measured. Participants were asked to indicate the level of agreement on each variable using a scale from 1-5 where 1 indicated ‘strongly disagree’, 2 ‘disagree’, 3 ‘fairly agree’, 4 ‘agree’ and 5 ‘strongly agree’. The employment of the questionnaire ensured participants could express their opinions of the proposed framework freely and frankly.

Phase 3: Use of workshops
The session involved a forty-minute presentation by the researcher of the proposed framework; this was followed by a three-hour discussion, review, and critique of the framework. Each session was attended by the participants from the eight organisations selected in Kenya and the UK.

Respondents
The verification of the framework was accomplished through workshops with participants from the eight organisations selected in Kenya and the UK. The
participants also participated in interviews carried out in this study. They used questionnaires, which addressed the following issues.

1. Leadership style.
2. Team selection and composition process.
3. Cross-cultural management of team development process.
5. Cross-cultural collectivism.
7. Cross-cultural management.

Details of respondents are provided in Table 4.8.4.

**Phase 4: Use of focus group**

The session involved a thirty-minute presentation by the researcher of the proposed framework to a different group of managers not involved with the study. Ten project directors in Kenya and UK attended each session. The validation questionnaire assessing the proposed multi-cultural framework was presented to the project directors. The validation questionnaire employed the use of the Likert uni-dimensional scale and participants were asked to indicate the level of agreement on each factor using a scale from 1-5 (see Appendix G). An attitude continuum for each variable in the validation was constructed as described below.

**Strongly agree** – participants had no doubt on the positively of question being asked.

**Agree** – participants generally agreed with the subject or principle underlying the subject being questioned.

**Uncertain** – participants was not sure but cannot confirm or deny the importance of problem under discussion or being questioned.

**Disagree** – participants did not agree with the problem or the principle underlining the problem being discussed or questioned.
Strongly disagree - participants was completely aware that the problem under consideration was not possible from his/her perception.

Respondents
The validation of the framework was conducted through focus group with a different set of managers not involved with the study. They used questionnaires, which addressed the following issues.

1. Leadership style.
2. Team selection process and composition process.
3. Cross cultural management of team development.
4. Cross cultural communication.
5. Cross cultural collectivism.
6. Cross cultural trust.
8. Complexity issues

Details of respondents are provided in Table 8.4 below.

Table 8.4 Details of validation questionnaire respondents

<table>
<thead>
<tr>
<th>Participants</th>
<th>Profile of company projects</th>
<th>Participants</th>
<th>Profile of company projects</th>
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<tbody>
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<td>K, L, M</td>
<td>Energy</td>
</tr>
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<td>D, E, F</td>
<td>Petrochemical</td>
<td>N, O, P</td>
<td>Petrochemical</td>
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<tr>
<td>J</td>
<td>Pharmaceutical</td>
<td>T</td>
<td>Pharmaceutical</td>
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8.5 VERIFICATION RESULTS

The results of the two focus groups suggested that there must be an evident commitment from the client and project manager. This applies at board level, and throughout the firm. The participants suggested that without guidance from the top, there is a danger of the project team developing their own working culture within the project environment. There was recognition by the participants that the principal objective of building cultural understanding through leadership is to manage effectively cultural differences and cross-cultural differences that might emerge on a project. As argued in this study cultural differences among project teams can cause conflict, misunderstanding, and poor project performance. It was, therefore, not surprising that the key categories that emerged from the verification process as significant were sorted and grouped within the nine main sub-categories of 'leadership style', 'team selection and composition', 'cross cultural management of team development process', 'cross cultural communication', 'cross cultural collectivism', 'cross cultural trust', 'cross cultural management', 'cross cultural uncertainty' and 'multi-cultural team performance'. These nine sub-categories were found to be interconnected are thus were reported together. The following two tables are a representation of the key variables that were perceived to symbolise cross-cultural integration in Kenya and the UK.
### Table 8.5a: Verification results on effective factors for efficient cross-cultural integration (Kenya)

**FACTORS FOR EFFICIENT CROSS CULTURAL INTEGRATION PROCESS**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Respondents score</th>
<th>Average</th>
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<td>Delegative leadership</td>
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<td><strong>TEAM SELECTION AND COMPOSITION PROCESS</strong></td>
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<tr>
<td>2</td>
<td>Be based on ability individuals offer</td>
<td>4</td>
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<tr>
<td>3</td>
<td>Capability to fit into the team</td>
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<tr>
<td>4</td>
<td>Ability to work in a team</td>
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<tr>
<td>5</td>
<td>Respect between team members</td>
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</tr>
<tr>
<td>6</td>
<td>Measure of individuals beliefs</td>
<td>2</td>
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<tr>
<td>7</td>
<td>Be based on technical ability</td>
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<td>8</td>
<td>How: Use of Meredith assessment</td>
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<tr>
<td>9</td>
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# Table 8.5a: Verification results on effective factors for efficient cross-cultural integration (Kenya)

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<td>2. Know individuals drivers</td>
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<td>3. Recognition and reward</td>
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<td>4. Develop team loyalty (shared aims and objectives)</td>
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<td>3. Establish team effectiveness (collectiveness)</td>
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<td>4. Value management</td>
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<td>7. Encourage respect for others</td>
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<td>2. Participatory leadership (PM:Client)</td>
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<td>3. Commitment from all team members</td>
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<tr>
<td>4. Open decision making</td>
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<td>5. How: Multi-cultural analysis</td>
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<td>2. Mutual respect between managers and workers</td>
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</tr>
<tr>
<td>3. How: Teambuilding activities</td>
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Table 8.5a: Verification results on effective factors for efficient cross-cultural integration (Kenya)

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<td>4 Encourage co-operative culture</td>
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<td>5 Promote constructive feedback process</td>
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<td>6 Open communication</td>
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<tr>
<td>4 Effective interpersonal skills</td>
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<td>6 How: Gather more data to culture and information gap</td>
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<td>3 Development of effective people selection</td>
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<td>5 Collective work plan</td>
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### Table 8.5b: Verification results on effective factors for efficient cross-cultural integration (UK)

#### FACTORS FOR EFFICIENT CROSS CULTURAL INTEGRATION PROCESS

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<th>Questions</th>
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<td>Be based on technical ability</td>
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<td>8</td>
<td>How: Use of Meredith assessment</td>
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### CROSS CULTURAL MANAGEMENT OF TEAM DEVELOPMENT PROCESS

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### CROSS CULTURAL COMMUNICATION

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### CROSS CULTURAL COLLECTIVISM

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</table>
Table 8.5b: Verification results on effective factors for efficient cross-cultural integration (UK)

