CHAPTER 1

INTRODUCTION

1.1 Background of research

1.1.1 The Malaysian construction industry

Construction industry is one of the largest and most valuable industries in Malaysia. It is responsible for building physical infrastructure, provides shelter and transportation for people, businesses, industries and institutions. The construction sector influences economic wealth, societal well being and sustainability of the built environment (Fernandez, 2005). It generates employment for approximately 800,000 people at non-skilled and skilled levels (CIDB 2005a).

The construction industry has been playing a major role in economic development in Malaysia and has undergone rapid changes. The industry awarded a total value of projects worth RM73.4 billion in 2009, a decrease of 14.5%, as compared to RM85.8 billion in 2008. However, the number of construction projects saw an increase of 4.4% from 6,522 projects in 2008, to 6,716 in 2009. For both years, non-residential projects constituted the main development category; 32.9 % in 2008, and 29.1% in 2009, followed by infrastructure projects; 24.2% in 2008, and 24.6% in 2009 (DE International, 2011). In addition construction activity in residential projects moderated, following the completion of several high-end properties, particularly condominiums and apartments (DE International, 2011).

Although the industry contributed only 3% to the Gross Domestic Product (GDP) in the year 2009, it makes up an important part of the Malaysian economy due to the interaction with other industry branches, such as the manufacturing industry

(DE International, 2011). In the past years, the industry was supported by active implementation of projects under the Ninth Malaysia Plan (9MP) from year 2006 to 2010, particularly civil engineering and development of oil and natural gas projects, which gave a positive impact on construction and trade activities. The government has implemented the Tenth Malaysia Plan (10MP) beginning year 2011 to 2015 that will set the stage for a major national structural transformation towards that of a High Income Economy. The 10MP will potentially have an impact on the Malaysian construction industry, where RM230 billion development allocations have been allowed, and 60% or RM138 billion will be expended in physical development by the construction sector (DE International, 2011).

The construction industry is developing quickly. Maintaining a high ethical standard in construction profession and practice is crucial to the continuing healthy development of Malaysia and to the growth of the industry in particular. Professionalism implies a high standard of behaviour and social responsibility expected of a construction professional when they exercise their expertise, judgement and supervisory accountability over the management or implementation of a construction project (HKEDC, 2003). Good ethics depends not only on a professional; but also within the organisational setting, the system and procedure practiced, as well as rules and regulations present in the industry.

The growing demand for good ethical practice in all forms of business has been highlighted numerously by previous researchers (Sharpe, 1994; Rasberry, 2000; Petrick and Quinn, 2001 and Weymes, 2005). Hence, it is important that construction industry not only concentrate on technological advances but also put ethics in action. Good ethics is the only way to gain the trust and confidence of customers as well as the public.

1.1.2 Development of ethics in Malaysia

Tun Dr. Mahadhir bin Mohamad, former Prime Minister of Malaysia triggered the catalyst for ethics for Malaysia in Vision 2020. It is set out in the *fourth challenge* out of the nine strategic objectives or *challenges* in Vision 2020, which is: "*establishing a fully moral and ethical society whose citizens are strong in religious and spiritual values and imbued with the highest ethical standards*" (Ministry of Information, 1997, p.19) towards the development of human resources and sustainable development. He believed that these social strategic objectives: "*to develop a full moral and ethical society*" "*require our urgent, intensive and extensive attention…….Malaysians must cling to good moral and ethical systems. Otherwise we will lose our sense of direction and with it we will not achieve our vision*" (Ministry of Information, 1997, p. 20-21).

Malaysia has been a successful developing country and is forging ahead to become a developed nation in its own mould. In order to be more successful, the nation has to be managed effectively and its weaknesses and shortcomings have to be overcome. A major challenge that it has to address is the strengthening of ethics and integrity. As a result, the National Integrity Plan (Institute Integrity Malaysia, 2004) was launched by Tun Abdullah Haji Ahmad Badawi, former Prime Minister of Malaysia, on 23rd April 2004. The formulation of the National Integrity Plan is predicated upon the spirit and principles of the Federal Constitution, the philosophy and principles of the "*Rukun Negara*" (National Thrusts) as well as the aspirations of Vision 2020 (Institute of Integrity Malaysia, 2004).

Additionally, in its effort to stamp out corruption, the Government of Malaysia has supported the five year strategy plan of Transparency International Malaysia from 2006 to 2010. This strategy focuses on organisational development, advocacy, education and

training, surveys, media relations, publications, and regional networking (Transparency International, 2006a). Policy advocacy is also aimed at improving the institutional pillars of the National Integrity systems by reviewing anti-corruption policies and laws and promoting greater transparency and accountability in public contracting and procurement (Transparency International, 2006a).

The construction industry has responded towards the Vision 2020 and the National Integrity Plan. Construction Industry Development Board (CIDB) Malaysia in collaboration with the industry's stakeholders has formulated Construction Industry Master Plan (CIMP) 2006-2015, as one of the part of the national agenda to actively promote ethics and integrity in the construction industry. It is a comprehensive plan charting the strategic positioning and the future direction of the Malaysian construction industry over the next ten years which will support the government's plan to build Malaysia into a successful industrialised nation by year 2020 (CIDB, 2005a).

Seven Strategic Thrusts have been identified to ensure efficient execution of the CIMP; whereby, the Second Thrust is to "*strengthen the construction industry image*" (CIDB, 2007, p. 112). Briefly, the Master Plan has also identified seven critical areas and one of the agenda is: "*Professionalism-enhancement of professionalism is vital to the improvement of the image of the industry*" (CIDB, 2007, p. 78). Members of the Working Group for the CIMP have forwarded 20 recommendations to pave the future of the industry and, the enhancement of professionalism is acknowledged as one of the critical areas to address (CIDB, 2005a). These efforts share a common goal; to heighten awareness towards the prevention of unethical and malpractices so as to enhance ethics in the construction industry. It emphasise that superior ethics is a necessity towards the development of the construction industry in Malaysia. Ultimately, the underlying

principle is to improve service quality delivered by construction players and professions for the good of community interest.

1.2 Research problem

The construction industry in Malaysia faces challenging socio-economic, cultural, political and business environment, either locally or internationally. According to Yinghui and Eng (1999), the level of competition in the construction industry has risen in the past decade and it will be more intense in the new millennium. This is due to the opening of markets for international competition and the use of technology by the competitors. Malaysia as a developing country has already taken up the challenge in the competitive world, where local contractors are involved in international projects (CIDB, 2005b).

In the face of its size and universality, the industry is often cited as plagued with graft and malpractices. The main problem that surfaces is the fragmentation of the different sectors in the industry (Toor and Ofori, 2006). Construction professionals exercise their own skills and judgement and are accountable to the client and bound by their professional code of ethics. Contractors on the other hand, are keen to make a profit and hence their actions are inclined to their own principles in business ethics. Furthermore, construction is a hierarchical (designed by size of firm) industry where the many small companies tend to act as subcontractors to the large companies. Each of these different players in the industry has its own interests, which are often divergent and competing in nature. Their diversity can be a source of conflicting ethical standards and practice, which may affect quality performance and accountability to the client or customer.

Revelation of research carried in construction industries in other countries shows evidence that the construction industry is inundated with ethical issues (Vee and Skitmore, 2003; Jackson (2004/2005); FMI/CMAA, 2004; Poon, 2004c; Fan and Fox, 2005; Pearl *et al*., 2005). Common ethical issues highlighted were tendering practice, sub-standard quality of construction work, safety culture, payment woes, corruption and most importantly, public accountability for money spent on public buildings and infrastructure.

The scenario in the construction industry in Malaysia is no exception. The problems facing the industry are accountability and transparency of management of public funds, public sector procurement and tendering system, the contractors' performance and lack of professionalism, cash flow problem of contractors, lack of self regulation among contractors and other professional industry players in ensuring ethical practice and continuous improvement, and lack of regulatory approach towards code of ethics of associations and professional bodies (CIDB 2005b).

The continued call to reinforce ethical policies and applications in the Ninth Malaysian Plan and interest in Transparency rankings, coupled with rapid changes in technology and the borderless global environment shows that the industry needs to have ethical guiding principles. Malaysia as a developing country needs to focus on and be aware of these guidelines in order to minimise wrongdoings (Mahbob, 2005).

It can be seen that in the attempt to reshape the future landscape of the construction industry in Malaysia and to enable it to achieve its optimum size, capacity, capabilities and growth potentials, the industry faces a major problem in the area of ethics. Therefore, there is a need to address the increasing concern of ethical issues in the

industry necessitating a clear need for research to assist in overcoming the problems prevailing in the industry. The way forward is to improve ethics in the industry and it should come about from the way we educate construction professionals to the way we practice construction. There is a need for accountability between and among all participants, which places an imposed duty on the notions of ethics in an integrated framework that should facilitate responsible and accountable performance across the construction sector.

1.3 Justification of area of research

Ethics in the construction industry have only recently gained awareness from researchers and practitioners, hence, the lack of literature as compared to other industries. Throughout the review of relevant articles and papers, it is established that little was found or deliberated on ethics in the industry. Previous studies have concentrated on the "*participants, research sites and topics*" (Creswell, 2005, p.64) as follows:

- surveyors (Fan *et al*., 2001a and b; Ho and Ng, 2003; Liu *et al.*, 2004; Poon 2004a and b; Knight and Morledge, 2005) as the "*participants*" for research;
- studies are carried out in "*research sites*" in USA (Jackson, 2004/2005; FMI/CMAA, 2004); UK (Poon 2004a, b and c; Knight and Morledge, 2005); Hong Kong (Fan *et al*., 2001a and b; Fan *et al*., 2003; Ho and Ng, 2003; Ho, 2004; Ho *et al*., 2004; Liu *et al.*, 2004; Fan and Fox, 2005); Australia (Zarkada-Fraser and Skitmore, 2000; May *et al*., 2001; Vee and Skitmore, 2003); and South Africa (Pearl *et al*., 2005);
- the "*topics*" of study were ethics and education (Robertson,1987; Fan *et al*., 2001b); ethical standards (Fan *et al*., 2001a and b; Pearl *et al*, 2005); ethical decision-making (Fan *et al*., 2001a; Fan *et al*., 2003; Poon 2004b); code of

ethics (Vee and Skitmore, 2003; Liu *et al.*, 2004; Ho *et al*., 2004; Ho, 2004); professional ethics (Poon, 2003; Knight and Morledge, 2005); ethical perceptions (Ho and Ng, 2003); ethical behaviours (Poon 2004a); ethical climate and culture (Liu *et al.*, 2004); ethics management in construction project environments Kang et al., 2004); and ethics and leadership (Moylan, 2005).

Other common areas of previous researches of ethics in the industry relate to specific issues, for example, tendering issues (Zarkada-Fraser and Skitmore, 2000; May *et al*., 2001). Most studies have focussed mainly on practical problems or ethical issues occurring in the industry (Vee and Skitmore, 2003; Jackson (2004/2005); FMI/CMAA, 2004; Poon, 2004c; Fan and Fox, 2005; Pearl *et al*., 2005). The general objective of these studies was to identify and evaluate negative practices or conducts among the participants and within the industry, but, gave no solutions to these issues. However, they have not adequately addressed the area of ethics, which have the positive potential to affect construction projects and the industry as a whole.

Despite the interest and concern on ethical issues, previous studies which were carried out lack the answers to the questions of basic needs of the industry; that is, the ways to improve ethics in the industry. There is certainly a gap in knowledge in this area of research. Therefore, a tangible solution is needed in the area of ethics in the industry. There is also a need to look at the construction industry on its own, as there are significant differences in the nature and conditions of work, particularly in the business field of the construction industry due to the different nature, complexity, competition and diverging objectives between the different types of industry players, and other external factors that may influence ethics in the industry.

In Malaysia, even though ethical issues in the industry are widespread and unchecked, little attention is given to confront them. While there are declarations purporting to uphold several issues, the reality is that it is minimal and unstructured. This raises the need for a study on a systematic method for managing ethics which can offer an overall framework to improve ethics in the Malaysian construction industry. Thus, this study "*will fill this gap or void in the existing literature*" (Creswell, 2005, p.64). Since there is lack of studies on the subject matter in Malaysia, it is only reasonable that as a first step, a holistic research on ways to improve ethics would provide a clear development for the industry. This study "*extends past research into a new topic or area*" (Creswell, 2005, p.64) where there is lack of studies that have been carried out that takes this holistic view. A positive answer to the justification of this research is that "*it informs practice"* (Creswell, 2005, p.64) and will significantly contribute *new knowledge* (Creswell, 2005, p.64) to the industry in Malaysia and globally.

It has been justified that research needs to be conducted on this relevant topic. Research on all main industry players: public and private clients, consultants and contractors, is necessary so as to gather an overall insight of ethics in the industry for comparison and to avoid bias.

1.4 Aim of research

The aim of the research is to develop a framework of factors to improve ethics in the construction industry which can be adopted by educationists, professional bodies, industry players and policy makers in Malaysia.

1.5 Research objectives

In order to achieve the aim of the research, the research objectives are as follows:

1. To establish the ethical background of the construction industry by determining the understanding of the importance of ethics from the perspectives of an individual, a construction professional, and as an employee in a construction organisation.
2. To establish the ethical background of the construction industry by determining the standard of ethics of the construction professional, the construction organisation, and of the industry.
3. To identify ethical issues that occur in different stages of construction projects.
4. To develop a framework of factors to improve ethics in the construction industry.

1.6 Scope of research

The initial enquiry on the ethical background of the industry was determined through the background and career characteristics of the construction professional himself and also of the industry players; that is, construction organisations of clients, consultants and contractors. Next, the research focussed on perceptions on ethical issues and factors to improve ethics in the construction industry. These investigations were in the context of construction contracts of local Malaysian organisations or companies involved with the design, project management and construction of projects in Malaysia. This will allow and create an opportunity to explore cross learning from different industry players.

This research takes a holistic approach, where all relevant and necessary topics of ethics for the research are covered in the literature review. Since they are quite comprehensive,

the intensity or depth of each topic in the literature review are deliberated only as required to provide relevant knowledge and understanding for the research. However, most significantly, it is to ensure that the development of a framework to improve ethics in the industry is entirely related to the industry as a whole, which can be understood and adopted.

1.7 Outline of research methodology

In order to achieve the objectives of the research, information was gathered through primary and secondary data. The sources of primary data collection comprised the following groups of players within the construction industry: public clients, private clients, consultants and contractors. In order to develop a framework to improve ethics in the industry, primary data were collected from these groups through interviews and a questionnaire survey.

Secondary data were gathered through literature in order to identify previous researches and gaps in the topic where the research area can be carried out. The sources of secondary data are books, journals, publications from: government agencies, professional boards, professional institutions, contractor organisations; papers from international and national conference and seminars, newsletters and information from the media and the internet.