<table>
<thead>
<tr>
<th>CROSS CULTURAL MANAGEMENT</th>
<th>4.9</th>
<th>99</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Keep project teams informed</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2  Inter-disciplinary procedure should be in place</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3  Verification of project goals</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4  Encourage co-operative culture</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5  Promote constructive feedback process</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>6  Open communication</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>7  How: Build cohesion and stability in team working</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CROSS CULTURAL UNCERTAINTY</th>
<th>4.5</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Articulation of project goals and objectives</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2  Clear project roles</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3  Managers need to be cross cultural communicators</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4  Effective interpersonal skills</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5  Adopt project procedures which would apply to everyone</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6  How: Gather more data to culture and information gap</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7  How: Multi-cultural training</td>
<td>5</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>MULTI CULTURAL TEAM PERFORMANCE</th>
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<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Adherence of defined procedures</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2  Clearly communication procedures</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3  Development of effective people selection</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4  Ability to deal with cross cultural integration</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5  Collective work plan</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
8.5.1 Leadership style

From the verification results, the UK participants' preferences for and reliance upon responsive, inspirational, participative, and charismatic leadership styles in projects was evident, whilst a large majority of participants in Kenya favoured participative, authoritarian, and inspirational leadership styles. Interestingly, during the discussion with participants B, G, L, M, C, and A, C, E, I, J, R in Kenya and the UK they acknowledged that it is not the technical project skills but the emotional intelligence leadership competencies that are most effective in building dynamic project teams. It would seem that participants in Kenya favoured the three styles because it allowed them to gain more commitment and motivation from the project workers. Participants in Kenya noted that an authoritarian leadership style could only be used on projects if you have all the information to solve a project problem, and your project workers are well motivated to carry out any project task. In the UK, authoritarian leadership style did not receive the same attention; instead, participants in the UK argued that if you apply responsive and inspirational styles it allows project workers to make decisions on projects. As discussed in this study the construction industry has been found to have a long-standing reputation for being adversarial, demonstrated by poor relationships between project teams, which in turn lead to numerous problems including poor performance. This could explain why project leaders highly rated the two types of leadership style. During the discussions participants highlighted that the two styles should not be used when things go wrong, rather the two styles should be used when you have full trust and confidence in the project team. It was also suggested that factors that might influence the type of leadership style to be used could depend upon relationships between project teams, type of project task, duration of the project, how well the project workers are trained and how well the project manager knows the task.

8.5.2 Team selection and composition process

During the two meetings, there was a consensus that in order for team selection and composition to be effective individuals should be selected on value for money and their ability to work in a team. Reflecting on their experiences, both set of participants identified 'respect among team members' as essential to team selection. The importance of 'picking individuals on value for money', 'ability to work in a team' and 'respect among team members' gained the highest score in the verification
exercise. In the UK participants suggested, that the use of profiling methods (multicultural analysis) could be used to find out if an individual is going to fit into a project team. While there is, some increase of personal profiling in the UK, in Kenya it was found that team selection was mainly based on ability and not personal profiling. As a result, participants from Kenya noted that there have had to face issues to do with compatibility of personalities. Reflecting on their experiences, participants in Kenya acknowledged that the use of personal profiling is vital if construction firms in Kenya are to address the issue of cultural complexity. Interestingly, even though both groups failed to rate technical ability highly in their questionnaires they noted that it is essential for the project manager and senior managers to have a sound a technical capability. What is surprising is that in this particular category there was only a difference of three percent on the average score from both groups. Therefore, this suggests that the Kenyan approach does correspond favourably with the UK manner of team selection. In order for senior managers in Kenya to improve on team selection and the composition process, it is vital for the construction industry to alter how senior construction managers are trained. This will mainly depend on the structure of politics in Kenya. As pointed out in the literature review, the government is the major client and with upcoming elections in December 2007, the future of the construction industry will depend on the presidential candidate elected.

8.5.3 Cross-cultural management of team development process

A high majority of the participants affirmed that holding an initial professionally facilitated teambuilding activity gives the project team the start that enhances the likelihood of developing a good multi-cultural team. During the discussions, participants (S, K, F, D, and E) in the UK suggested that teambuilding events could comprise an opportunity to refine, so to speak, the composition of the group by testing their capacity to work together. In Kenya, it was found that management of team development processes comprised of holding an initial teambuilding workshop to allow the team to develop another ingredient of team loyalty, that is, clear explicit project aims and objectives. During the workshop, participants further highlighted that it also facilitates, the planning, deployment, and review of good communication practices at all levels. From Tables 8.5a and 8.5b, it can be observed that there was no significant difference between the two groups. Both groups highly rated teambuilding and recognition of team reward variables. The results suggest that there is a link.
Chapter Eight

between the two when it comes to team development. Participants from both groups noted that knowing the project team is always an asset in getting the project tasks completed on time. Interestingly, results reported here show that participants in Kenya and the UK differed slightly when it came to developing team loyalty but there was an equal percentage on recognition and reward. Therefore, for this particular category project managers grouped the variables as follow: teambuilding, develop team loyalty, recognition and reward and then establish individual drivers.

8.5.4 Cultural communication

From the two verification Tables 8.5a and 8.5b, it can be observed that the two groups identified seven key dimensions of cultural differences on communication behaviours. The two groups differed in a number ways, for instance participants in Kenya highly rated cultural empathy compared to the UK participants. Whilst reflecting on their personal experiences, it was observed that the national culture from the two countries differed when it came to emotional dependence on the team. Participants in Kenya were more conforming, orderly and traditional when it came to tackling personal issues with project workers whilst a few of the participants in the UK believed that project leaders had to be particularistic when dealing with personal issues. In this category, five variables received the highest score in the verification questionnaire these were: establishment of clear goals, team effectiveness, and trust, implementation of trust, and the encouragement of respect between team members. There was an equal recognition of the importance of the five variables when it comes to effective team performance on projects. The only slight difference highlighted was the use of value management techniques. The consensus in the UK was that a project manager could do well without value management techniques as long as the five variables mentioned above are in place. In Kenya participants felt that since most of the projects are financed by the government and international aid agencies, it was essential to have value management techniques since expatriates who work on projects in Kenya have different social values about personal achievements as they do on decision making and communication processes. Participants in the UK felt that language is a major vehicle for communication but can be a big issue since words have different meanings and values to people. In order to manage this particular category, a high majority of participants in the UK suggested that a project manager should have the ability to understand and clearly communicate team goals, roles, and
norms to other members of a multi-cultural team. As shown in the qualitative findings, it is vital for a project manager to be cross-culturally and communicatively competent. As illustrated by the two groups in this category, the culture of a project manager plays a major role in how the project team will perceive cross-cultural communication on projects.

8.5.5 Cross-cultural collectivism
In addressing cross-cultural collectivism, almost all the twenty participants agreed that good team organisation, open decision making and commitment is essential in achieving cultural collectivism. It was not surprising to see that when both participants reflected on their personal experiences they associated the three variables with effective multi-cultural team performance. The factors emerging from this category indicate that the framework needs to address, leadership style, team purpose and collective working processes. Combining these requirements with cross-cultural considerations, participants (A, C, D, E, F, I, J, K, R and S) in the UK suggested cross-cultural collectivism could be achieved by a framework, which is driven by participatory leadership from both the client and project manager. Even though participants (B, G, H, L, M, N, O, P, Q and T) in Kenya favoured authoritarian leadership style, on this particular category most participants agreed that in order to build an effective team it is essential to have a participatory leader. In achieving, the above participants in the UK favoured the use of multi-cultural analysis whilst participants in Kenya disagreed slightly. During the discussion session, participants in Kenya highlighted that with the growing trend of globalisation the construction industry in Kenya needs to start using profiling. In doing this the effective multi-cultural team working can be achieved at many levels in the project environment.

8.5.6 Cross-cultural trust
In this, particular category participants agreed that cross-cultural trust depends on good interpersonal skills and mutual respect among the project team. From Tables 8.5a and 8.5b, it can be observed that participants suggested that the two variables identified in this study received the highest score. The response rate from the two groups did not drop below ninety-five percent. This illustrates that in order to achieve an effective project performance it is essential to have teambuilding activities in place. Almost all the project leaders indicated that they recognised that their project
decisions stood to gain from contributions that project workers make. In general, the participants agreed that the notion of cross-cultural trust is an important dimension of multi-cultural team working. Referring to their experience the participants suggested that, this part of the framework had been found to be effective in practice. In practice, participants highlighted that the achievement of project performance on multi-cultural teams reinforces the understanding of cross-cultural trust on projects.

8.5.7 Cross-cultural management
While the above categories discussed, outlined the key issues presented in this study, the overall issues examined in this category required a more concerted organisational-wide approach. From the results in Tables 8.5a and 8.5b, participants in Kenya and the UK agreed that cross-cultural management depended on the six variables identified within this particular category. An important issue highlighted in the verification exercise is the application of team cohesion in achieving cross-cultural management. In the context of achieving project performance, a majority of participants agreed that open communication and constructive feedback processes need to be in place. This in turn can help project leaders to build a co-operative culture pattern within a project environment. With a description of their project roles, the majority of participants suggested that it is vital for the project manager to keep the project team informed. This could be achieved through weekly meetings. Even though a majority of the participants affirmed the importance of disciplinary procedures, participants in the UK agreed that they needed to respect the culture of the local communities when working outside the UK.

8.5.8 Cross-cultural uncertainty
As proposed in this study, one of the causes of poor performance on multi-cultural project teams is the cross-cultural uncertainty, which can emerge during the initiation phase of cross-cultural interaction between project teams. In reducing uncertainty on projects, it was found that it is essential for the project manager to try to articulate project goals, roles, procedures, and most importantly to possess good interpersonal skills. As observed in Tables 8.5a and 8.5b, there was a difference of four percent from the four variables mentioned. Surprisingly, the two groups disagreed with the notion that managers need to be cross-cultural communicators. It can be observed that out of the five variables, ‘cross cultural communicator’ had the lowest score.
Interestingly, when reflecting on their own experience, participants in the UK noted that from the projects they have managed outside UK, it was essential to understand what were the project team's needs, wants, and desires. One of the competencies a project manager must possess in order to manage effectively is the ability to explain the behaviour of individuals in the project team and predict how the team will behave. In summary, there was a consensus that in order for a project manager to reduce uncertainty one has to gather more cultural data.

8.5.9 Multi-cultural team performance

From the results revealed in this category, it was found that a number of conditions and initiatives are conducive to good multi-cultural team performance for both the core team and the rest of the project team community. Reflecting on their personal experience, the two groups of managers agreed that the conditions and initiatives within the five main variables identified in this study:

- adherence of defined procedures;
- clearly communication procedures;
- development of effective people selection;
- ability to deal with cross cultural integration; and
- collective work plan.

From the two verification tables, it can be observed that the two focus groups agreed with the above conditions. There is recognition that a climate of good team performance can be achieved if the five cultural effects are combined and managed effectively. However, there was also a consensus that the initial focus should be on the eight categories discussed in this section. The following diagram is a representation of the cross multi-cultural project performance framework proposed in this study.
Chapter Eight

LEADERSHIP STYLE
- Responsive leader
- Inspirational leader
- Authoritarian leader
- Charismatic leader
- Delegative leader
- Participative leader
- Organizational leader

TEAM SELECTION AND COMPOSITION PROCESS
- Picking people on value for money
- Be based on ability individuals offer
- Capability to fit into the team
- Ability to work in a team
- Respect between team members
- Measure individuals beliefs
- Be based on technical ability
- How: Meredith assessment and Multi-cultural analysis

CROSS CULTURAL MANAGEMENT OF TEAM DEVELOPMENT PROCESS
- Team building
- Know individuals drivers
- Recognition and reward
- Develop team loyalty (shared aims and objectives)

CROSS CULTURAL TRUST
- Good interpersonal relationships
- Mutual respect between project leaders and team members
- How: Team building activities

BUILDING CULTURAL UNDERSTANDING THROUGH LEADERSHIP

MULTI-CULTURAL TEAM PERFORMANCE
- Adherence of defined procedures
- Clearly communication procedures
- Development of effective people selection
- Ability to deal with cross cultural integration
- Collective work plan

CROSS CULTURAL COLLECTIVISM
- Good team organisation
- Participatory leadership (PMC/Client)
- Commitment from all team members
- Open decision making
- How: Multi-cultural analysis

CROSS CULTURAL MANAGEMENT
- Keep project teams informed
- Inter-disciplinary procedure should be in place
- Verify project goals
- Encourage co-operative culture
- Promote constructive feedback process
- Open communication
- How: Build cohesion and stability in team working

CROSS CULTURAL UNCERTAINTY
- Articulation of project goals and objectives
- Clear project roles
- Managers need to be cross cultural communicators
- Effective interpersonal skills
- Adopt project procedures which would apply to everyone
- How: Gather more data to reduce culture and information gap
- How: Multi-cultural training

MULTI-CULTURAL TEAM PERFORMANCE
- Adherence of defined procedures
- Clearly communication procedures
- Development of effective people selection
- Ability to deal with cross cultural integration
- Collective work plan

Figure 8.5.9: Cross Multi-cultural Project Performance Framework
8.6 VALIDATION RESULTS

The following two tables are a representation of the assessment of the proposed cross multi-cultural project performance framework by participants in the UK and Kenya.