The research process was divided into four phases. The research processes are as follows. Phase 1 is the unstructured preliminary investigation interviews with two experts to confirm the usefulness and necessity of the research area of ethics in the industry. There are two tasks in Phase 2: Phase 2a - literature review and Phase 2b - semi-structured pilot interviews with 11 key representatives from industry players. The

literature review identifies ethical issues and the factors to improve ethics in the industry. The pilot interviews are the industry input for identification of ethical issues and the factors to improve ethics which supplement the literature review. In this phase, a conceptual framework of factors to improve ethics is formulated through literature review and then through pilot interviews, for the development of a framework which is the research aim. Phase 3 is the data collection through questionnaire survey with industry players where consequently empirical evaluations are carried out on the data collected to statistically confirm the developed framework. The final Phase 4 is the validation process through interviews with six experts from prominent industry players to validate the developed framework.

1.8 Guide to thesis contents

The links between chapters are shown in the flowchart in Figure 1.1. The thesis comprises of nine chapters. The following guide to the thesis will explain briefly the contents of each chapter.

Chapter 1 introduces the research and set the foundation and purpose of the overall research. Firstly, the background of the Malaysian construction industry and the development of ethics in Malaysia are introduced. Then, the research problem and justification of area of research are identified and explained. Subsequently, the aim of research and research objectives are clearly stated, followed by the scope of the research. Next, a brief outline of research methodology and a guide to the thesis contents are outlined.

Chapter 2 is the literature review. It begins with the basic concepts of ethics by defining the terms “ethics”, the “profession”, “professionalism”, “professional ethics” and “business ethics”; followed by an explanation of the principal theories of ethics.

The chapter then introduces ethical issues in business, before discussing in detail ethical issues in the construction industry. They are corruption and bribery; pre-contract issues, such as tendering practice; construction issues, such as site safety issues; and other issues affected by construction projects, such as environmental issues.

Chapter 3 commences with a literature review of models in ethics by previous researchers in order to develop a framework of factors to improve ethics in the construction industry. The factors are described and grouped into eight components: individual, professional training, organisational, industry, system and procedure in the construction industry, environmental ethics, legislative enforcement and accountability and customer satisfaction. These factors were explored from a general perspective and their relevance to the industry. This chapter has provided the research with an overall application of ethics and serves as the platform for the development of a conceptual framework to improve ethics in the construction industry.

Chapter 4 focuses entirely on the design and methodology which discusses the research approach, design and processes in the research. The research design used for this research is the sequential mixed methods design (Creswell, 2005, 2003). The basis of selection and suitability of methods adopted for the research methodology are also discussed in this chapter.

Chapter 5 provides an overview and results of the preliminary investigation interviews and pilot interviews. These interviews were conducted with respondents from different professional construction backgrounds representing various industry players. The background of the interviews with respect to objectives, scope and limitations, interview questions and the respondents' perceptions are discussed in detail. The pilot interviews

together with literature review in Chapter 3 resulted in the development of a conceptual framework of factors to improve ethics.

Chapter 6 presents the background of the questionnaire design and Phase 3 of the research process which is the questionnaire survey. Following literature review and industry input from the pilot interviews, questions were designed for the questionnaire. This chapter explains the background of questionnaire design; how questions in the questionnaire were constructed. Following this, the chapter then discusses the background of the pilot survey and the questionnaire survey with regards to their objectives, methodology and scope and limitations.

Chapter 7 expounds the survey analysis and discussion of results of the questionnaire survey which form the primary data of the research. The data was analysed using the SPSS (Statistical Package for the Social Sciences) software and the statistical tests performed are the test of reliability, frequency analysis, analysis of means and analysis of variance (ANOVA). It includes descriptive statistical results of perceptions between appropriate demography profiles of the respondents, such as years of working experience in the industry and type of organisation. The results of the analysis are adopted into the components and sub-components of the developed framework to statistically confirm them. This is then followed by a discussion on the overall results of the survey.

Chapter 8 gives an overview and analysis of validation interviews conducted with experts who are prominent players in the construction industry in Malaysia. The aim of the interviews is to validate the developed framework. The background of the

interviews with respect to objectives, scope and limitations, interview questions and results of the respondents' perceptions are discussed in detail.

Chapter 9 reports the conclusions of the research. It provides the main findings and significant contributions of the research to the academic world and most importantly to the construction industry in Malaysia and abroad. The limitation of the research is then outlined, followed by recommendations for the industry based on the research and further research on particular topics within the research or outstanding issues highlighted in the research.

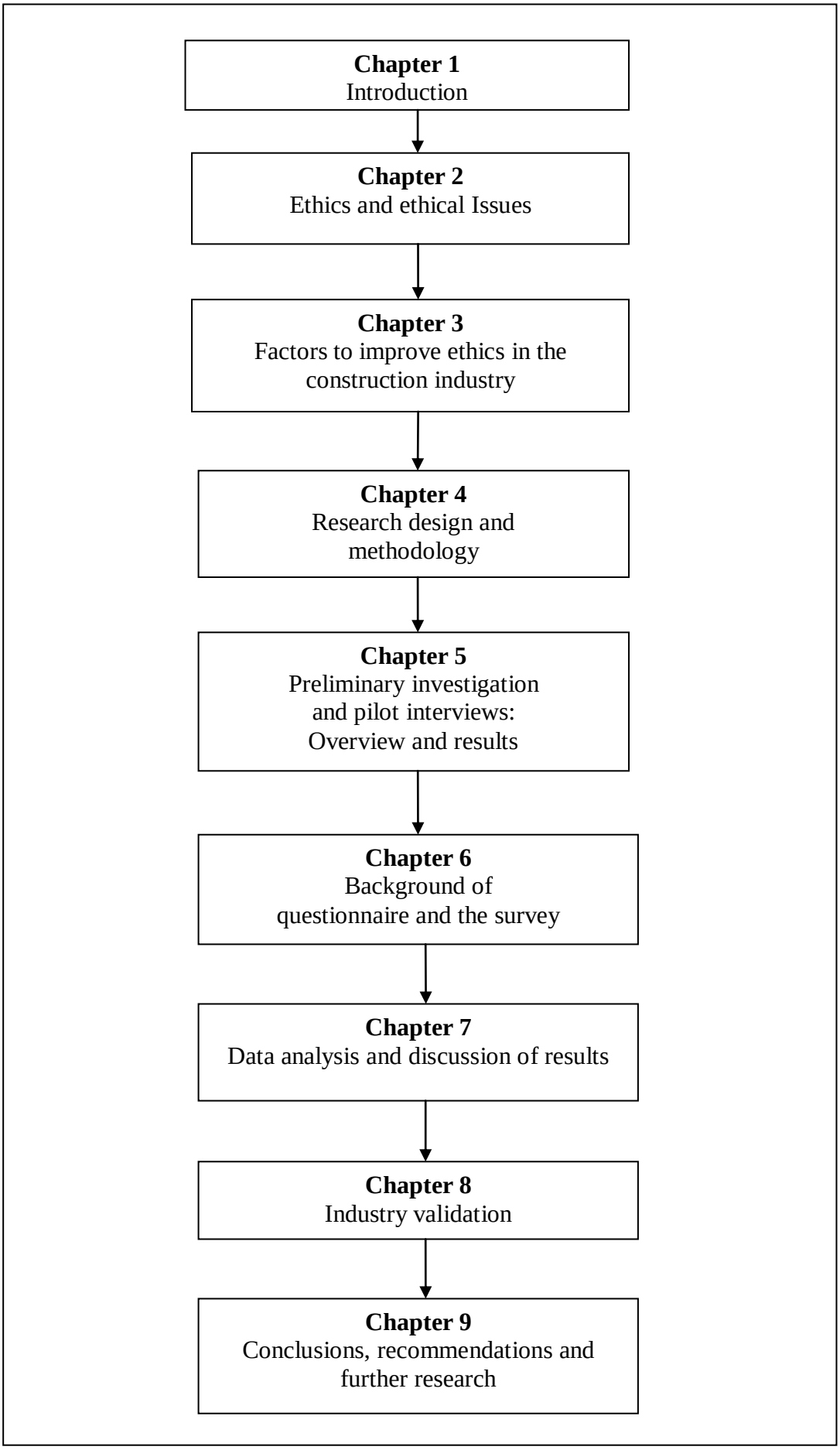

Figure 1.1: Thesis layout

CHAPTER 2

ETHICS AND ETHICAL ISSUES

2.1 Introduction

Modern society has become more and more sophisticated and complex. The subject of ethics is becoming a paramount importance in our everyday lives, especially to answer sceptics towards the practicality of embracing ethics; particularly, in the construction industry in Malaysia. According to Fan *et al.* (2001a), it would be a mistake to regard ethics as a purely academic study, since every person who is reflective and who is troubled by certain situations or dilemmas in his or her daily life, is to some extent, a philosopher of ethics.

The question is, why bother so much about ethics, let alone its consequences? Managers, whether in business or other professions, see first and foremost profit, economic opportunities, and the exercise of entrepreneurship. Why ask questions beyond that? Of course, if one is not interested in the starting point of why ethics is to be faced squarely, then one could also pretend to have no difficulty with the consequences of unethical behaviours. Such a person would see no justification for its study, see no problems, and ask no questions. It is not to be denied that this type of person can be found today, particularly in the construction industry where there is enormous pressure to make money (Suen *et al.*, 2007).

A distinct feature of the industry is the fragmentations of the industry, where different players, often with different objectives need to work together to complete a project. According to Toor and Ofori (2006), the uniqueness of the industry makes construction project management a distinct discipline as it poses considerable challenges in various

contexts. They present the taxonomy of construction industry challenges which comprises industry specific challenges, general business challenges and operating environment challenges that include socio-cultural, economic, technological, legal and regulatory, and ethical. They added that ethical challenges comprise fraudulent and unethical professional practices, including corruption in both developing and industrialised countries. Hence, it can be seen that the intrinsic complexity, uncertainty and dynamics of most construction projects create difficulties, be it technical or human factors.

The literature review begins with the concepts and key theoretical perspectives of ethics as it is essential to understand them first before embarking into ethical issues of the industry.

2.2 Ethics: concepts and principal theories

This section discusses firstly, the concepts of ethics with regards to the definition of ethics, profession, professional ethics and business ethics including a brief review of Islamic ethics; and later, the principal theories of ethics and associated concepts.

2.2.1 Ethics

The word "ethic" comes from the Greek word "*ethos*". Guttmann (2006) explains the Greek foundation for the word "*ethos*"; meaning habit or custom relating to morals. Greek, Roman and modern day philosophers continue to debate on the definition and the working out of ethics. Aristotle, Socrates, Immanuel Kant, the Dalai Lama, Mahatma Gandhi, and many others offer philosophies of ethics and ethical behaviour.

The maxims of Aristotle and Socrates are quoted by Hartman (2008); Aristotle says "ethics is the art of living well" and Socrates purports that "ethics is about improving one's soul; the best reason for being ethical is that it makes one's soul better and makes one a happier person than otherwise".

Guttman (2006) summarised the philosophies of Immanuel Kant, Dalai Lama and Mahatma Gandhi. According to him, Immanuel Kant thought that sacrifice, experience, personal interest, and theoretical knowledge could not serve as the basis for morals and ethics and deeds must be based on selfless interest and on a real sense of responsibility. He added that, Dalai Lama teaches that an act is ethical when it meets the Tibetan term of "*konlung*", meaning "something that comes from the depth of one's heart that fills one with enthusiasm and expresses one's total commitment to life. If we relate to others and to life thus, then we can speak about a real revolution, about an ethical evolution". Mahatma Gandhi lived his life based on two basic ethical standards: service to others and material simplicity (Guttman, 2006).

Before indulging further into the definition of ethics, it is appropriate to identify the purpose of ethics. According to Guttman (2006), the purpose of ethics is: i) to acquire mental powers that will enable one to overcome fleeting instincts and passions by means of preferring the general good over the bad, and ii) to develop one self to a level at which the decision to be moral or ethical will come from the heart and soul and does not have to be imposed by any outside power.

Many organisations and writers have attempted to define ethics in their own context whether business, organisational or professional as follows.

The definition of ethics relates to morals - as it is the branch of philosophy that deals with moral behaviour (Abuznaid, 2009). According to RICS (2000), ethics is the science of moral; moral principles or codes; and Guttmann (2006) defines ethics as the science of duty. Kang *et al*. (2004) defined ethics as the science of the moral in its simplest form.

According to Solomon (1984), the etymology of ethics suggests its basic concerns are: i) individual character, including what it means to be "a good person," and ii) the social rules that govern and limit our conduct, especially the ultimate rules concerning right and wrong, which we call "morality". Morality refers to whether something is right or wrong, good or bad (Abuznaid, 2009). In Malaysia, the Institute of Integrity defined ethics as a set of moral values and principles, which form the standards guiding the code of conduct of individuals, organisations and professions (IIM, 2004). Velasquez (2009) also related ethics as the "concept of morals" - one's ability to choose between right and wrong, good and bad, acceptable and unacceptable. Therefore, the basic idea of ethics seems to be the morality governing human behaviour to be right, good and proper (Kang *et al*., 2004).

According to Connock and Johns (1995), ethics is about fairness and deciding what is right or wrong - about defining the practices and rules which underpin responsible conduct between individuals and groups. Schemerhorn (2008) defined ethics as the code of moral principles that sets standards of good or bad, or right or wrong behaviour. Ethical behaviour is what is accepted as good and right as opposed to bad or wrong in the context of the governing moral code (Abuznaid, 2009). Ethical behaviour involves the way you act even when people aren't looking; and includes doing the right thing, showing concern for people and treating people right, being open and communicative,

and demonstrating morality in one's personal life (Trevino *et al*., 2000). Being ethical involves taking action to ensure that these practices and rules are applied consistently in all day-to-day business situations (Orme and Ashton, 2003). In this context, a more basic definition is given by Freeman and Gilbert (1988) whereby ethics is the conception of what is right and fair conduct or behaviour.

Perhaps, a more comprehensive definition of ethics of what has been discussed above is offered by Hong Kong Ethics Development Committee (HKEDC, 2003). According to them, ethics is: i) the study and understanding of morality, moral principles, and moral decision-making process, ii) the development of reasonable standards and procedures for deciding what is morally right and wrong, iii) a set of general moral belief, normative rules of conduct, a code, a standard or standards that govern what one ought to do when the well - being and rights of, or duties to oneself, others, or institutions are at stake, and iv) what one *should* do instead of what one *will* do in a particular instance, with all things considered.

Within the Islamic context, the term that is mostly associated with ethics is referred to in the Holy "*Qur'an*" as "*Khouloq*" (Beekun, 2004). The Qur'an uses several terms to describe the concepts of morals or positive values - "*khayr*" (goodness), "*birr*" (righteousness), "*quist*" (equity), "*adl*" (equilibrium and justice), "*haqiqah*" (truth and right), "*ma'ruf*" (known and approved), and "*taqwa*" (piety) (Beekun, 1997). As Islam is a "way of life", all these, are therefore applicable to every aspect of a Muslim's life including personal, family, social and business matters. Terms like goodness, rightness, justice, truth, right, and piety have been described as "*Salihat*" or goodness, and impious actions are described as "*Sayyi'at*" or evil (Abuzaid, 2009). Fortunately, in Islam the question of whether an act is considered a virtue or a vice is determined in the

Qur'an (Islamic law) and "*sunnah*" - literally meaning the beaten track of the Prophet, which is mostly derived from his "*hadith*" (sayings) and actions; there is no two ways about it (Alhabshi, 1993). Hence, there is already in place, in Islam, "what is morally right or wrong" and "what people should actually do", and Muslims should abide by them.