Table 8.6a: Respondents assessment of Cross Multi-cultural Project Performance Framework model (UK)

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONDENTS SCORE (1 Strongly disagree and 5 Strongly agree)</th>
<th>PARTICIPANTS</th>
<th>Average Score</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing of multi-cultural teams in projects are likely to fall within the following categories :-</td>
<td></td>
<td>A  B  C  D  E  F  G  H  I  J</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>1  Leadership style</td>
<td></td>
<td>5  5  5  5  5  5  5  5  5</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>2  Team selection process and composition process</td>
<td></td>
<td>5  5  5  5  5  5  5  5  5</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>3  Cross cultural management of team development process</td>
<td></td>
<td>4  3  3  3  5  4  4  3  5</td>
<td>4.8</td>
<td>96</td>
</tr>
<tr>
<td>4  Cross cultural communication</td>
<td></td>
<td>5  5  5  5  5  5  4  5  4</td>
<td>5.5</td>
<td>100</td>
</tr>
<tr>
<td>5  Cross cultural collectivism</td>
<td></td>
<td>5  5  5  5  5  5  5  5  5</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>6  Cross cultural trust</td>
<td></td>
<td>5  4  4  4  5  5  5  5  4</td>
<td>4.5</td>
<td>90</td>
</tr>
<tr>
<td>7  Management of cross cultural uncertainty</td>
<td></td>
<td>4  3  3  4  4  4  5  3  5</td>
<td>4.1</td>
<td>82</td>
</tr>
<tr>
<td>8  The factors identified can help improve cultural complexity issues within your organisation</td>
<td></td>
<td>5  5  5  5  5  5  5  5  4</td>
<td>4.8</td>
<td>96</td>
</tr>
<tr>
<td>9  The framework can easily be used without much training</td>
<td></td>
<td>4  4  3  3  4  4  3  3  3</td>
<td>3.6</td>
<td>68</td>
</tr>
<tr>
<td>10 The framework provides a generic applicability</td>
<td></td>
<td>4  4  4  4  4  4  4  4  4</td>
<td>4.1</td>
<td>82</td>
</tr>
<tr>
<td>11 The framework provides a basis for future research into the measurement of multi-cultural team performance</td>
<td></td>
<td>5  5  4  5  4  5  5  4  5</td>
<td>4.6</td>
<td>92</td>
</tr>
</tbody>
</table>

243
Table 8.6b Respondents assessment of Cross Multi-cultural Project Performance Framework (Kenya)

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>RESPONDENTS SCORE (1 Strongly disagree and 5 Strongly agree)</th>
<th>Average Score</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing of multi-cultural teams projects in is likely to fall within the following categories:</td>
<td>PARTICIPANTS K L M N O P Q R S T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Leadership style</td>
<td>5  5  5  5  5  5  5  5  5  5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Team selection process and composition process</td>
<td>5  5  5  4  5  4  5  5  5  5</td>
<td>4.7</td>
</tr>
<tr>
<td>4</td>
<td>Cross cultural management of team development process</td>
<td>3  4  4  5  3  3  4  3  3  3</td>
<td>3.5</td>
</tr>
<tr>
<td>4</td>
<td>Cross cultural communication</td>
<td>5  5  4  4  4  5  5  4  4  4</td>
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<td>5</td>
<td>Cross cultural collectivism</td>
<td>5  5  5  5  5  5  5  5  5  5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Cross cultural trust</td>
<td>3  3  3  4  3  4  3  3  3  4</td>
<td>3.3</td>
</tr>
<tr>
<td>7</td>
<td>Management of cross cultural uncertainty</td>
<td>3  3  4  3  3  3  4  4  4  3  3</td>
<td>3.3</td>
</tr>
<tr>
<td>8</td>
<td>The factors identified can help improve cultural complexity issues within your projects</td>
<td>4  4  3  3  4  5  5  4  3  5</td>
<td>4.5</td>
</tr>
<tr>
<td>9</td>
<td>The framework can easily be used without much training</td>
<td>3  3  3  2  2  2  3  2  3  3</td>
<td>2.6</td>
</tr>
<tr>
<td>10</td>
<td>The framework provides a generic applicability</td>
<td>4  4  4  3  4  4  5  4  4  4</td>
<td>4.0</td>
</tr>
<tr>
<td>11</td>
<td>The framework provides a basis for future research into the measurement of multi-cultural team performance</td>
<td>5  5  4  4  4  5  5  4  4  4</td>
<td>4.4</td>
</tr>
</tbody>
</table>
The Cross Multi-cultural Project Performance Model describes how project leaders from Kenya and the UK perceive effective multi-cultural team working. From the above two Tables 8.6a and 8.6b, it can be observed that participants felt that the framework highlighted the key factors of cultural complexity that have to be tackled within a multi-cultural project team that is determined to deliver a high level performance. However, participants (K, L, M, N, O, P, Q, R, S and T) in Kenya were of the view that though the framework presented a useful means to maximise the performance of multi-cultural teams, much training would be needed before its full implementation. Interestingly, during discussions with participants in Kenya they acknowledged that there is an increased need to get project teams and managers from different nationalities to work together. In their opinion, the framework provided a generic application and established a basis for building understanding, an awareness of cultural differences, and how they be managed.

Reflecting on their personal experience, a majority of participants (A, B, C, D, E, F, G, H, I and J) in the UK agreed that the proposed a framework, which could be generally applied and took account of the cultural differences of project teams. With an ongoing increase in multi-cultural team working on construction projects, both participants affirmed that the framework provides a groundwork from which further research can be carried out on multi-cultural team working. Results revealed by the verification and validation exercise, suggest that it is essential that researchers in construction management advance beyond the mere appeal of cultural diversity studies towards a more complete and detailed explication of multi-cultural team processes.

8.7 FRAMEWORK IMPLICATIONS
The growing trend in engineering design and construction is giving rise to a need for the development of effective multi-cultural teams. Now that construction companies are able to move resources to almost any location worldwide and have the capacity to work on a global scale; for many organisations future opportunities to work entails thinking more clearly about cross-cultural issues and more overtly and systematically an understanding of multi-cultural team working. As proposed in this study, this requires the integration of thinking and practice related to cross-cultural management. Although much can be achieved by working with multi-cultural teams, the truly
successful construction firms are likely to be those, which embed the change through integrated changes to cross-cultural team selection, development process, communication, collectivism, trust, and uncertainty. In applying the above, participants affirmed that the value of multi-cultural team working can be captured at many levels in the organisation, be they project based or permanent, and furthermore will allow project teams to reach high performance levels consistently. The proposed framework in this study has implications for construction managers who work with multi-cultural teams and who are committed to improving team performance and productivity. The utilisation of the proposed framework would not instantly transform multi-cultural teams into high performing ones; however, it does identify eight key cross-cultural dimensions, which need to be considered. From the above, it is hopefully, evident that in order to develop effective multi-cultural project teams it is necessary to create an environment, which both acknowledges and values cross-cultural complexity.

8.8 SUMMARY
This chapter presented the results obtained from a validation exercise of the framework for multi-cultural team working on projects. The aim of the verification and validation was to measure the extent to which the proposed framework is valuable, complete, practical, and adequate. The proposed framework is intended to provide project leaders with an understanding and awareness of managing multi-cultural project teams. As illustrated in the verification and validation results, the two groups expressed willingness and a capacity to incorporate the framework into their organisations. In conclusion, it was revealed that the proposed framework provides a clear context for examining cultural complexity on construction projects. In the next chapter, recommendations and further research work are presented.
CHAPTER NINE: RESEARCH CONCLUSIONS AND RECOMMENDATIONS

9.1 INTRODUCTION
The aim of the research was to develop a framework for managing and improving the performance of multi-cultural project teams. The research objectives were developed in Chapter One in order to achieve the aim of the research. The preceding chapter discussed the results of the research within the context of the objectives, literature, and theory. This chapter briefly highlights the key findings and draws conclusions from these. Finally, the chapter provides recommendations to industry and suggests areas for further research work based on the literature, findings, and discussion.

9.2 CONCLUSIONS
The research focussed on the experiences of project leaders in Kenya and the UK. A number of significant issues have been identified that have not previously been discussed in the literature. The issues that have been identified relate to multi-cultural team integration on heavy construction engineering projects. The evidence from this research shows that there is an emerging trend in the development of construction project management as a research domain. The discipline is increasingly being informed by the experiences of construction project managers across the world. On a fundamental level, it was confirmed that project teams across the world face similar threats. These threats manifest themselves differently depending on project context. Cross-cultural factors were identified as the main reason behind such variations.

This research further established that cross-cultural team selection and composition process, leadership style, and cross-cultural management of team development processes have a significant bearing on the success factors for projects in Kenya and the UK. The researcher noted that effective project integration would have a positive effect on project success. For example, it emerged that effective project integration in heavy construction engineering projects will allow early identification of problems in multi-cultural project teams. These studies confirm that construction project managers in Kenya and the UK work in a dissimilar context and face a different set of project problems because of the differences in cultural and environment factors.
Concerning factors for efficient integration process, the research identified the main categories that are central for project leaders and their project teams to appreciate and understand. These are cross-cultural collectivism, cross-cultural empathy, cross-cultural change, and cross-cultural uncertainty. Project leaders face considerable cross-cultural challenges when working with multi-cultural teams in their projects. The most formidable problems project leaders face in modifying project management to local needs include procedures, knowledge, and process. As discussed in the validation exercise, if a proper cultural strategy is implemented and managed by properly trained project leaders these difficulties can be overcome. The accruing benefits will extend to all the stakeholders in large, heavy construction engineering projects in both developed and developing countries.

In relation to monitoring project team performance, it was established that it would be beneficial to have a robust and flexible mechanism in place. The survey results showed that it is essential to have well defined procedures for project teams. The findings relating to achieving team goals showed that high performing multi-cultural project teams had clearly defined communication procedures. Even though there were some differences between participants in Kenya and the UK, the findings showed that project leaders preferred a more open and trusting approach when dealing with multi-cultural project teams. In order to create an integrated supply team there needs to be a combination of a structured team selection and an understanding between project teams to achieve value. The findings also demonstrated aligning goals within multi-cultural project teams, project leaders needed to set collective priorities and project work plans. This process needs to be carried out meticulously, because as noted in this research project, teams come from different cultures and organisations. Maintaining team affiliations is directly based on trust. Given the generally dynamic nature of team affiliations in multi-cultural project teams, the client and project manager must determine a common team culture from the outset. In order to address any issues, which might arise, the client and project manager should ensure that all project procedures for multi-cultural team working are visible to all the project teams.

Concerning managing obstacles to team integration, it was established that communication in multi-cultural teams is a significant factor in the successful
completion of heavy construction engineering projects. It is essential for project leaders to ensure that the nature of the interactions do not affect the strength of the relationships between project teams and their ability to transfer knowledge and information required to complete project tasks successfully. As previously pointed out, project leaders need to implement a clear and robust procedure of resolving conflicts that might arise. What needs to be well understood is that the effective structure of multi-cultural team working depends on a well-balanced communication system, between the client, project manager, and the project team. The research also revealed that the multi-cultural project team’s performance framework comprises of eight well-defined stages. All these steps emerged as being related; they are comprised of independent variables. These steps were found to be crucial to manage successfully multi-cultural project teams. The research verified that these steps define a model for project leaders to use in conflict resolution. They also lay a good foundation for a better working relationship between multi-cultural project teams and their leaders. The framework was considered useful for construction projects since it addressed most of the requirements that are necessary for organisations to achieve effective multi-cultural team working.

Poor management of cultural issues can potentially result in considerable damage being done to the organisation of multi-cultural project teams. This research has illustrated the views of project leaders on the extent to which culture factors can influence poor performance of multi-cultural project teams. It provides a good foundation for understanding the influential cultural factors that affect international heavy construction engineering projects. The findings have confirmed that organisations cannot afford to ignore or overlook cultural complexity in construction projects. It has also been demonstrated that a better understanding of managing cultural factors will help to minimise and manage cultural complexity in multi-cultural project teams. Being familiar with cultural issues empowers organisations with the requisite knowledge for improving the efficiency of managing multi-cultural project teams. It is worth noting that although the scope of this research was restricted to projects in Kenya and the UK, the geographical focus of this research does not invalidate these results with respect to other countries. The fact is that heavy construction engineering industry worldwide shares some common fundamental characteristics. Kenya and the UK were simply used as case studies to examine
broader issues and problems of the industry. Furthermore participants from the UK had worked on projects in developing countries. If anything, the Kenya and the UK cases represent an exceptional and a particularly convincing example because it constitutes participants from a developed and developing environment.

In general, terms, there are similarities in the fundamental characteristics of practice of project management in heavy construction engineering in both Kenya and the UK. This notwithstanding, it must be noted that the acceptance of project management as a professional discipline is still in its early stages of development in Kenya. Consequently, there are number of additional factors to be considered. Project management requires deliberate planning and action to create the conditions for success and put in place the strategy, leadership, goals, process, skills, systems, issue resolution, and structure to direct and exploit the dynamic nature of project work.

As a number of international agencies and organisations get involve with projects in developing countries, the role of multi-cultural team integration will undoubtedly increase. The strategies proposed in this research cannot be expected to resolve all the cultural issues and multi-cultural team working issues in heavy construction engineering projects. However, their use defines an approach that is superior to the traditional approaches typically adopted and consequently merits far wider application. However, what does this mean for project managers and aid agencies in developing countries? They must actively promote multi-cultural team working as the means of addressing poor performance on people management and cultural issues on construction projects. In particular, if organisational change is to be effectively introduced in developing countries such as Kenya, the organisations will have to ensure that their key decisions are being informed by the knowledge and experience of local or indigenous managers. This will require project managers and aid agencies to have a better understanding of cultural change processes and procedures in developing countries. In summary, the proposed approach presents a better way of optimising the performance of project-based operations thus enabling construction organisations to reform their poor performance on projects and empower them to better manage emerging culture challenges in their future projects.
9.3 CONTRIBUTION TO THE RESEARCH
The research has established that when managing multi-cultural project teams, project leaders need to take into account the influence of behaviour, values, beliefs, and cultural background of individuals. There is a need to pursue new directions in cross-cultural management in construction projects given that with globalisation, cultural issues in construction have become more complex than ever before. There should be a specific focus on cross-cultural collectivism and communication to deal with the temporal nature of construction project teams. To date this complexity has received very little attention (if any) from the construction research community.