The literature of the meaning and concepts of ethics by the various writers, philosophers and religion have related ethics to right and wrong. It is seen that ethics is the thought and behaviour of "what is morally right or wrong" and "what people should actually do" and applied to everyday personal and work practices. This definition of ethics is used for the purpose of this research.

2.2.2. The "profession", "professionalism" and "professional ethics"

The term "profession" originates from the guild of Ancient Rome that once existed as big families or tribes engaging in a particular industry (Durkheim, 1992). It is derived from the Medieval Latin "*professio*" referring to the taking of vows upon entering a religious order (Grimshaw, 2001).

The "professions" have always been linked with the notion of "service" (Vee and Skitmore, 2003). Its responsibilities have been variously described as including the satisfaction of "an indispensable and beneficial social need" (Johnson, 1999); and a goal of service to the public (Fryer, 1997). However, the essence of a "profession" is more than "service". A profession is special training around a specific body of knowledge leading to an exclusive area of practice, the ideal of being learned, and a duty of social responsibility in how its members carry out their work (Grimshaw, 2001). According to Whitbeck (1998), professions are occupations that both require advanced study and

mastery of a specialised body of knowledge and undertake to promote, ensure or safeguard some matter that significantly affects others' well-being. Thus, a profession has been described by Appelbaum and Lawton (1990) as a group of people organised to serve a body of specialised knowledge in the interests of society. To put it simply, professions are those forms of work involving advanced expertise, self-regulation, and concerted service to public good (Martin and Schinzinger, 2005).

Freidson (1973) defined "professionalism" as a process by which an organised occupation, usually, but not always by making a claim to special esoteric competence and to concern for the quality of its work and its benefits to society, obtains the exclusive right to perform a particular kind of work, controls training for and access to it, and controls the right of determining and evaluating the way the work is performed. According to Oates (1993), professionalism should extend beyond the mere knowledge. He defined professionalism as the highest standards of values and laws, which not necessarily followed by the society; it also transcends the mere statement of ethics by applying these ethics to life. The concept of professionalism of a profession is largely summed up by Chan *et al*. (2002) as a high expectation in terms of technical skills, competence, and integrity of the professional. However, professionalism relates not only to the levels of education and qualifications of the workforce but also to the professional approach in the conduct of business activities (Raymond, 2008). Hence, it is no doubt that professionalism is considered necessary for the economic survival of all countries and for sustaining general quality (Duffy and Hutton, 1998).

Professionals are usually bound by a set of principles, attitudes or types of character dispositions that control the way the profession is practised (Vee and Skitmore, 2003). This has been termed "professional ethics" (McDowell, 1991). It ascribes moral

responsibility not to a person in general but to professionals practising in a particular profession (Ho and Ng, 2003). Therefore, professional ethics concerns potential problems confronting members of a profession or group in their impact on society, with the implication that fairness should be attributed not only to clients, but also colleagues, and the public (Johnson, 1999). In this sense, professional ethics concerns the morality of the behaviour of professionals in their day-to-day practice.

It is imperative to point out that professional ethics involves both moral and practical concepts. It is somewhat different from "ethics", even though it concerns the rightness of behaviour (Ho and Ng, 2003) and, can be properly analysed only against a set of social values and a conception of the general role of professions in society (Vee and Skitmore, 2003). This is so, since the normative definition of "professional ethics" is already tied up with more practical concepts and expectations from the public - like competence, responsibility, and willingness to serve the public (HKEDC, 1996). Hence, from the public's perspective, the general normative rules of conduct are now made more strict and specific to particular professions.

The building and engineering professions: engineers, architects, quantity surveyors, project managers and contractors, have the fundamental right of professional conscience (Martin and Schinzinger, 1996). Even though many individual businesses now have codes of ethics and the public increasingly demands ethical conduct of everyone involved in business, the public's expectations regarding professional behaviour are higher than their expectations regarding business persons (Jamal and Bowie, 1995). The ethical element in professional conduct cannot be ignored and the need for professions to be aware of ethical issues in the way they conduct themselves is an important element of their recognition (Grimshaw, 2001).

It can be summarised that "profession" relates to skills and knowledge in a specialised field which the members possess and should be used for the benefit of the society. "Professionalism" extends beyond the skills and knowledge of the profession; whereby it is expected that a high standard of work is carried out by the professions in terms of the previous said criterions expected of them. Professional ethics concerns the moral aspects of the professions - character, attitudes, responsibility, etc.. It has practical relationship with the professions in terms of their moral obligation and expectations towards the people that they work with - clients and co-workers; and most importantly to the public.

2.2.3 Business ethics

Businesses, professional organisations, as well as many universities have, for many years, attempted to address the issue of ethics in business. Business ethics refers to organisational ethics or management ethics. According to Velasquez (1982), business ethics is the application of our understanding of what is good and right to that assortment of institutions, technologies, transactions, activities, and pursuits which we call "business". To put simply, business ethics refers to values, standards and principles that operate within business (Desjardins, 2006).

Business ethics, as an applied version of ethics, typically involves two tasks: the normative task of providing justification for abstract standards of behaviour and the practical task of applying these standards to business conduct and concentrates on how moral standards apply particularly to business policies, institutions and behaviour (Velasquez, 1996). It is also defined as a specialised study of moral right and wrong as they apply to business institutions, organisations and behaviour (Velasquez, 2006). This definition of business ethics matches the definition of professional ethics given by Hong

Kong Ethics Development Centre (HKEDC) (1996) in the sense that professional ethics involves both moral and ethical concepts.

It is now recognised that the general concepts of ethics are applicable in business (Fledderman, 1999) on the grounds that business exists not solely to suit certain individuals, since it also serves society and meets collective and social needs (Cohen and Grace, 1998*)*; such as the promotion of sustainability and environmental aspects of the construction industry's activity (Fleddermann, 2004) which has an impact on society. However, it is up to the organisations' prerogative on how they define social responsibility as there are undoubtedly companies who are not interested in the society's opinion of their various activities.

A question then arises: Is there a balance between the companies' profit motive and the society's expectation? Rose (2007) quotes James Copeland, the former Deloitte and Touche CEO, about business ethics who stated that the only common denominator in financial and business failures seems to be unethical behaviour and a lack of character and integrity. Perhaps the answer lies ultimately with the leadership of the organisation itself. Waddock (2005) states that ethical problems have stemmed from the fact that our business leaders are hollow and lack appropriate moral and ethical standards. The role of leadership towards an ethical environment in the organisation will be discussed further in Chapter 3.

2.2.4 Ethical theories

Ethical theories address the philosophical foundations of what constitutes ethics.When philosophers speak of ethics, they mean it by a theoretical study; hence, the objects that are studied in ethics are theories. These theories, called ethical theories deal with

questions like how people ought to behave or what kinds of acts are moral. Generally, ethical theories can be grouped into two sets, namely “consequential” and “deontological”.

The word “deontology” is derived from the Greek and places emphasis on duties (Rizk, 2008). “Deontology” is also known as duty theories or “non-consequentialism”. Associated with the ideas of Immanuel Kant (1724-1804), a German Philosopher, the deontological system is based on the assumption that actions must be guided by universalisable principles and rules which apply regardless of the consequences of the actions (Internet Encyclopaedia of Philosophy, 2003). For Kant, the ‘‘moral person’’ is one of good will, who makes ethical decisions based on ‘‘what is right’’. From this viewpoint, nevertheless, an action can only be morally right if it is carried out as a duty - not as an expectation of approval or reward. Therefore, deontological ideas can produce effective codes of conduct as they are very much related to duty and rights.

Another deontological approach to ethics is the perspective of religion, which is a rule-based enterprise (e.g. the Ten Commandments). Here, principles and rules are believed to come ‘‘directly from God’’, and faith - not reason, intuition or knowledge - is the element that provides the foundation for a moral life (Hartman, 2005).

“Virtue” ethics is another type of deontological ethics, and refers to personal qualities that constitute the basis for a person to lead a virtuous, noble life. It is not a formal system of rules, but a set of personal traits that, if put into practice, will ensure that the ‘‘right thing’’ is done in an ethically complex situation (Velasquez, 2006). From this perspective, the fundamental issue is what character traits make a person a morally good human being (Velasquez, 2006) and this is determined by exercising judgement, rather

than applying a universal set of rules like in the Kantian model. "Virtue" theories stress the importance of developing good habits of characters such as wisdom, courage, temperance, justice, trustworthiness, respect, responsibility, caring, civic virtues, etc. which were emphasised by Plato, the Greek philosopher (Josephson, 2002). It can be seen that these ethical values can be the foundation for codes of ethics.

Consequential theories deal with the consequences of an action, which predict that an individual will act in such a way as to maximise his/her benefit for the greatest good for the greatest number of people, or minimise losses. "Consequentialism" is probably the most commonly adopted ethical theory in engineering and construction projects. In consequentialism, an activity is ethically right if the consequences of that activity are more favourable than unfavourable. As long as an activity produces some desirable results, it is considered ethically right (Internet Encyclopaedia of Philosophy, 2003).

Three divisions of "consequentialism" emerge (Internet Encyclopaedia of Philosophy, 2003):

- Ethical "egoism": an action is morally right if the consequences of that action are more favourable than unfavourable only to the agent performing the action.
- Ethical "altruism": an action is morally right if the consequences of that action are more favourable than unfavourable to everyone except the agent.
- "Utilitarianism": an action is morally right if the consequences of that action are more favourable than unfavourable to everyone. Also, an activity is right or acceptable if it maximizes total utility for the society or for the greatest number of people.

It can be said that “egoism” focuses on self-love and self-interest in assessing the morality of an individual action. However, “egoism” and “utilitarianism” focus on the same issue of an action and differ only in balance between individual good and social good.

One tool often used in engineering and construction projects in terms of consequential approach is a cost-benefit analysis which determines the feasibility of a project. The consequential approach is also seen in terms of funding methods in construction; where projects can be categorised as private sector, public sector and private finance initiative (PFI) projects. Each type of project has different ethical goals even though they all require favourable results in cost-benefit analysis as follows (Kang *et al*., 2004):

- Private sector projects are considered to have more concerns on owners’ interests than public safety, health and welfare, related to the ethical “egoism”.
- Public sector projects are on the other side of the private sector ones, having ethical “altruism” and “utilitarianism” as the dominant theoretical background.
- PFI projects that appear to have win-win strategy comprise all of the three theories - ethical “egoism”, ethical “altruism” and “utilitarianism”.

The ethical theories explained above are expounded in a clear-cut approach by Mitcham and Duvall (2000) where they reflect ethics as rooted in human behaviour. They illustrated the structure of human activity to encompass agents acting to produce outcomes or results as in Figure 2.1.

Figure 2.1
Agent, action and results (Mitcham and Duvall, 2000, p .22)

If the behaviour of the agent is influenced by the ethical character of the agent, then it results in a situation which they call a "virtue" ethics approach. If the activity is evaluated as right or wrong in its action, then a "deontological" approach is adopted. If the activity is judged in terms of its good or bad results, then a "consequentialist" approach is adopted (Mitcham and Duvall 2000).

According to Pojman (2004), there are two parts to the subject of ethics: theoretical and applied. The theoretical aspect, "ethical theory", deals with comprehensive theories about the good life and moral obligation. It analyses and constructs systems of thought in order to explain and orient agents to moral life, including a close analysis of concepts such as "right', "wrong", "permissible", and the like. The applied aspect, "applied ethics", deals with ethical issues such as questions about the morality of abortion, capital punishment, and as for the construction issues, amongst others, bribery and breaching of environment. Ethical theory and applied ethics are closely related. Pojman (2004) states that theory without application is sterile and useless, but action without a theoretical perspective is blind.

After reviewing the theories of ethics, it is appropriate that the next section of this chapter will elaborate on the applied aspects or "applied ethics" which deals with ethical issues.

2.3 Ethical issues

2.3.1 Introduction

Most unethical acts in business environments involve acts that affect three entities: the organisation, co-workers, or the customers (Peterson, 2004). Unethical conduct, is said,

does not eventuate from a person's upbringing, but rather is part of the process of learning practical business or being inducted into the practices (Sutherland, 1983).

The effects of unethical acts such as what we observed in government and business scandals, allow short-term progress - but from the inception of such a course of action, the chances of long-term personal or organisational success are low. Oganisations only have the opportunity to do business with the public, once, because once discovered, there are no repeat customers; a short-sighted view in today's competitive marketplace (Scamati, 1997). This highlights that increased awareness by the public on unethical practices is an important consideration. They are essentially ethical issues that challenge the profession and the industry in today's environment.

Ethical issues are those which relate to the grey areas between what is accepted as right and wrong (Stark, 1993). Ethical issues involve complex interactions between personal roles, professional affiliations, working relationships, personal qualities and individual preferences. According to Holian (2002), ethical issues includes difficulties in determining options, choosing between options and anxiety arising from perceived risks and consequences to do with human resource management, working relationships and professional-managerial role conflict. He added that they are ethical dilemmas which involve conflicts between personal values, maintaining working relationships and achieving organisational goals.

Hong Kong Ethics Development Centre (HKEDC, 2003) defined "ethical issue" as one which: i) affects other stakeholders; that is, those individuals or groups who have a vested interest in the issue, ii) entails a normative dimension of right or wrong, iii) puts into conflict well-recognised values, customs, mores, or accepted practices, iv) involves

the power to control over deciding the alternative among all options available, v) arises when all existing ordinances and codes fail to determine how the issue should be resolved.

The following sections discuss firstly the ethical issues in business, before identifying ethical issues in the construction industry. Similar to other industries, the construction industry is centred at being business oriented.

2.3.2 Ethical issues in business

Research has indicated and confirmed the types of ethical impropriety that exist in businesses. A survey by KPMG[1] Forensic Accounting has also shown dishonest and unfair conduct to be endemic (Weait, 2001). In a study on the nature of ethical issues of business managers in Hong Kong, Lam (2004) identified that the largest percentage of issues identified were related to bribes, which fits McDonald's (1995) observation that managers tend to think that ethics is concerned with bribery. Other nature of ethical issues identified by Lam (2004) is listed in Table 2.1.

Table 2.1: Nature of issues (Lam, 2004, p. 74)

Defined by law	Not defined by law
• Bribery, even by sex • Falsification/fraud • Commit crime, e.g. stealing • Discrimination • Embezzlement • Sexual harassment • Accounting irregularities • Cartel • Illegal hide trading • Illegal retaining salary • Money laundering • Pyramid selling • Tax evasion	• False information, concealing information, disregard client benefits, inappropriate selling • Misbehaviour against company rules; for example - disclose sensitive information, confidentiality, concealing information from company, stealing commercial information, ignoring supervisor's order • Personal - including making use of relations, breach of privacy • Abuse of authority • Fairness in dealings, including using threats, and others • Against life • Customer relations • Pornography

[1] KPMG is one of the largest professional services firm and one of the big four auditors in the world (Wikipedia, 2011).