9.4 RECOMMENDATIONS TO THE INDUSTRY
Following an analysis of the findings, a number of recommendations can be formulated which need to be addressed by the industry if its poor performance in people management and cultural issues are to be improved. These are:

- The growing trend in the globalisation of construction projects is giving rise to a need of multi-cultural project teams. For many construction organisations, this need will require thinking more clearly about cross-cultural issues and more overtly systematically understanding and valuing the diversity of project teams. Project leaders will need to pay attention to the cultural issues because they seem to pose a significant challenge to project success. The awareness, recognition, and knowledge of cultural issues on projects would enhance multi-cultural team integration. Achieving this on construction projects will need the integration of thinking and practice relating to the use of profiling methods, team building, appreciation of the benefits of differing personal styles and behaviours of individuals.

- In order to realise and enhance the project management concept in Kenya, the government should commit itself to leading by example in works it commissions as the client. This can be affected through the Ministry of Public Works and Ministry of Planning and Development. The Government will need to appoint an independent project management body to lead in implementing recommendations. Getting the right people with the right skills should be a priority for the industry.
In addition, there should be an emphasis on modernising and enhancing the existing skills and management abilities of its existing staff.

- As the main regulatory body in Kenya, it is essential for the government to ensure that construction organisations deliver value for money to clients. It should ensure that the existing laws and codes allow project teams to develop new ways of working more efficiently on projects. To achieve above, the Kenyan government will need to intensify the existing efforts aimed at eradicating corrupt practices within the industry.

9.5 RECOMMENDATIONS FOR FURTHER RESEARCH

The study has achieved its aim of developing a multi-cultural project team performance-framework for heavy construction engineering projects. Although the findings have universal applicability, it will be important to conduct follow-up research validating the potential for using the results of this study to establish frameworks for cross-cultural project management practice in different organisations and contexts. This will provide not only data about the validity of the framework in generic terms but will also generate additional data on the influence of cultural factors that can be used to further refine the proposed integration framework.

There are some issues affecting cultural integration that were not covered in-depth but have been identified as themes for subsequent research in this area. These issues have been outlined as very specific recommendations for further research below.

- Since it has been confirmed that cultural complexity exists within the construction industry, it will be valuable to have further research work focusing on cross-cultural collectivism and communication. Cross-cultural collectivism and communication in multi-cultural construction project teams remains an aspect of construction project management that has received very little consideration from the construction research community. The recommended studies in this theme should focus on developing guidelines or strategies for effective collectivism and communication in multi-cultural project teams.
• There is a need for the construction industry to develop further its appreciation of the different cultural factors that influence multi-cultural team working in projects. This calls for comprehensive research into contextual factors, including the unique features of heavy construction engineering projects, socio-economic characteristics of projects, and socio-cultural differences. The practice of project management within the construction industry will greatly benefit from such studies especially if they not only identify the influencing factors but also establish if any co-dependencies exist among these factors.

• It was established that multi-cultural project teams have different tolerances for uncertainty. Such considerations need to be taken into account in further research focussing on examining factors that can be used to manage uncertainty in multi-cultural projects teams.

• Although there has been significant research into multi-cultural team integration in Western economies, there has been little done to address this theme in developing countries. The focus of existing studies has been on the use of key success factors to improve the effectiveness of project management in developing countries. This highlights the need for research work examining team integration in construction projects in developing countries.

• There is a growing demand for models and project tools to help multi-cultural project managers working in Africa deal with large and complex heavy construction engineering projects. There is currently a dearth of models addressing conflict management in heavy construction engineering projects. Further studies in this area will help the managers to understand procedural and contractual arrangements especially when dealing with government officials in a developing country.

• Gender representation has emerged as an important aspect of increasing team productivity through diversity. The construction industry still needs to attract and retain female employees. It has been established that women in non-traditional occupations such as construction face unique challenges which if not adequately
addressed will undermine any organisation’s existing team integration efforts. In order to address properly the gender specific challenges, there should be further studies focussing on such issues. Such studies should explore the national, social, cultural, and economic factors, which perpetuate the stereotypical masculine image of the construction industry.
REFERENCE LIST


References


References


[Accessed 1st October 2007]


References


APPENDICES
APPENDIX A-POSTAL QUESTIONNAIRE

SURVEY QUESTIONNAIRE ON MULTI-CULTURAL TEAM INTEGRATION ON CONSTRUCTION ENGINEERING PROJECTS

Notes about the Questionnaire:
As is the case with many questionnaire surveys there may be some questions which appear, irrelevant or impertinent. However, it is necessary in this study that all questions are answered, as the questionnaire is designed to achieve particular research objectives, and it is hoped not to offend participants in any way. If there are any questions, which you are unwilling or unable to answer, then it is my wish that you continue to answer the remainder of the questionnaire. Remember that both your identity and that of the company you work for will remain strictly confidential.

Project Integration Project integration is the process required to ensure various elements/teams of the projects are properly coordinated. Please indicate to what extent you agree or disagree with the following definition, by circling (O) the appropriate number.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

SECTION 1: GENERAL INFORMATION. In each of questions 1-6 please tick (✓) one of the box only.

1. In what sector does the main aspect of your business activities fall under?
   Oil and Gas [ ] Manufacturing [ ] Construction [ ] Other [ ] please specify

2. Please state your current job title.
   Project director [ ] Project manager [ ] Project Planner [ ] Client [ ] Other [ ]
   (please specify)

3. How long have you worked within this sector?
   Less than a year [ ] 1-5 years [ ] 11-15 years [ ] 16-20 years [ ] More than 20 years [ ]

4. How long have you been involved with managing projects?
   Less than a year [ ] 1-5 years [ ] 6-10 years [ ] More than 20 years [ ]

5. How effective has integration been met on your most recent projects?
   Very effectively [ ] Less effectively [ ] Fairly effectively [ ] Not been met [ ]

6. Describe your role and responsibility in the organisation. Please rank the factors in order of your responsibility.

<table>
<thead>
<tr>
<th>Forecasting</th>
<th>Control</th>
<th>Planning</th>
<th>Managing</th>
<th>Co-ordination of work</th>
<th>Co-ordination of resources</th>
<th>Other (please specify)</th>
</tr>
</thead>
</table>
SECTION 2:  MULTI-CULTURAL TEAM INTEGRATION FACTORS

SECTION 2A: The following is a list of factors which are associated with team integration. Please indicate (i.e. tick (✓)) the extent of level of importance on each factor using a scale from 1 to 5 where: 1 indicates 'very important'; 2 'important'; 3 'fairly important'; 4 'slightly important 'and 5 'not important'.

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<tr>
<th>Level of importance</th>
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<th>I</th>
<th>FI</th>
<th>SI</th>
<th>NI</th>
<th>From the list please select 5 most important</th>
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<tbody>
<tr>
<td>Monitoring project team performance</td>
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<td>Co-ordination of resources</td>
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<td>Agreeing cost project objectives</td>
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<td>Monitoring, controlling a project</td>
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<td>Adherence to defined procedures</td>
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<td>Project start-up</td>
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<td>Delegating responsibility</td>
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<td>Achieving team goals</td>
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<td>Smoothness to handover</td>
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<td>Responsiveness to change</td>
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<td>Issue resolution</td>
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<td>Co-operation</td>
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<td>Dispute avoidance</td>
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<td>Communication</td>
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<td>Joint-decision making</td>
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<td>Creating an integrated supply team</td>
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<td>Project-selection, prioritisation</td>
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<td>People selection</td>
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<td>Improving project team performance</td>
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<td>Ability to deal with quality</td>
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<td>Ability to deal with risk</td>
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<td>Budgeting control</td>
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<td>Ability to deal with time</td>
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<td>Ability to deal with project change</td>
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<td>Ability to deal with team integration</td>
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<td>Aligning goals within the team</td>
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<td>Individual work plan</td>
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<td>Clearly defined goals</td>
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<td>Organisation culture</td>
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<td>Collective work plan</td>
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<td>Maintaining team affiliation</td>
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<td>Client participation</td>
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<td>Team contribution to planning</td>
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<td>Contribution to continuous improvement</td>
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<td>Identification of business related issues</td>
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<td>Project manager leadership</td>
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<td>Trust</td>
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</table>
SECTION 2B: From the list of team integration in question 2 A, please select the most difficult factors and indicate how you consider them to be best overcome. With 1 assigned to the most difficult, rank 2 to the next most difficult, etc.

<table>
<thead>
<tr>
<th>PROJECT INTEGRATION FACTORS</th>
<th>HOW I CONSIDER THE FACTORS TO BE BEST</th>
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<tbody>
<tr>
<td>RANK 1:</td>
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<td>RANK 2:</td>
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<td>RANK 3:</td>
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<td>RANK 4:</td>
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<td>RANK 5:</td>
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SECTION 2B: From the list of project integration in question 2 A, please select 6 benefits of integration to your projects. With rank 1 assigned to the most important, rank 2 to the most important, etc.

<table>
<thead>
<tr>
<th>BENEFITS OF PROJECT INTEGRATION</th>
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<tbody>
<tr>
<td>RANK 1:</td>
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<td>RANK 2:</td>
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<td>RANK 5:</td>
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<td>RANK 6:</td>
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SECTION 2C: From the list of project integration in question 2 A, please indicate how multi-cultural project teams can be effectively implemented on your projects or has been implemented successfully. Please select 5 most important factors, with rank 1 assigned to the most important, rank 2 to the most important, etc.

<table>
<thead>
<tr>
<th>TEAM INTEGRATION IMPLEMENTATION</th>
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<tr>
<td>RANK 1:</td>
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<td>RANK 2:</td>
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<td>RANK 3:</td>
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<td>RANK 4:</td>
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<td>RANK 5:</td>
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</tbody>
</table>
SECTION 3A: How satisfied are you that your organisation can use multi-cultural project teams? Please circle (0) the appropriate number.

<table>
<thead>
<tr>
<th>Very satisfied</th>
<th>Satisfied</th>
<th>Fairly satisfied</th>
<th>Not satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-cultural teams</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</table>

If there was one thing that you feel is not working properly and you would like to change, what would it be?

Thank you very much for taking part in this survey. If you would like a summary of the results, please enter your name and contact address below.

Name:  

Contact Address:
Dear ,

I am currently undertaking a PhD entitled “Framework for Managing Multi-cultural Project Teams”. My research focuses on multi-cultural team integration. The first stage of the work necessitates a survey of Kenyan and the UK project managers and engineers so as to establish the importance of multi-cultural project teams to project success and also to determine the role of organisational and project culture success within a project environment.

The main research objective focuses on identifying what factors lead to multi-cultural team integration success. It is my belief that ascertaining the project integration success criteria from project managers and engineers who are directly involved with projects, will greatly assist in the provision of the most appropriate multi-cultural project framework. The decision to choose your organisation was based on the excellent background your company has had on project management.

I would be very grateful if you could kindly assist me in arranging the participation of your project managers and engineers in this study. The questionnaire (please see attached postal questionnaire) should take no longer than 30 minutes to complete and will provide, as I have mentioned, vital information for my research. You are assured of confidentiality and that any identifying information will be destroyed at the data processing stage of the research. Please be assured that the identity of your project managers, engineers and your organisation shall remain strictly confidential.

Hopefully the research will provide a comprehensive review of success factors of integration on projects and reveal some factors that influence the role of organisational and project culture success. If you would like a summary of the research findings I should be pleased to forward a copy on completion of the survey.

Given the constraint of time it would be helpful if the questionnaires were ready by the end of March. If you have any further questions or would like a discussion with me please contact me on +44 (0)1509 222891 or leave a message to call you back as soon as possible.

Your assistance and co-operation in this research will be welcome and gratefully received; I hope you will be able to assist in furthering my research studies. Once again if you have any queries please do not hesitate to contact me.
Yours sincerely,

Edward Ochieng
PhD Research student
APPENDIX C-SEMI-STRUCTURED INTERVIEW QUESTIONS TO PARTICIPANTS

Background:
This research is part of a PhD study examining problems being experienced in the management of multi-cultural project teams. The main research objective focus on identifying what factors lead to a successful multi-cultural project team integration.

1. Brief background:
(i) Describe your role and responsibility in the organisation?
(ii) What is meant by project integration-please give examples?

2. What is integration to your projects, can you give an example?
(i) What type of project do you work on?
(ii) What are key problems you face in managing multi-cultural project teams?

3. Who are the primary participants in the integration process?

4. What are the key factors for multi-cultural team integration on your projects?

5. What is the most important factor in obtaining and maintaining a commitment to multi-cultural team integration?

6. What are the main steps in achieving a widespread multi-cultural team integration on your projects?

7. What are the barriers you’ve encountered in achieving multi-cultural team integration?

8. What are the technical aspects, cultural complexity, procedure, difficulties, aims and objectives of integration on your projects?

9. What is the role of senior management in above and how have you demonstrated commitment?
10. What are the degree of success you have encountered in achieving multi-cultural integration?

(i) When achieved what are the benefits?

(ii) What strategy do you have in place in achieving team integration?

11. What are the mechanisms in place in your definition process that supports?

(i) multi-cultural Integration; and

(ii) group shared understanding

13. How satisfied are you that your organisation can use multi-cultural project teams in future projects?

14. If there was one thing that you feel is not working properly and you would like to change, what would it be?
Dear ,

I am currently undertaking a PhD entitled "Framework for Managing Multi-cultural Project Teams". My research focuses on multi-cultural team integration. The first stage of the work necessitated a survey of Kenyan and the UK project managers and engineers so as to establish the importance of multi-cultural project teams to project success and also to determine the role of organisational and project culture success within a project environment.