In the Muslim World, according to Abuznaid (2009), business people are faced daily with ethical issues at work, and sometimes do not know how to deal with them. He pointed out that some of the issues faced by the management and employees include bribery, nepotism, stealing, lying, "fraud" and deceit, conflict of interest, quality control issues, discrimination, falsification of information, abuse of public funds, and environmental pollution.

According to Bologna *et al*. (1996), deceit, trickery, sharp practice, or breach of confidence, by which it is thought to gain some unfair or dishonest advantage, is the description of an unethical practice of fraud. Certain types of fraud seem to be by-products of our late era of the industrial age. For example, such types of fraud are collusive bidding, paying for substandard work, or un-needed ''change orders'' (Rizk, 2008).

In Malaysia, there is a prevalence of morally inappropriate but, generally acceptable business practices like bribery, gifts, "call girls", and cheating of customers (Zabid and Alsagoff, 1993). More dismal are the findings by Alam (1995) which showed business students in Malaysia are of the opinion that Malaysian businesses consider ethics as secondary. The competing pressure in Malaysian businesses takes charge on self-interest, with the wide prevalence of inappropriate practices, and flouting of codes by one's superiors due to poor enforcement; hence, inducing individuals to conform to prevalent ethical climate rather than dissent to it (Gupta and Sulaiman, 1996). Malaysian managers are also characterised by low "individualism", which are more likely to conform to informal pressures, and thus, less sensitive to ethical issues (Nyaw and Ng, 1996).

In a study carried out by Cyrill *et al*. (2008) on the current practices of middle management in public and corporate sectors in the Klang Valley, Malaysia; 61 % of respondent executives agreed that many unethical practices are common, because in their opinion, ethics and economics do not mix. Also, nearly 80% of respondents considered competition today is stiffer than ever and as a result many businesses are forced to resort to practices which are considered shady, but appear necessary to survive. They also found that nearly 60% of the respondents agreed that in order to succeed in business organisations, it is often necessary to compromise one's ethics. These statistics revealed the state of affairs in Malaysian businesses. Even though they would like to affirm their faith in the relevance of ethical behaviour for long term success in their business endeavour, practical realities in the contemporary business scenario sometimes require them to make compromises.

2.4 Ethical issues in the construction industry

The ethical issues highlighted by the end-users of construction have become a revelation of how serious the low standards of ethical practices are affecting the products of the industry and costing unnecessary losses. For example, in the US, unethical acts are a serious problem and estimated to cost the US construction industry up to $40 billion annually (Rick, 2005). In the US, a survey to gauge ethical practices and concerns in the construction industry revealed that i) few companies make ethical issues part of their mission statement (at least not to the point of drafting ethical codes); and ii) the construction professionals, whether they like it or not, will work with companies that are unethical ((FMI/CMAA, 2004).

The parties involved in construction projects are diverse with everyone having different business goals - project owners; consultant architects, engineers and quantity surveyors;

contractors, subcontractors, suppliers, manufacturers and others. Often this can lead to divergent competing nature and complicated relations which lead to unethical practices. Also, there seems to be a sense of 'powerlessness' among the construction professionals to improve ethics because they believe that this is the way it's done in this business (Egan, 1998), as it is always profit driven.

The risks associated with lack of focus on ethical issues for any construction company can range from loss of reputation to reduced orders and profitability. To enable companies within construction to manage these ethical issues effectively, a clear understanding of what the issues are becomes important (Kang *et al*., 2004). Ethical issues in the industry which have been identified by previous researchers are listed in Table 2.2. This table highlights that ethical issues in the industry are diverse from alcohol and drug abuse (Jackson, 2000) to the issues specific to construction project, for example: quality issues (RICS, 1993), defective works (Suen *et al*., 2007), and safety (El-Zein *et al.*, 2008).

Table 2.2: Ethical issues in the construction industry

Reference	Circumstances	Issues
RICS (1993)	Charges frequently made against professionals	• Poor service quality • Irresponsible servicing attitude • Professional negligence • Denial of fault
Pressman (1997)	Main types of unethical behaviour in architecture	• Concealing of construction errors and stealing someone else's drawing • Exaggerating experience and academic achievements in résumés and applications for commissions • Charging clients for work not done • Costs not incurred or overstated • False promises of advancement • Misleading clients in project management • Involvement in conflict of interest
Rabins (1998)	Issues traditionally covered in engineering ethics instruction in the USA	• Public safety and welfare • Risk and the principle of informed consent, health and environment • Conflict of interest • Truthfulness • Integrity and representation of data • Whistle blowing

Table 2.2: Ethical issues in the construction industry (continued)		
Reference	**Circumstances**	**Issues**
Rabins (1998) (contd.	Issues traditionally covered in engineering ethics instruction in the USA	• Choice of a job • Loyalty • Accountability to clients and customers • Plagiarism and giving credit where due • Quality control • Confidentiality • Trade secrets and industrial espionage • Gift giving and bribes • Employer/employee relations • Discrimination
Herkert (2000)	Ethical issues that are more commonplace in engineering	• Conflict of interest • Trade secrets • Gift giving
RICS (2000)	A comprehensive list which covers a number of important ethical issues	• Gifts/hospitality • Health and safety • Equal opportunity • Discrimination and sexual harassment • Conflicts of interest • Insider dealing • Money laundering • Disclosure of confidential company information • Financial transactions • Fair competition • Alcohol and drug abuse • Whistle blowing • Non-executive directors • Copyright and ownership of files • Standards in advertising • Protection of environment • Relations with local communities • Political and social behaviour
Jackson (2000)	Unethical problems both at the corporate and operational levels	• Improper or questionable bidding practices • Alcohol and drug abuse • Failure to protect public health • Safety; or welfare • Poor quality control; or quality of work • Discrimination • Harassment or favoritism • Abuse of client resources • Improper relations with clients and contractors
Vee and Skitmore (2003)	Unethical practices are related to:	• Fraud • Breach of confidence • Negligence
Suen *et al.* (2007)	Constructors' unethical behaviour	• Corruption • Overcharge • Defective works
El-Zein *et al.* (2008)	Issues in engineering practice which are essentially ethical problems	• Bidding processes • Personnel management • Construction safety
Note: i) Issues in engineering practice are included in this table, as civil engineering works (for example: roads, bridges, dams) and, mechanical and electrical engineering works (for example: telecommunication services - e.g.: telephone and lift installation works) are also part of construction works), ii) Engineering ethics instruction (education) is included in this table, as the ethical issues are normally identified from practice.		

Construction contractors have a reputation for unethical behaviour. In Hong Kong, the continuing role of contractors as champions of unethical behaviours is confirmed by Vee and Skitmore (2003). It was identified that the main problem is due to the high level of disputes between proprietors and builders (Pilvang and Sutherland, 1998). Their other generally poor behaviour has been said to have originated from the influx of new construction companies with new people who lack building construction ethics, with greed being one of the main factors leading to unethical conduct (Ritchey, 1990).

What is new and worrying, however, is the emergence of clients and government bodies as contenders in the unethical stakes. According to Vee and Skitmore (2003), this group of traditionally highly influential leaders in the development of construction industry practices seems to have moved dramatically in recent years from setting the highest ethical standards to a form of economic rationalism that is virtually devoid of any ethical considerations at all.

Construction professionals have also been involved in some cases of unethical behaviour where a number of surveyors and engineers have been found guilty of being dishonourable. For example, a case was revealed where housing blocks decayed at an unexpectedly speedy rate because the reinforced concrete was mixed with salt water and surveyors provided false information to their clients (RICS, 1999). In 1998, there were 15 foundation sites in Hong Kong where the piles were found not to reach the designated safe bearing stratum (Fan *et al*., 2001a).

Issues for the profession are called “macro” ethical questions in contrast to those for the individual, which are called “micro” questions. It is important that the ramifications are not only for the behaviour of individual professionals, but also for the profession as a

whole, and indeed, for the process of construction itself (Wulf, 2004). This concern is significant as the the industry is typically project based and highly resource intensive. Since construction projects are highly resource intensive, effective utilisation of labour, material and equipment are essential to the entire project process (Hauck and Rockwell, 1996). Therefore, ethical issues can occur throughout the different stages in a construction project. According to Uff (2003) the impact of ethics in construction occurs at three stages: i) documentation and tendering, ii) construction, and iii) post-construction.

The following sections will describe salient significant ethical issues in construction projects; which reflect not only issues of the profession, but also, the organisations that operate within the industry, and the industry as a whole. The discussion begins with the issue of corruption and bribery since they may occur at any juncture during the different stages of a project; and within any organisation or industry player. It is then followed by a discussion of issues that occur during pre-contract stage, during construction and other issues relating to construction projects; which is environmental issues.

2.4.1 Corruption

There are various definitions of the term "corruption", and, some writers have associated corruption with the public sector. Goorha (2000) defined corruption as an activity, outside the constitutional government process, involving the sale of publicly-produced goods and services by government employees in exchange for payments or bribes not sanctioned by the government. Okokgbule (2006) said that it is a device or strategy usually employed to sway people away from the right course of action, duty or conduct, either in the performance of their official duties, or in activities relating to economic or political matters. Therefore, not only public officials, but also the whole

public sector is creating opportunities for corrupt practices. According to Dion (2010), corruption is often observed in public-private sectors business relationships although we could also see the phenomenon of bribes in business settings, without the intervention of any public official. It can be seen that corruption can happen in any organisation, whether in the government or public entities or private sector.

According to Aguilera and Vadera (2008), corruption is a crime that is committed by the use of authority within organisations for personal gain. They added that organisational corruption is mainly committed for personal gain, although it could also include organisational gains, in some cases. Transparency International (2006a) defines corruption as the misuse of entrusted power for private gain. The "private gain" must be interpreted widely including gains accruing; i.e., to an economic actor's close family members, political party and in some cases to an independent organisation or charitable institution in which the economic actor has a financial or social interest.

In general, Malaysia has been the target of ongoing criticism for reportedly high levels of corruption and inappropriate business practices. Transparency International, which compiles an annual index of corruption around the world, ranked Malaysia at 60 out of 182 countries of the most corrupt country, with the corruption perceptions index of 4.3, on a scale of 1 (very clean) to 10 (most corrupt) (Transparency International, 2011).

According to the Transparency International Chairman, Peter Eigen, - "nowhere is corruption more ingrained than in the construction sector" (Global Corruption Report (GCR), 2005). He added that it is the characteristics of the construction sector that slant it towards corruption - the fierce competition for "make or break" contracts; the numerous levels of official approvals and permits; the uniqueness of many projects; the

opportunities for delays and overruns and the simple fact that the quality of much work is rapidly concealed over by concrete, plaster and cladding. In the face of its size and universality, the construction industry in Malaysia is also plagued with graft and malpractices, evident from numerous press reports (for example, The Star, 2011b, pp.2 Nation; The Star, 2012, p.10 Nation).

According to Abdul Rahim (2010) corruption in construction industry is divided into two categories: i) large scale or "grand" corruption and ii) small scale or "petty corruption". "Grand" corruption involves huge bribes and commissions given by companies, traders, contractors or any individual as "a contribution" to acquire any projects, purchase or for any transaction. "Petty corruption" is regarded as a "lubricant" or a "smooth means" paid by companies, traders, contractors or any individual to acquire a deal or contract; for example, in cases like evading tax, getting a licence or permit and forging a financial report.

Corruption in the industry is initiated by project participants at every level and in every phase of the process, and the professional advisers and consultants are the first line of attack as well as defence. The situation has been compounded by the fact that a low level of capital investment is required to set up construction companies, which in turn, allows easy entry into the industry by new, and sometimes, unscrupulous players (Zou, 2006). Also, commercial pressures, personal loyalties to one's own firm, and a desire "not to rock the boat", such as reporting corrupt practices to relevant authorities make this issue less clear cut (Contract Journal, 2005).

Much of the corruption that occurs is a result of the nature of construction projects and that of the process itself (Shakantu *et al*., 2000). According to a report in *Bina Integriti*

(Build Integrity, 2010), corruption in construction is widespread during i) pre-tendering; such as choice of supplies to be tendered, definition of technical specification, tender issuing and dispatch of tender, ii) invitation to tender; such as preparation of tenders, iii) due date for offer; such as evaluation of offers, contract award, delivery of supplies, provisional or final acceptance and contract execution. In fact, the ADB (2004) reports that in Sri Langka, whilst corruption exists in all areas of government activity, it is in the area of procurement activity that it is most rampant.

According to GCR (2005), the consequences of corruption in the industry are that it raises costs and lowers the quality of developments; and, the cost of corrupt contracting processes ultimately leaves developing countries saddled with sub-standard infrastructure and excessive debt. Transparency International (1999) underlines the effects of corruption to the industry, which are threefold. Firstly, it damages the developed and developing world, resulting in projects which are unnecessary, unreliable, dangerous, and over-priced. This can lead to loss of life, poverty, economic damage and underdevelopment. Secondly, it damages companies, resulting in tendering uncertainty, wasted tender expenses, increased project costs, economic damage, reduced project opportunities, extortion and blackmail, and reputational risk. Thirdly, it damages individuals, resulting in reduced morale, criminal prosecution, fines and imprisonment.

Corruption is an epidemic problem in the construction industry. It can occur at any stage but it seems that most corruption in the industry occurs at the stage where the project is being pursued by bidders in order to secure contract. It was also shown that corruption has negative effects to the individuals committing it, the industry players, the project itself, and, worst of all it can result in a unprecedented total cost to the project which means unnecessary waste of funds.

Therefore, action needs to be taken by all parties concerned to reduce the high cases of corruption. If ignored, then this would lead to the serious ills of corruption, such as underperformance, contract renegotiation, change orders, over-billing, and the non compliance of the contract secured (Othman *et al*., 2009). Dion (2010) fittingly sums up corruption in the construction industry where the reason ethical improvement seems such a long way off is that corruption and dishonesty are as entrenched in the industry as concrete and steel. Hence, members of the world's construction and engineering societies and organisations should join forces and take drastic measures into the war against corruption.

2.4.2 Bribery

One of the most frequently reported unethical practices in business is bribery. It is necessary to discuss "bribery" as this term has been interchangeably used by authors to describe "corruption". A person who is corrupt is open to bribery (Longman, 1976). Bribery is described by Whitbeck (1998) as the offering of payments or *inducements* to someone in a position of trust to get them to do something for the bribe payer to which the bribe payer is not entitled. It is also the offering of some goods, services or money to an appropriate person for the purpose of securing a privileged and favourable consideration (or purchase) of one's product or corporate project (Almeder and Humber, 1983, cited in Johnson, 1999).

So the question that is most perplexing is, what should be the guideline on the "inducement" issue? As with most activities with an ethical content, "grey areas" exist. These are between the delineation of actions that are termed "gift giving" and what can be defined as bribery in legal terms (Fleddermann, 2004). This situation is compromised when meals or gifts are no longer of low cost and the expenses of these

items are not shared equally and the possibility of abuse becomes large (Turow, 1985). Johnson (1999) asserts that the following two actions have to be satisfied to transform gift giving to the illegal practice of bribery: the person receiving the gift, i) may consciously or otherwise, be disposed, predictably, to favour the interests of the gift giver, and, ii) the gift must be of a non-token nature that it is reasonable to think that he may put the interests of the giver in a privileged status.

Where does the line fall between legitimate business gifts and illegitimate corruption and bribery? The Institute of Business Ethics in the UK states in its code that gifts and hospitality should only be given if they are consistent with the customary business practices, are not excessive in value and cannot be construed as being intended as a bribe (Elsberry, 1993). According to Cyrill *et al*. (2008), gifts may not be perceived as unethical; i.e., not being viewed as bribery: i) if they are not expensive, so could never be perceived as a bribe, ii) if gifts tend to be token value, iii) they should not be overly opulent, iv) if company logo appears, and v) if they are an essential part of business promotion.

Liu *et al*. (2004) suggest that the boundary between what is deemed to be polite, acceptable (even expected) gifts and corruption or bribery is fuzzy and culturally dependent. In this context, corrupt payment may take the following (progressively serious) forms: i) paying a person to do what they should do (according to their job/position) but to expedite matters; ii) paying a person to use their powers of influence over others to get something done by those others; and iii) compelling a person to pay (extortion) on the basis of threats of what will occur if the payment(s) is not made.

According to Abuznaid (1990), there are two kinds of bribes: the "lubrication" bribe and the "white mail" bribe. The lubrication bribe involves payment of a relatively small amount of money - "speedy money" - to lubricate the wheels of administration so that they can turn more quickly. The white mail bribe generally involves an elaborate system for concealing the use of large sums of corporate cash. This type of bribe is used to buy influence in high places.

In Malaysia, gift giving may fall within the ambit of the meaning of "gratification" as defined in Section 2 of Anti-Corruption Act 1997, if it satisfies the ingredients thereto. Section 2 of the Act provides that "gratification" means "(a) money, donation, gift, loan, valuable security property …..(b) any valuable consideration of any kind …..". Any gratification offered or given or accepted or attempted to offer or accepted, as an inducement to do or to abstain from doing or a reward for something done or to be done or otherwise is considered as an offence under Section 10 of the Act which is punishable under Section 16 (Government of Malaysia, 1997). Therefore, as far as the legal aspect of gift giving is concerned, it seems to indicate that "corporate" gift giving may turn to be a bribe if it is intended to put an obligation on the recipient. Thus, it may be argued that if the gift giving is intended to be otherwise for instance as a marketing tool or to strengthen business relation, it is still legal (Cyrill *et al*., 2008).

The practice of all kinds of bribes is forbidden in Islam. However, there should be differentiation between "*sadakat*" (donations), gifts and bribes. Gifts are encouraged in Islam because they help gain friendship. The "*hadith*" (Prophet Muhammad's sayings) by the prophet encourages the use of gifts saying "Give more gifts so you be better liked". However, bribes on the other hand are unethical since bribes are used to influence decisions (Abuznaid, 1990).

Certain practices such as gift giving in the public realm are an accepted tradition in many non-Western cultures, including Malaysia (Roslin and Melewar, 2004). For instance, in China, Yeung and Tung (1996) explained that, it is a common custom to give a variety of souvenirs, including money, to business clients. They explained that this practice, referred to as the "guangxi" exercise, is widely accepted in Eastern countries. It is a way of showing close personal relationships and respect in a group orientation. However, they added that it is often misinterpreted as bribery by Westerners. Thus, what is considered an acceptable business practice in one country may be considered unethical in other countries.

2.4.3 Pre-contract issues

2.4.3.1 Tendering practice

Most studies on ethical issues during tendering emphasise on: i) collusive tendering which is defined as illegal agreements between tenderers that result in seemingly competitive bids, price fixing, or market distribution schemes that circumvent the spirit of free competition and defraud clients (Zarkada-Fraser, 2000), ii) bid-cutting (May *et al*, 2001), iii) bid-shopping, cover-pricing, hidden fees and commissions and compensation for unsuccessful tenderers (Ray *et al*., 1999; Zarkada-Fraser and Skitmore, 2000), and iv) "withdrawal" (Zarkada, 1998), where a tenderer withdraws their bid after consultation with other tenderers.

According to Mason (2010), in the UK, construction firms were engaged in illegal anti-competitive bid-rigging activities on 199 tenders from 2000 to 2006, mostly in the form of "cover pricing". He added that the efforts of the Office of Fair Trading (OFT) to combat corruption culminated in fines totalling £129.2 million on 103 construction firms in England which were found to have colluded with competitors on building

contracts. This statistics revealed that ethical improprieties exist in the industry when bidders are trying to secure contracts.

Dishonesty and unfairness conduct in tendering practice include competitors overstating their capacity and qualifications to secure work; and overstating their experience and capabilities and falsification of qualifications (Vee and Skitmore, 2003). Lobbying to secure contract is another ethical issue during tendering. The use of lobbyist, while legal in most situations, carries a negative connotation and potential for abuse (Rubin *et al*., 2005) which can be a breeding ground for ethical breaches.

In Malaysia, another common ethical issue during tendering is the "Ali-Baba" practice, much related to the practice of "selling of licences**".** The word "Ali-Baba" derives from the names of two different races in Malaysia; "Ali" "(Malay) and "Baba" (from "Baba-Nyonya"- a Chinese descendant). From the researcher's observations and working experiences, "Ali-Baba" tendering practice occurs when company "A - Ali" tenders under its name, but, when they are awarded the contract, the work will actually be "given" and carried out by another company "B - Baba". Company "A" will normally accept a commission from company "B" based on a percentage of the total contract awarded or a fixed lump sum, which may inflate the price unnecessarily or reduce the quality of work due to "other charges" not in the tender price. This term is synonym to "commission earner" in the business context. Thus, company "A" will not be involved either in the project or contract management of the project - costs, overhead expenses, labour, and, plant and machinery aspects of the project; except, maybe when liaising with the client - on payment and contractual matters as "showing face" of who is the actual contractor being awarded the contract. This practice may have undesirable consequences on the quality of work, training and workers, and prevents continuity of

the working teams. Company "A" may have been awarded the contract based on previous good track record of experience and capabilities by contractor "C" who was "A's" "partner in crime" in a previous contract; hence, it creates a complex situation of who actually performs the "real and superior" work.

2.4.3.2 Lowest tender

In developing countries, selection of contractors and designers is almost exclusively done based on fee bidding and tendered price - which is one of the greatest barriers to improvement (Datta, 2000). Sadly, this traditional procurement practice is emerging as a key area for potential ethics abuses, also as a catalyst for change. One of these ethical abuses includes lowest priced tendering (Mason, 2010).

According to the Grove Report (2000), competent conservative main contractors are displaced in bidding competitions by those who are "gamblers" - thinly financed with low assets; thus, little to lose if they fail to meet their contractual obligations. This report pointed out the resultant problems generated by awarding contracts to these contractors: i) they usually deliver low quality work, and ii) less reliable than their counterparts, iii) unfair payment problems with their sub-contractors, iv) claims conscious, v) consume more government management resources through disputes and financial failure, vi) waste of public funds, viii) disputes also lead to lack of focus and control of projects. Thus, the risks and final costs are much higher than awarding to a more competent, but maybe higher tender sum in the first place.

The inefficiencies of traditional methods of procuring and managing major projects in the UK, in particular the fallacy of awarding contracts solely on the basis of the lowest price bid is highlighted in the following. Some firms have priced unrealistically low and

then seek to recoup their profit margins through contract cost variations arising from, for example, design changes, and other claims leading to disputes and litigation (House of Commons, 2001). This inevitably sees the final price for the work increasing significantly, with buildings often completed late.

Although price focussed low bid selections suggest monetary savings, they may not provide best value, or economical end results. According to Palaneeswaran *et al*. (2003), reasons for such shortfalls include i) differences in performance levels of contractors/consultants under various conditions; ii) many non-price attributes (e.g. capacity for faster construction and better quality) that could increase the "procured value" considerably and; iii) unwelcome adjustments (e.g. through claims) that might be resorted to by contractors/consultants to compensate for unrealistically low bids and/or improperly balanced risks allocations.

Government has a major influence as a client; resulting in high competition between contractors. The government's bureaucracy in tendering where strict agency procedures exist because of the prevailing values and perceptions of the surrounding conditions (especially due to public expectations) is another concern. This inevitably is a factor why contractors tender at a low price in order to secure contracts (Fox, 1999). However, owing to intense competition and bidding, some contractors are not capable of completing the projects that have been awarded to them because of unreasonably low bidding prices: "*there are some selfish contractors who bid at very low prices in order to obtain the contract since there is a tendency for the government to accept the lowest price rather than taking into consideration the experience and quality of work done by the contractors. It is better for the government to pay a little extra in order to get better*

quality work" - extract from an interview in a research carried out on procurement practices in Malaysia (Hui *et al*., 2011, p. 581).

Comments from Sidney, J. Hymes, manager of design/construction support services at Jacobs Civil Inc are most appropriate: "Considering the lowest qualified bid is the most unethical procurement practice ……. As we squeeze vendors, their profit margins have to come from somewhere…..Do we inadvertently force them to cut corners? (ENR, 2004). However, according to Mason (2010), the blame for unethical behaviour is at the door of the clients, who attempt to extract too much from their supply chains in terms of cost savings and forcing contractors to work under their profit margins which does not enforce fair reward. Datta (2000) rightly pointed out ten years before that the industry needs to educate and assist its clients and users to distinguish between "best value" and "lowest price".

The discussion has shown that acceptance of the lowest price bid does not provide value for money, in either the final cost of construction, or through the life or operational cost. In addition, "low bid" based selections have been common particularly in the public sector. However, inevitably, it is up to the clients to adopt better selection criterions of contractors for their projects, instead of just considering the lowest tender.

2.4.3.3 Conflict of interest

Conflict of interest is defined as an interest; for example, whether due to political, company, personal or community interest (e.g. neighbours and public) in awarding of contract, which, if pursued, could keep professionals from meeting one of their obligations (Schinzinger and Martin, 2000).

According to Langseth (2007), the other group of unethical actions related to conflict of interest starts with "old-boy networks" and "nepotism". Old-boy networks are structures which affect society, indirectly or directly, in decision making. Nepotism does not relate to the self-interests of an official directly, but to the interests of someone near him or her, such as a family member, a member of the political party, a tribe member or a member of the same religious group.

Harris *et al*. (2005) considered the three types of conflicts of interest. First, there are "actual" conflicts of interest which comprise objective engineering judgment. Secondly, there are also "potential" conflicts of interest which threaten to easily become actual conflicts of interest. For example, an engineer might find herself becoming friends with a supplier for her company. Although this situation does not necessarily constitute a conflict, there is the potential that the engineer's judgment might become conflicted by the needs to maintain the friendship. Finally, there are situations in which there is the "appearance" of a conflict of interest. This might occur when an engineer is paid based on a percentage of the costs of the design.

A typical conflict of interest in the industry is illustrated by Fleddermann (2004) as follows. A civil engineer working for a state department of highways might have a financial interest in the company that has a bid on a construction project. If that engineer has some responsibility for determining which company's bid to accept, then there is a clear conflict of interests. Pursuing his financial interest in the company might lead him not to objectively and faithfully discharge his professional duties to his employer, the highway department.

Ethical issues of conflict of interest in the industry may occur to any profession in any type of organisation in the industry such as consultants using their position for financial gain or clients awarding contracts to companies in which they hold interest and awarding of contracts to former employees and friends (Vee and Skitmore, 2003).

Avoiding conflict of interest is important for any profession working in the industry. Hence, it is imperative that codes of ethics of professionals should be very clear on the need to avoid situations of conflicts of interest as discussed above.

2.4.3.4 Insider trading

With regards to trading on shares, O' Hara (2001) refers insider trading to the practice of "insiders" trading on shares of a company for which they have privileged "material" information not available to the public, and for which they seek to gain pecuniary or other benefits. He added that insiders refer to: i) any person or group that is able to gain such privileged information about a company and can include directors, managers or employees of a company, or ii) persons who gain privileged information indirectly from such managers or directors in a more intimate capacity such as friends, family members, or close but external business associates, or iii) persons who have a contractual or supply linkage to such a company, such as those who print annual reports or stockbrokers who may inadvertently gain an information advantage.

"Insider trading" is akin to "insider dealings" within the construction industry. According to RICS (2000), insider trading is the ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways. For example, the "insiders" could be clients or consultant quantity surveyors revealing the cost estimate of a certain project to families or friends who are prospective tenderers before it is being

tendered out, or having a pre-agreement on the lowest tender price with them based on the information given in order to have an advantage over other tenderers.

Certainly, there are many important ethical issues in the industry, many of which relate to the disclosure of information by "insiders". Ethical issues of confidentiality and propriety information infringements in the industry include: i) improper information flow - internally and externally, within a practice, ii) revealing tendering information, iii) revealing product information, iv) clients using architectural drawings to construct buildings without paying the architect and v) consultants and builder discussing client details (Vee and Skitmore, 2003).

According to O'Hara (2001), the "mainstream" view in business ethics - related to "shareholder democracy"- is that the officers and directors of companies have a "fiduciary duty" to shareholders and no one else, and that the company should run in the pursuit of maximising shareholder wealth. Thus, he added that insiders should not perform self-dealing, bribery, direct competition or the use of confidential information. "Fiduciary duty" is a duty of a person in a position of trust to act in the interests of another person without gaining any material benefit, except with the knowledge and consent of the other party" (Boatright, 1997). Regardless, "fiduciary duty" should be imprinted in all professions in any business setting including the construction business.

"Inside" information can be gained from a multitude of sources from which such private information can be exploited for financial or other gains. However, ultimately, the clients are the one who are taking the risks, and therefore protection of their interests is fundamental (O'Hara, 2001). The importance of confidentiality is crucial to how an

organisation competes in the market place (Fleddermann, 1999), especially so in the competitive setting of the construction industry.

2.4.4 Issues during construction stage

2.4.4.1 Introduction

The construction industry has remained a very fragmented industry where different activities in the entire value chain of the construction processes are being undertaken by different parties, often undertaken in isolation and resulting in inefficiencies. In particular, the segregation of design and construction activities which is widely practiced does not encourage consideration for factors like construction safety, the practicality of construction methods, savings in labour utilisation and ease of maintenance (CIDB, 2008).

The traditional construction procurement system is the Design-Bid-Build routine where design and construction are completely separated, resulting in a crucial disadvantage where the contractor has no input into the design and the estimating process (Kang *et al*., 2004). So, the architect has to judge some aspects of the buildability of the project which depends on the contractor's experience and knowledge of construction methods and utilisation of resources (Morton 2002). This illustrates the typical situation that reflects business operations in construction.

Unethical practice in construction projects may stem from negligence. Negligence is the "failure to exercise that degree of care which, in the circumstances, the law requires for the protection of those interests of other persons which may be injuriously affected by the wants of such care" (Delbridge *et al*., 2000). Negligence as it relates to the construction industry may be ambiguous; however, the courts recognise this disparity

and judge negligence in the construction industry on the basis of professional judgment rather than craft (Pressman, 1997). The main sources of negligence are design negligence, design defect, production defect or a combination of these factors (Thorpe and Middendorf, 1980). Breach in duty of care on the part of professionals can result in negligence (Uff, 2003). According to Abdul Rahman *et al* (2011), failures on the part of professional personnel to exercise the duty of care has resulted in poor workmanship, inadequate safety standards on site and design negligence. In a survey by Vee and Skitmore (2003), ethical improprieties of negligence in the industry include inadequate safety standards on site and poor material quality and workmanship.