The main research objective focuses on identifying what factors lead to multi-cultural team integration success. It is my belief that ascertaining the project integration success criteria from project managers and engineers who are directly involved with multi-cultural project teams, will greatly assist in the provision of the most appropriate project integration strategy. The decision to choose your organisation was based on the excellent background your company has had on project management.

As you probably have been aware multi-cultural project teams to work effectively across international boundaries has become a major issue. The trend is likely to continue and the future of construction will increasingly depend on doing projects effectively in different cultural environments. As a PhD research student at Loughborough University, I have a growing interest in finding out how project managers have responded to effectively manage multi-cultural project teams in different cultural environments and avoided the pitfalls and difficulties which can arise through cultural differences when managing heavy construction engineering projects.

Your project manager's participation in this project will eventually help to enhance the understanding of how to manage multi-cultural project teams effectively in different cultural environments. You are assured of confidentiality and that any identifying information will be destroyed at the data processing stage of the research. Please be assured that the identity of your project managers, engineers and your organisation shall remain strictly confidential.

Hopefully the research will provide a comprehensive review of success factors of integration on projects and reveal some factors that influence the role of
organisational and project culture success. If you would like a summary of the research findings I should be pleased to forward a copy on completion of the research.

If you have any further questions or would like a discussion with me prior to making up your mind please contact me on +44 (0)1509 222891 or leave a message to call you back as soon as possible. Your assistance and co-operation in this research will be welcome and gratefully received; I hope you will be able to assist in furthering my research studies.

Yours sincerely,

Edward Ochieng
PhD Research student
I hereby agree/not agree for my organisation to participate in this study. I understand that all information gathered during the study will be treated as strictly confidential.

Name: ____________________________________________

Date: ____________________________________________

Telephone: ________________________________________

Address: _________________________________________

If you do not wish to participate in the study, I would be grateful if you would sign above and please feel free to write down the reasons for refusing.
APPENDIX E-EXAMPLE OF A RETRIEVED SEGMENT FROM NVIVO

Eddy: What is meant by integration-please give examples?

A: “Project integration is getting everyone involved in the construction process to focus in the need of the client”.

I: “Project integration is getting everyone involved with a project to focus on client needs”.

O: “Project integration is getting everyone involved in the project cycle so as to focus in the need of the client”.

P: “Project integration is putting a single team together so as to meet client needs”.

Eddy: If there was one thing that you feel is not working properly and you would like to change, what would it be?

A: “To have contractors and sub-contractors more involved in the process. I would also like to see designers more involved. Having the three incorporated can successfully lead to proper integration. If there are not involved at an early phase of the project then all the integration can come undone. That is one thing I would like to see changed”.

S: “Get graduates and build them through the organisation, make a long term investment. It is mainly because there is not enough investment being made on young graduates”.

R: “We need to get people who know what project management is all about and also people who think about the welfare of ordinary Kenyans”.

APPENDIX F - VERIFICATION QUESTIONNAIRE

MULTI-CULTURAL TEAM INTEGRATION FACTORS

The following is a list of factors which are associated with multi-cultural team integration. Please indicate (i.e. tick (✓)) the extent of level of agreement on each variable using a scale from 1 to 5 where: 1 indicates 'strongly agree'; 2 'agree'; 3 'uncertain'; 4 'disagree' and 5 'strongly disagree'.

<table>
<thead>
<tr>
<th>Level of agreement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly disagree</th>
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<td>Leadership style</td>
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<td>Responsive</td>
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<td>Inspirational</td>
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<td>Authoritarian</td>
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<td>Delegative</td>
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<td>Participative</td>
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<td>Organisational</td>
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<td>Team selection and composition process</td>
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<td>Picking people on value for money</td>
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<td>Be based on ability individuals offer</td>
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<td>Capability to fit into the team</td>
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<td>Ability to work in a team</td>
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<td>Respect between team members</td>
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<td>Measure individuals beliefs</td>
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<td>Be based on technical ability</td>
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<td>Use of Meredith assessment and Multicultural analysis</td>
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<td>Cross-cultural management of team development process</td>
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<td>Teambuilding</td>
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<td>Know individuals drivers</td>
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<td>Recognition and reward</td>
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<td>Develop team loyalty (shared aims and objectives)</td>
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<td>Establish clear lines of responsibility</td>
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<td>Cultural empathy</td>
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<td>Establish team effectiveness</td>
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<td>Establish trust</td>
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<td>Implement honesty</td>
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<td>Encourage respect for others</td>
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<td>Cross-cultural collectivism</td>
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<td>Good team organisation</td>
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<td>Participatory leadership (PM/Client)</td>
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<td>Commitment from all team members</td>
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<td>Open decision making</td>
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<td>Use of multi-cultural analysis</td>
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<td>Cross-cultural trust</td>
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<td>Good interpersonal relationships</td>
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<td>Mutual respect between project leaders and team members</td>
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<td>Team building activities</td>
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<td>Cross-cultural management</td>
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<td>Keep project teams informed</td>
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<td>Inter-disciplinary procedure should be in place</td>
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<td>Verify project goals</td>
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<td>Encourage co-operative culture</td>
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<td>Promote constructive feedback process</td>
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<td>Open communication</td>
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<td>Cross-cultural uncertainty</td>
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<td>Articulation of project goals and objectives</td>
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<td>Clear project goals</td>
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<td>Managers need to be cross-cultural communicators</td>
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<td>Effective interpersonal skills</td>
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<td>Adopt project procedures which would apply to everyone</td>
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<td>Gather more data to reduce culture and information gap</td>
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<td>Multi-cultural training</td>
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APPENDIX G-VALIDATION QUESTIONNAIRE

The following is a list of factors which are associated with cross multi-cultural project performance framework proposed in this study. Please indicate (i.e. tick (✓)) the extent of level of agreement on each variable using a scale from 1 to 5 where: 1 indicates 'strongly agree'; 2 'agree'; 3 'uncertain'; 4 'disagree' and 5 'strongly disagree'.

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<tr>
<th>Factor</th>
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<th>2</th>
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<td>Managing of multi-cultural teams in projects is likely to fall within the following categories:</td>
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<td>1. Leadership style</td>
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<td>2. Team selection process and composition process</td>
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<td>3. Cross cultural management of team development process</td>
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<td>4. Cross-cultural communication</td>
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<td>5. Cross-cultural collectivism</td>
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<td>6. Cross cultural trust</td>
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<td>7. Management of cross-cultural uncertainty</td>
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<td>8. The factors identified can help improve cultural complexity issues within your projects</td>
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<td>9. The framework can easily be used without much training</td>
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<td>10. The framework provides a generic applicability</td>
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<td>11. The framework provides a basis for future research into the measurement of multi-cultural team performance</td>
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12. Please comment on how the model can be improved if any.
APPENDIX II-LIST OF PUBLICATIONS