Those involved in the industry should realise the consequences of flouting safety guidelines, inadequate supervision, and cutting corners resulting in poor design as well as quality and shoddy workmanship. It is therefore appropriate that the ethical issues of site safety, quality and payment are discussed further in the following section.

2.4.4.2 Site safety issues

One of the impacts of construction activities is health and safety of workers and the public. According to Datta (2000), health and safety record of construction is perhaps the worst of any industry. People working in the construction industry are twice as likely to sustain a major injury and five times more likely to be killed than the average for all industries (Davies, 2001). Accidents seem to take place when either workers are not trained or working out of processes or procedure (Datta, 2000).

Poor safety performance is identified as one of the challenges facing any government and thus creating a poor image of the industry (C21, 1999). In Malaysia, accidents caused by poor safety management at construction sites such as the collapse of

scaffoldings, falling objects and falling cranes at construction sites has resulted in injuries and deaths, and damage to public property (Mohamad and Abdul Rahman, 2006). The rise in the number of fatalities within the industry over the last ten years has brought into focus the low priority placed by the stakeholders on safety. The number of fatalities in the industry is alarming; out of the total 73,858 industrial accidents reported by Social Security Organisation (SOCSO) in the year 2003, 4,654 were recorded in construction (Ibrahim *et al.*, 2010). From this figure, almost 2 % or 95 resulted in death, while 12.2 % or 566 resulted in permanent disability. The report also highlighted that the accidents and fatality rates in the construction industry stood at 3.3 % for 2003/2004, higher than other sectors such as manufacturing (0.7 %), transport (2.1 %), and services (1.1 %).

The effects of site safety should not be understated. Data (2000) cautioned that the industry must reflect not only on purely welfare consequences of a poor and health and safety record but, also to consider its cost in relation to lost work days - as accidents can account for 3% to 6% of total project cost, potential prosecutions, and even enforced closure of sites. However, besides financial loss, these incidents are serious resultants of neglecting the rules of social, ethical and legal obligation by the participants of the industry.

The public heath and safety ethical issues in the industry include: i) inadequate perimeter fencing on construction sites, ii) careless execution of demolition and construction, iii) storage of construction waste products offshore, and iv) inadequate protection from debris (Vee and Skitmore, 2003). Accidents can also occur outside the site boundaries which are normally caused by falling materials, broken pavements, damaged footpaths and dark temporary access ramps (Hadi, 2001).

Safety at site is affected by ethical misconduct. Nishgaki (1994) carried out an investigation of 35 cases of construction injuries that occurred between 1981 to 1985. During interviews with construction managers and workers, he found that "humanware"' accounted for much of the underlying causes of occupational accident recurrence. "Humanware"' is defined as a function composed of leadership, fellowship, and the interaction between them. His findings suggested that the major causes of occupational health and safety failure are inadequate safety education, inadequate instruction, poor housekeeping and "wilful transgression or misbehaviour". According to Nishgaki's research, employers' and employees' attitudes play a major part in safety on site. His research also showed that management commitment is responsible for the majority of the "humanware"' problem. According to Mitropoulos *et al*. (2005), advanced technologies and equipment used in the industry have dramatically improved working conditions and, as a result, construction accidents are mainly due to human failures and organisational factors.

Hinze (1988) found that injury rate tends to be higher on those projects that were competitively bid. It is common practice for contractors to discount their jobs just to win the tender and as a result occupational health and safety often suffers. Safety is sometimes found to be the first item to face cost cutting as the employers often believe that implementing a safety system will cost more. In addition, managerial focus tends to concentrate on production "at cost" and safety does not help production and therefore it suffers when a project runs over budget (Lin and Mills, 2001). According to Hinze (1988) safety is an important issue, but many people do not feel it is vital to the success of projects. Findings from research by Tang (1997) into the injuries on 18 construction projects suggested that the higher the investment in safety, the better the safety

performance. Therefore, cost has a role in reducing accidents and improving efficiency (Lin and Mills, 2001).

Research carried out by Musonda and Smallwood (2008) on safety issues in a Botswana construction industry revealed the following: i) there are a lack of management systems, procedures, and protocol in the construction industry; ii) hazard identification and risk assessment, prior planning, and record keeping were found to be inadequate in some organisations while in others they were completely non-existent. With regards to the extent to which clients and designers participate in the implementation of health and safety on construction sites, findings are that participation by clients and designers is low.

The discussion has shown that site safety issues cause serious problems in the industry in Malaysia (Ibrahim *et al*., 2010). It is also revealed that shortcomings in management systems, procedures, and protocol contribute to the current health and safety performance in Botswana, (Musonda and Smallwood, 2008), a developing country like Malaysia. Besides the technical factors, is has also been confirmed that the "humanware" factor and misbehaviour and attitudes (Nishgaki, 1994) are also contributing factors on the site safety issues.

2.4.4.3 Quality issues

Types of unethical conduct witnessed or experienced in the industry include "lack of quality" (Vee and Skitmore, 2003). The issue of quality has undoubtedly taken on a new sense of urgency and importance amidst a flurry of activities happening in the industry in Malaysia. An example of sub-standard quality is the flyover along the RM238 million, Middle Ring Road 2 (MRR2). It was closed to traffic after cracks were found in

31 pillars and structural movements were detected. Independent consultants identified negligence in design where improper anchoring of the columns to the main beams was the main cause of the cracks and repair works were carried out at an estimated cost of RM20 million (Mohamad and Abdul Rahman, 2006).

Quality refers to the correctness or appropriateness of an activity or fitness of an entity; it is compliance to a certain standard (Breja *et al*., 2011). In the construction industry, quality is defined as the totality of features required by a product or services to satisfy a given need (Parfitt and Sanvido, 1993). It is a guarantee of the products that convinces the customers or the end-users to purchase or use them (Chan and Chan, 2004). Pheng and Tan (1996) give a more complete definition of quality. According to them, in the context of construction, this means the ability to meet specifications, satisfy customers' needs and achieve project objectives. However, it is difficult to provide "quality", when clients select contractors and designers primarily based on cost and not value for money (Vee and Skitmore, 2003).

The meeting of specification is proposed by Songer and Molenaar (1996) as one way to measure to quality. They defined specification as workmanship guidelines provided to contractors by clients or clients' representatives at the commencement of project execution. When the technical specification is provided, there is a contractual responsibility, if not ethical, for the contractors to ensure that buildings are built in good standard and according to proper procedure.

Quality is a concern that is repeatedly cited by previous researchers. The factors highlighted are i) inadequate information, ii) poor communications, iii) poor care in workmanship, and iv) lack of site supervision (BRE, 1982; Building EDC 1987). The

types of problems found were related to traditional and well-established construction practices, and therefore the adoption of innovative practices was not in any way to blame (Building EDC 1987).

Low and Goh (1993) identified factors which have an effect on the quality of construction. Some of these factors are: i) poor workmanship by the contractors in completing the works which results from low tender prices, ii) the contractors pay more attention to completing the works on schedule and controlling the costs to within budget than to achieving quality in construction, iii) the design does not satisfy the relevant codes and standards; this has resulted in a large amount of remedial work for the contractors and delay in the completion of projects, iv) the contractors do not know how to establish a quality system to control the works, v) the materials chosen by the consultants do not satisfy the standards or the Building Control Authority. From the above factors, it would appear that the quality of construction work is dependent to a large extent on the attitudes of the contractors and consultants. Hence, the quality of the products is adversely affected if the parties to the contract do not carry out their duties properly. This also reflects the unethical conducts of the parties concerned which have an adverse effect on the quality of the works.

Palalani (2000) identified the causes for poor quality of work in the construction industry in Botswana, a developing country. The researcher has organised his findings according to the causes and the industry participants accountable for poor quality of work, by listing them in Table 2.3.

Table 2.3: Causes of poor quality (Palalani, 2000)

Industry participant/others	Causes
Government, professional bodies, contractor associations	• Absence of an industry-wide quality assurance system on site.
Contractors	• Maximising on profits • Lack of understanding of the requirements in instances where the documentation is inadequate • Where they are inadequately resourced for the project.
Contractors	• Employing clerk of works where supervision is not satisfactory because of lack of experience, qualifications and commitment to duty.
Political * One hopes that any intervention by Government should be the interest of the industry, not for political interest	• Pressures exerted on the industry by "artificial booms", particularly those that precede national elections. The booms stretch the industry's resources beyond limits leading to; ▪ Incomplete documentation due to time constraints, ▪ Programmes becoming unrealistic causing everything to be done quickly, ▪ Errors occur and there is not enough time to carry out proper checking. All these lead to delays on site when queries have to be answered and details revised.

Abdul Rahman *et al*. (2011) highlighted their concern on how professional ethics impact on the quality of construction works is Malaysia. In their survey with developers, consultants and construction firms; more that one third of the respondents are not very satisfied with the quality in construction industry in Malaysia. In addition, more than 90% of them agreed that unethical conducts contribute to quality related problem and a majority, 72.7% agreed that unethical conduct can be the main cause of poor quality. The respondents also agreed that unethical conducts will influence the effectiveness of quality management implementation system. Some claimed that unethical acts impacted on the effectiveness on quality checking and inspection.

Quality problems in the construction industry were primarily looked on as specific problems related to the site, building structures, production, financing and end-users, among others. The fact that poor quality standards still persist in the construction

industry seems to suggest that there is a much more fundamental problem than contemplated or acknowledged thus far (Pheng and Ke-Wei, 1996).

The discussion on quality issues reflect the unethical practice carried out by contractors and consultants alike and even the government - sacrificing quality of work for the pursuit of not only money, but also power. This has to be addressed appropriately, as the quality issue has also become significantly important in Malaysia; as more Malaysian construction and consultant firms are making their way overseas in search of new markets.

2.4.4.4 Payment issues

Examples of unethical conducts in the industry related to payment include i) inflating progress payment claims, ii) unethical use of variation orders and, iii) inflated loss and expense (Vee and Skitmore, 2003). Another form of unethical conduct is the claims culture (Mason, 2010). The advent of accountability in the construction industry may also increase the likelihood of accounting system-generated fraud such as false expense reports, false supplier invoices and other alterations of accounts (Bologna *et al*., 1996,). Johnson (1999) advocated that being honest and realistic is also said to be a fundamental aspect of professional integrity, especially when making claims and estimates.

In the Australian construction industry, the security of payment issue has been recognised as a persistent problem for those who perform construction work, or supply goods and services, particularly for sub-contractors (Brand *et al*., 2011). The term "security of payment" is a generic term used to describe the entitlement of contractors, subcontractors, consultants or suppliers in the contractual chain to receive payment due

under the terms of their contract from the party higher in the chain (NSW Government, 1996). The security of payment problem is the consistent failure in the building and construction industry to ensure that participants are paid in full and on time for the work they have done, even though they have a contractual right to be paid (Commonwealth of Australia, 2002). The unethical tactic of clients and contractors of unduly delaying payments or arbitrarily reducing the value of payments is designed to enhance their positive cash flow at the expense of those lower in the contractual chain (Brand and Uher, 2010).

A number of factors which make the security of payment problem significant and ongoing in the construction industry include: i) ease of entry into the industry, ii) the "multi-tiered" structure of contractual relationships on projects, iii) the comparatively low "profit margin to turnover" ratio compared to other industries with more fixed capital structures, iv) low capital backing and a heavy reliance on cash flows; and poor standards of ethical conduct (Cole, 2007).

A consequence of the chain payment structure in the industry is the repercussion of the failure of one party on the other parties; for example, the failure of the bank to support the client, the failure of the client to support the contractor, and the failure of the contractor to support the sub-contractor's work. These are examples of situations where all other parties are affected, each to a various degree ranging from loss of income to a full-blown insolvency (Khosrowshahi, 2000). Generally, those operating at or near the bottom of the contractual chain are generally less resourced than those higher up and so less able to bear anything other than short-term project delivery costs (Brand *et al.*, 2011). Hence, there is a high dependence on full and timely progress payments for financial survival (Uher, 1991).

When there is delay or default of payment by the client to the main contractor, an ethical issue that arises regarding payment for projects costs includes main contractors not paying and deducting subcontractors' fees without proper justifications (Vee and Skitmore, 2003). As a result, unnecessary withholding of payment by the main contractor to the sub-contractor will subsequently affect the cash flow of the sub-contractor.

The effect of late payment or non-payment for works normally contribute to reduced ethical attitude by the contractors and subcontractors resulting not only in inferior quality and poor workmanship of the works, but, may also delay progress of work due to cash flow problems (Vee and Skitmore, 2003). This illustrates that a delay or failure to make payments by one element higher up in the contractual hierarchy (from the client) can create significant financial strain on many more project participants lower down the chain and, in some cases, reduce cash flow to zero (Brand *et al*., 2011). If this occurs, the security of payment problem can quickly spread down the contractual chain (Commonwealth of Australia, 2002).

There are various reasons for late and incomplete payments being made. Some examples of contractor and owner-based reasons are that: i) the claim may not be totally justifiable or lacks full entitlement under the contract; the claim was lodged without full substantiation, ii) the claim was lodged after some contractual time bar, iii) the owner believes there is defective or incomplete work, and, iv) the processing time of a claim can take time to be evaluated carefully. It is also noted that there is the occasional owner and occasional contractor who are not "squeaky clean" or unethical; for example, a contractor may make an embellished claim, while an owner might delay or not make a payment in order to improve his own financial position (Carmichael, 2002).

Abeysekera (2002) highlighted that work first and then get paid, is an age old practice despite the fact that work is being carried out from the very first day. However, to receive payment, a substantial amount of work has to be done. This means contractors must find funds to purchase materials, pay wages, settle dues for services rendered, and for a host of other expenditure. This is extremely demanding as well as costly when contractors are short of funds. According to Odeyinka and Kaka (2005), the reason for all these artificial difficulties and cost increases is the time lag between payment and expenditure. It is this time lag between expenditure and payment that drives contractors to the brink of collapse, especially when it stretches beyond its elastic range. These deductions are very interesting as the authors have referred the delayed or non-payment to the time lag and optimum elastic range which will eventually break the contractor.

Payment issues also affect the consultants. According to Vee and Skitmore (2003), ethical issues with regards to late payment and non-payment of works to consultant fees include: i) developers falsely engaging consultants with the intention of not paying them, and ii) clients who asked for "upfront" work, then went to another consultant when the project started.

Clients are the paymasters, thus late payment and non-payment for works carried out by contractors affect their cash flow. The discussion has shown that their unethical practice towards payment have negative effects on the project team which involve the consultants, main contractors, sub-contractors (both nominated and domestic) and labour forces, and ultimately to the project itself.

2.4.5 Other issues

2.4.5.1 Environmental issues

The construction industry has shaped our lives more than anyone or anything else in the last century. This industry, unlike other industries is directly affecting the environment. Breaching environmental ethics is a conduct contributing to deterioration or destruction of air, water or nature. However, many of us do not realise the immense social impact and consequences of any construction project; positive and negative and sometimes unintended, often widespread and irreversible (Wulf, 2004). The application of Environmental Impact Assessment (EIA) score and the total number of complaints received during the construction can be used as an indicator to reflect the seriousness of environmental issues of a project (Chan and Chan, 2004).

The industry has been regarded as a major contributor to environmental impacts. According to Glass and Simmonds (2007), construction sites can be a major source of pollution and have an adverse impact on health, quality of life and the environment. For example, 14 million tonnages of waste have been put into Australia each year, of which 44% came from the construction/demolition industry (Songer and Molenaar, 1997). About 62-86% domestic productions of non-metallic minerals such as cement, clay and lime and so on in developing countries are consumed by the construction industry (Chan and Chan, 2004).

The construction industry, provides an important component of economic growth and social development, but has been the source of significant negative impacts. Environmental issues in the industry previously identified by various researchers and bodies are listed in Table 2.4. The table shows that construction projects can affect the environment in many different ways.

Table 2.4: Environmental issues in the construction industry

Reference	Circumstances	Issues
Hadi (2001)	General negative impacts from construction sites experienced by the local community	• Dirt
CIRIA (2002)		• Water pollution
Kukadia *et al*. (2003)		• Noise and dust
Vee and Skitmore (2003)	Breaches of environmental ethics identified in a survey in Australia	• Builders' failure to stop erosion • Contamination of the soil - acid sulphate leeching during construction • Unsolicited clearing of vegetation • Illegal dumping of building debris
Lee and Fong (2000), CIDB (2007)	Negative impacts upon the environment	• Soil erosion and sedimentation • Flash floods • Destruction of vegetation • Dust pollution • Noise pollution • Depletion of natural resources • Use of building materials harmful to human health

The construction industry lags behind other sectors in its response to the problems of the environment (Ofori, 1998). The issue of preserving the environment should be of even greater interest to developing countries since they face severe environment-related problems (UNCHS, 1996). In Malaysia, environmental issues include soil erosion and sedimentation, and others (Lee and Fong, 2000 and CIDB, 2007) as shown in Table 2.4.

According to Ofori (2000), developing countries face rapid urbanisation especially physical resources, which will be required to meet infrastructure, and building needs, which they must fulfil if they are to develop, as well as to raise the standard of living of their peoples. He added that the environmental problems of the developing countries

exist due to the lack of managerial experience, financial resources, and, legal and administrative system, necessary to deal with the issue through public and formal education, formulation and enforcement of "command and control" measures (legislation and regulations), as well as the devising and implementation of economic incentives - grants, subsidies and taxes.

The value and importance of environmental conservation and preservation are often overlooked by policy makers and town planners alike, contractors and construction professionals; who do not have "*arboriculture*" - the cultivation of trees and shrubs (Longman, 1976) training or qualifications, so it comes as no surprise when decisions are favourable towards construction projects. According to Vesilind and Gunn (1998), professionals, nevertheless, will look at the overall and aggregate net benefit; thus, diminishing the importance of harm to the individual and society.

Large-scale energy projects, including hydroelectric developments are an example of the often-conflicting positions on project validity and justification, which stem from the different value system of each of the stakeholders. In this particular example, the dilemma falls into four categories (Berube and Villeneuve, 2002):

i. conservation of natural resources *versus* satisfaction of essential human needs,
ii. increased production of wealth to support growing needs because they subsidise urban and industrial interests *versus* fair distribution of wealth and detriment to locally affected rural population,
iii. rights of small numbers of locally affected populations *versus* fair distribution of larger numbers of potential beneficiaries, and,
iv. standards relating to environmental and social standards of international donor and lending agencies *versus* standards of less-developed beneficiary countries

since they do not always apply the same stringent environmental and social standards to these countries as would be required in more advanced countries.

2.5 Summary

Ethics is essential for the development of the industry. In a general sense, ethics is concerned with the development of reasonable and universal standards of human conduct. In order to understand ethics and its significance towards the industry, this chapter has explained the concepts and theories of ethics and the application of ethics not only in theory, but in practical terms.

This chapter then continued with the ethical issues prevailing in businesses, generally and specifically in the construction industry. A general overview of ethical issues that occur in the industry is outlined, which is followed by a further discussion of some of the issues which are widespread and frequent. They are corruption and bribery; pre-contract issues such as tendering practice and accepting lowest tender, conflict of interest, insider trading; issues during construction, such as site safety, quality and payment issues, and other issues relating to construction projects; that is, environmental issues.

Unethical practices have created a poor image for the industry. They are ethical issues which are essential considerations in determining the tribulations that construction professionals and the industry have to solve and in identifying their solution. Therefore, the challenge ahead is to identify ways to prevent, if not, minimise unethical practices in the industry in order to improve ethics. To confront this immense challenge, the following chapter will explore factors to improve ethics in the industry.

CHAPTER 3

FACTORS TO IMPROVE ETHICS IN THE CONSTRUCTION INDUSTRY

3.1 Introduction

The industry has always alarmed the minds of the public when disaster strikes or certain accident-prone public infrastructure collapses. The public, trade and industry activities depend so much on the integrity of these structures. The society expectations of the works completed are good quality at reasonable cost, a timely delivery, safety and access to information on investigation on defective works and above all the ethics of the participants of the construction industry (Mahbob, 2005). The current ethical climate within the industry is the preconception of being ruthless and it has not had a very enlightened past when concerning ethics. This image has been built up after years of unethical practices in the industry and it has had a long slog in the past to change its image. It is therefore, time to move ahead to address these unethical concerns.

The rapid growth of the construction industry imposes continual demand for the efficient delivery of a wide range of infrastructure works, urban renewal and housing development. Previous studies have identified factors relevant and important in developing the industry especially in developing countries. In a grounded theory approach with international experts from Africa and Southeast Asia in the field, Fox (1999) indicated that the government's role is the most important influence on the construction industry development, followed by two generic factors: human "behavioural" factors and key resources; that is, human and technical resources. In Singapore, the motivators and enablers towards improving performance in the construction industry was identified as improving professional standards, skills levels, maintainability and quality of buildings (Ofori *et al*., 2004).

Fox and Skitmore (2003) identified six key factors for the future development of the construction industry which includes (arranged not in any significant order): i) long term vision and policy for industry; ii) basic resources and infrastructure (physical and institutional); iii) financial and human resources; iv) techniques and technologies supporting high production performance; iv) learning culture; and v) thinking the best and behaving the best - a best practice culture. Fox (1999) indicated that there is a link between "thought" and "behaviour". In the pursuit for industry development, the "thought" of wanting to achieve a best practice culture can influence us to adopt ethical "behaviours" or ethical "practices".

In the UK, the Egan report (1998) identified five key drivers for the cultural change of the industry. The five drivers are: i) committed leadership, ii) a focus on the consumer, iii) integrated process and team, iv) a quality driven agenda, and v) commitment to people. Even though the term 'ethics' had not been used, the said recommendations essentially call for a situation whereby all the stakeholders within the industry are committed to continuous improvement and more significantly, ethical behaviour. Such ethical behaviour is closely linked to business ethics and social responsibility and underpinned by the idea and the term, such as "commitment". One of the initiatives from this report is "respect for people", which ushered the construction industry on the threshold of ethics management (Kang *et al*., 2004).

In Malaysia, the government has taken a more pro-active step through the establishment of Institute of Integrity Malaysia, and, formulating the National Integrity Plan (NIP) (Institute of Integrity Malaysia, 2004). These developments have an impact on the construction industry, being one of the prime movers of economy in Malaysia; particularly towards improving the industry's tainted image of corruption and other

unethical practices. As a result, Construction Industry Development Board (CIDB) in collaboration with the industry's stakeholders formulated Construction Industry Master Plan (2005-2015) consisting of seven Strategic Thrusts, whereby the Second Thrust is to "strengthen the construction industry image" through one of its significant agenda; "Professionalism - enhancement of professionalism is key to the improvement of the image of the industry" (CIDB, 2005a).

This literature review will present an overview of ethical models and various practices and concepts of general ethics management in business. A holistic approach is then taken to develop a conceptual framework of factors to improve ethics in the industry.

3.2 Models in ethics

According to Gibbons (1991), the ethics question warrants exploration on several levels at the:

- Macro/professional level - which focuses on the ethical rightness of the system,
- Corporate level - with reference to its decisions that impact others, and
- Level of the individual within an entity.

Lawton (2005) proposed that different spheres of ethical values and action interact and reinforce each other, as shown in Figure 3.1.

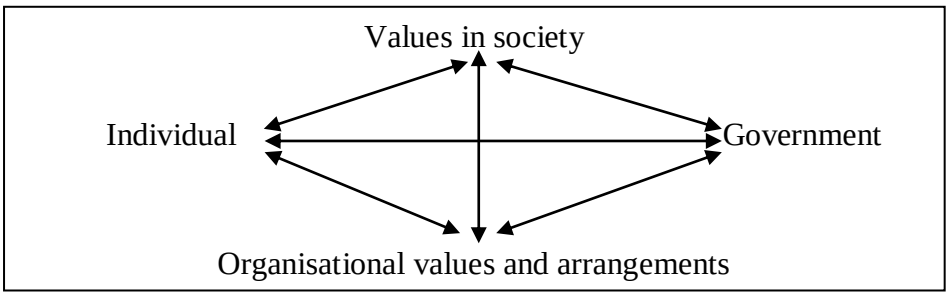

Figure 3.1: The interplay of ethical values (Lawton, 2005, p. 241)

Lawton (2005) also suggested that the causes of ethical and unethical behaviour will result from the balance between the dimensions of an individual, values in society, government and organisational practices as shown in Table 3.1. He added that a balance between the complex set of mutual relationships involving individual, organisation, government and society will reflect "best practice in ethics".

Table 3.1: Causes of ethical behaviour (Lawton, 2005, p. 242)

Individual	**Values in Society**	**Government**	**Organisational practices**
- Predisposition - Opportunity - Fear of sanctions -Professionalism -Peer pressure	- Culture - Education - Religion - Economic system	- Power - Leadership - Commitment to public interest - Extent of "state capture"	- Recruitment and promotion - Ethos - Targets - Controls - Rules - Leadership

People normally define right or wrong by the nature of the act. Moral actions are viewed as just and fair, while immoral behaviour is considered dishonest and unfair. In Islam, however, there are clear-cut factors that affect ethical behaviour. They include i) legal interpretations, ii) organisational factors, iii) individual factors, iv) social factors, v) the environment, and vi) the manager (Abuznaid, 2009). Figure 3.2 shows the overview of determinants of individual ethical behaviour in Islam.

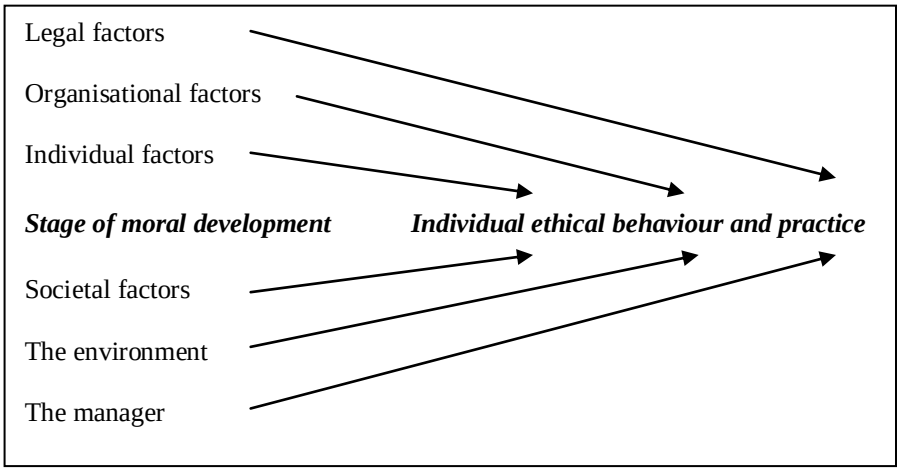

Figure 3.2: Overview of determinants of individual ethical behaviour in Islam (Abuznaid, 2009, p. 281)

Stead *et al*. (1990) identified five key factors which are instrumental in understanding ethical behaviour, which are: i) individual factors, ii) ethical philosophies and decision ideologies, iii) ethical decision history, iv) organisational factors, and v) external forces. Fig. 3.3 demonstrates the relationships among the five key factors. The initial linkage reflects the relationship between the individual factors (personality and socialisation) and the development of ethical philosophy and decision ideology. In essence, one's personality and background influence his or her ethical philosophy and ideology, which in turn influence his or her ethical decision history. Therefore, one's background will likely influence his or her ethical decisions. As the individual enters and gains experiences in an organisation, his or her ethical behaviours are influenced by managerial philosophy and behaviour, the reinforcement system and the characteristics of the job itself. These organisational factors, collectively, influence the individual's ethical behaviour. These factors do not exist in isolation, but are heavily influenced by outside forces, such as economic conditions, scare resources, competition, political and social institutions (Suen *et al*., 2007).

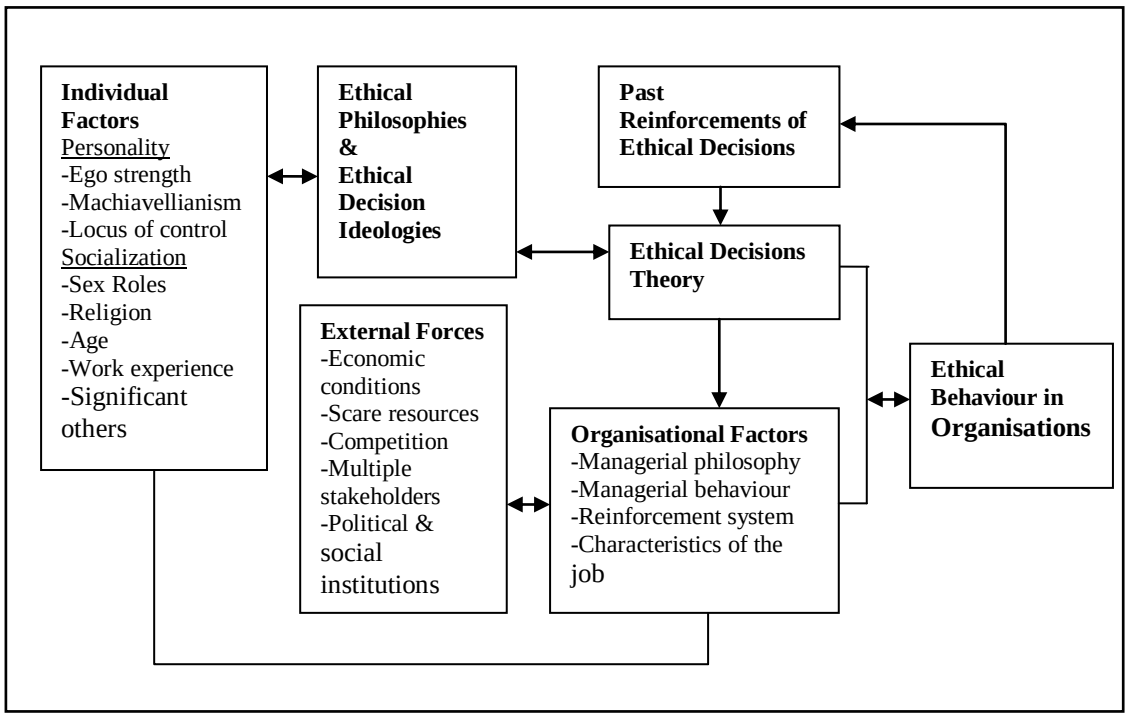

Figure 3.3: A model of ethical behaviour in business organisations (Stead *et al*., 1990, p. 237)

Other concepts of framework in ethics identified by previous researchers are summarised in Table 3.2.

Table 3.2: Concepts of framework in ethics

References	Circumstances	Factors
Sharp (1994)	In order to raise awareness of corporate and individual responsibility, the prerequisite aspects are:	• Education • Leadership • Organisational systems and decision processes • Auditing and controls • Penalties
Stajkovic and Luthans (1997)	A person's perception of ethical standards and subsequent conduct is influenced by the following factors: Even from a cross-cultural perspective, these key antecedents (background) influence the ethical standards of people and organisations.	• Institutional factors, e.g. ethics legislation • Personal factors, e.g. moral development • Organisational factors, e.g. code of ethics
Orme and Ashton (2003)	To develop the kind of environment that promotes ethical development, it needs:	• A structure • A policy • A code of practice or a cultural understanding of the rules • Individuals • Company values • Senior managers who value ethical behaviour

In Malaysia, the National Integrity Plan identified five factors affecting integrity[2] which are: i) individual, ii) leadership, iii) systems and procedures, iv) structure and institution and v) culture (IIM, 2004). In order to strengthen the management integrity of the administrative system of the Malaysian government, the Integrity Management Committee has been set up at the federal, state and district levels, which has eight terms of reference. These terms of reference are i) legislations, ii) system and work procedure, iii) noble values and ethics iv) code of ethics, recognition, v) internal control, vi) investigative and punitive action and, vii) rehabilitation.

[2] Synonyms - honesty, truth, truthfulness, honour, reliability, uprightness.

The literature review discussed above illustrates that a framework in ethics depends on a number of common component factors as in Table 3.3.

Table 3.3: Framework in ethics: common component factors

Components	**Reference**	**Factors**
Personal or individual	Abuznaid (2009), Gibbons (1991), (IIM, 2004), Lawton (2005), Orme and Ashton (2003), Sharp (1994), Stajkovic and Luthans (1997), Stead *et al*. (1990).	Professionalism, personality and socialisation, education and moral development, religion, work experience.
Organisational	Abuznaid (2009), Gibbons (1991), IIM (2004), Lawton (2005), Orme and Ashton (2003), Sharp (1994), Stajkovic and Luthans (1997), Stead *et al*. (1990)	Leadership, company values systems and decision processes, code of ethics, recruitment and promotion, controls, rules, reinforcement system, auditing and controls, penalties.
Institutional	IIM (2004), Orme and Ashton (2003), Stajkovic and Luthans (1997).	Ethics legislations, code of ethics
Systems and procedure	IIM (2004), Orme and Ashton (2003), Stead *et al*. (1990).	Structure, system and work procedure.
Government	IIM (2004), Lawton (2005).	Power, leadership, legislations, policy.
Other external forces	Abuznaid (2009), Lawton (2005).	Societal factors, the environment, stakeholders, commitment to public interest.

The process of construction projects offers an excellent example on how the above factors come into play for several reasons. In the first place, the construction sector being one of the pillars of any economy has proven that project delivery within a short time is possible with the concerted efforts of individual members from various organisations representing the project team. Secondly, the construction process is typically characterised by its temporary multiple organisational setting where construction professionals from different backgrounds with different skills and talents join together to achieve the same goal. They are under the constant pressure to abide by what is considered acceptable ethical behaviour within the constraint of systems, controls and penalties that exist in the organisation, industry and government; and also

commitment for client or public interest. Hence, relating to the above mentioned factors, the following section will discuss the development of a framework of factors to improve ethics in the construction industry in Malaysia.

3.3 Factors to improve ethics in the construction industry

The following sections will explore eight components to improve ethics in the industry. They are i) individual factors, ii) professional training factors, iii) organisational factors, iv) industry factors, v) system and procedure in the construction industry, vi) environmental ethics, vii) legislative enforcement and viii) accountability and customer satisfaction.

3.3.1 Individual factors

3.3.1.1 Introduction to ethics education

The quality of ethics can create a stable structure for building personal and professional success of an individual. Early education experiences and family influences are going to have the most impact on the integrity of individuals who will be future business leaders and their willingness and ability to be value driven (Bishop, 1992). According to Abuznaid (2009), some of the factors that affect one's ethical behaviour include stages of moral development, personal values and personality, family influences and pressures, expectations of relatives and friends, peer influences and expectations resulting in *wasta* (nepotism which is unethical), previous personal life experiences, and situational and societal factors.

The question is, do we develop our values through experience and education, or are they inherent from our early development? Plato perhaps anticipated this controversy when

he asked Socrates whether virtue is acquired through schooling, practice or nature (Halfond, 1990).

Some people believe that moral foundations for deciding what is right and what is wrong are formed in childhood, before even the age of six and eight, and nothing in later life significantly changes this moral foundation. While most moral values are learned in early life, there are several sound reasons why people should continue to study ethics. Some of the reasons might include the need to know what to do and decide to do it, and personal commitment to choose what is right, and this continues to develop as one grows. Some others believe that the study of ethics will definitely lead to ethical behaviour (Abuznaid, 2009).

Learning the basic principles of ethics constitutes the first stage in the process of knowledge; the key component that shows a person's ethical sensitivity but also generates awareness with regard to the various ethical perspectives and various ethical challenges (Fuchs and Hofkirchner, 2005). Ethical teachings should lead individuals to acquire the capacity for formulating a process that helps them arrive at their own decisions. In terms of moral theory, ethics training should culminate in an individual internalised action-guided code (Rizk, 2008).

Fox and Skitmore (2003) uphold the importance of individual values; in particular, ethical conduct, as an essential element in developing a better practice culture in the construction industry. According to Orme and Ashton (2003), ethics need a structure - they need a policy, a code of practice, or a cultural understanding of the rules. However, they also need individuals who can differentiate between right and wrong, people who can make difficult decisions and are assertive enough to make a stand by

the decisions they make. The discussion above shows that ethics in individuals may be developed from a very young age and can be acquired through the first stage of learning, that is through education.

3.3.1.2 The religious essence

Religious and moral education breeds and enhances individual knowledge and is a constitutive aspect of all social self-organisation (Fuchs and Hofkirchner, 2003). With divine scripture as a guideline, individuals will be helped to take sequential steps toward higher moral reasoning (Rizk, 2008).

Ethical teachings of most religions are largely compatible with each other and with secular views. Religious imperatives on ethics reflect a steady evolution: God revealed the truth of monotheism through Abraham, the Ten Commandments were revealed to Moses, Jesus taught that we are to love our neighbours as ourselves, and Muhammad explained how we were to love our neighbour (Rizk, 2008). Law, as well as ethics, was considered inseparable from religion; every offence represented an act against the name of God (Lewis, 2001).

In Islam, Allah emphasises the ethical guidelines as being outlined in the Holy Qur'an. These guidelines govern the Islamic code of ethics relating to a person's daily life and business dealings. Muslims are required at all times to behave Islamically because Allah himself is watching their practices (Abuznaid, 2009). Islamic ethical principles will determine individual choices, based not only on profit maximisation, but also on the maximisation of social welfare (Pramanaik, 1994). Just as the religion of Islam requires individuals to adore God, so too do the social system and the ethics of Islam regulate the corporate or organisational life of individuals; it is made clear that each person is

responsible for his actions (Endress, 1998) and will be called to account for those actions. Ethics should therefore be reflected in a Muslim's behaviour in every aspect of his or her life.

3.3.2 Professional training factors

3.3.2.1 Undergraduate ethics education

As reiterated by Chan and Chan (2002), most would admit that professional value, integrity and competence of construction professionals would be developed deeply and firmly during their professional education and training in universities. This necessity was highlighted by Bishop (1992) who urged that universities should take a critical look at their role in the ethical development of future professionals and to assume a leadership role in addressing society's conscientious professional decision making and actions. He added that universities should practice what they preach with regard to being responsive to environmental forces as the environmental demand for universities to contribute to ethical practice is being heard in an increasing and resolute voice. Egbu (2004) confirms that more is needed on the education and training of construction personnel and that these education and training should reflect the nature of ethical scope as a very complex social dimension.

Civil engineers are also required to have a broad based undergraduate education. According to Roesset and Yao (2000) civil engineers must be able to work in teams, communicate well, work from a system approach and, within the context of ethical, political, international, environmental and economical considerations. In the US, the Accreditation Board of Engineering and Technology recommends the study of ethics so that students acquire an understanding of professional and ethical responsibility (Bucciarelli, 2008). In a survey on "Future global visions of engineering education";

high ethical standards and a strong sense of professionalism comes in third ranking out of seven successful attributes for the engineering education graduates in 2020 (Sunthonkanokpong, 2011). Such concerns also apply to other professional disciplines in the industry. In the US and Hong Kong, concerns on unethical and malpractices in the industry have given rise to the recent emphasis on the inclusion of ethics in construction curricula (FMI/CMAA, 2004 and HKEDC, 2003). Ethics should be studied because it is important, both in contributing to safe and useful technological "products" and in giving righteous meaning to the construction professionals' endeavours.

The purpose of teaching ethics ought to be that of stimulating the moral imagination, developing skills in the recognition and analysis of moral issues, eliciting a sense of moral obligation and personal responsibility, and learning both to tolerate and resist moral disagreement and ambiguity (Sims and Sims, 1991). According to Herkert (2000), teaching engineering ethics can achieve at least four desirable outcomes: i) increased ethical sensitivity, ii) increased knowledge of relevant standards of conduct, iii) improved ethical judgement, and iv) improved ethical will-power (that is greater ability to act ethically when one wants to). These positive outcomes should initiate construction related programmes to provide ethics courses in their curriculum.

A review of the literature examining whether college-level ethics courses and/or courses in which ethics is incorporated into course content have an impact on attitudes towards ethics shows positive results. However, most ethics courses are conducted in business related courses such as in business course (Glenn, 1992) and accounting courses (Hiltebeitel and Jones, 1992, and Kerr and Smith, 1995). College students' thinking evolved from a right and wrong conception of ethics at the beginning of the semester to a more flexible and enlightened approach at the end (Carlson and Burke, 1998). The

course in business ethics improved students' abilities on recognition of ethical issues (Gautschi and Jones, 1998). Eynon *et al*. (1997) found that taking a course in ethics had a significant effect on attitudes towards ethics. There were also significant improvements in the moral reasoning skills of students after they sat in an engineering ethics course (Self and Ellison, 1998).

However, education in professional courses at the undergraduate level has always posed a challenge to both educators and to professional bodies since the needs of the professions and the vision of the educators do not necessarily coincide (Chan *et al*., 2002). The real challenge in teaching ethics to construction students is to provide an introduction to the basic issues in construction issues, with emphasis given to the ethical/moral problems within the construction business setting and to develop a set of moral values and also problem solving technique, and the students must be encouraged to develop a critical judgement rather than merely digesting other views to reach his or her own answers (Robertson, 1987). There is a need to review the provision of professional ethics-related subjects or modules to construction related courses during the academic tenure of the professional to improve the knowledge of professional ethics (Vee and Skitmore, 2003). Thus, the educational setting is an ideal place to practice ethics as this environment helps builds tomorrow's society.

Ethical knowledge is a fundamental foundation of a sustainable society. According to Bishop (1992), education serves to reinforce existing values and encourage their application. Clearly, educational institutions cannot accomplish the mission alone. It is unlikely that any educational intervention will result in a complete overhaul of a student's ethics. Therefore, in order to improve professional standards, there is a need to

foster an ethical culture by enhancing education and training on ethics; not only for "construction students", but including "practitioners" (Suen *et al.*, 2007).

The discussion has emphasised that ethics related courses are recommended to be introduced early in college/university as the first step to help mould the standards of the professional behaviour in the industry. However, it is important that the education and training process in ethics does not stop at college or university, but should also continue during the professionals' working life.

3.3.2.2 The role of professional bodies

The greatest imperative of professional institutions is their long-term role to ensure that the community receives value in the provision of professional services. Public status and maintenance of skills, ethical standards should remain the main objectives of professional institutions. The president of the Australian Property Institute affirmed that one of the roles of the institute is to "act on discipline matters more quickly and more vigorously" in the interest of other members and the community (Mills *et al.*, 2005).

Professionals who are essentially "individuals" come to work with different values, good and bad, which results in ethical and unethical practices. Therefore, the professional bodies must take the lead in ethical behaviour. According to Friedson (1973), one of the first steps in promoting ethical behaviour of professionals is to ensure that the leaders of the professional community propound the importance of ethical conduct.

Important characteristics of a professional group are of autonomy and discipline and a great capacity for self-development and self-regulation (Bergenhenegouwen, 1996).

These are based on a professional statute, which in most cases has the following characteristic: providing services to members in order to help them develop their own professionalism; for instance, establishing certain codes for adequate performance and ethical conduct in a specific profession (Webster, 1991).

3.3.2.2.1 Code of ethics

In more recent times, codes of ethics or codes of practice have provided guidelines for the professions in relation to implementing integrity, accountability and efficiency in the workplace (Small and Dickie, 1999). One can argue that professional codes bear a close comparison to organisations' ethical codes. After all, both types try to guide the behaviour of individuals or organisations by means of moral guidelines. However, there is a distinction between corporate codes of ethics which is developed within an organisation (*discussed in section 3.3.3.2: Code of ethics in organisations)* where the sphere of influence is that of the organisation, and professional codes that seek to regulate and guide members of a professional body (McDonald, 2009).

The essence of professional ethical duties is that they are owed to persons who may be outside the range of those to whom legal duties may be owed. The reference to "the public interest" is reflected in codes of conduct issued by many of the professional institutions in the construction field (Uff, 2003). According to Grimshaw (2001), professional codes have been shown to be useful over and above business codes; they are preferred by members and have a wider credibility. He added that they provide a useful lever for professional managers to resist unethical demands from clients where business needs clearly conflict with the public interest.

According to Tucker *et al*. (1999), the most frequently cited reason for having an ethical code for professional associations were to: i) provide guidelines to members, ii) enhance the professionalism of members, and iii) enhance the image of the institution. Nevertheless, it appears that, comparable to ethical codes, professional codes have foremost a behavioural purpose (Pater and Van Gils, 2003). This was agreed by Peppas (2003), where according to him the professional association intends to enhance the (ethical) behaviour of their members by developing professional codes.

Pater and Van Gils (2003) defined professional codes as written, distinct and formal documents, issued by professional associations that attempt to guide the professional behaviour of their members. The professional code contains a set of standards, norms and rules concerning professional conduct and everything related to it, considering the definition and approach of problems, working standards and methodologies (Bergenhenegouwen, 1996). The most important aspect of the professional code is the fact that the members of a professional group must accept a basic norm of morality which sustains the code in its entirety, forming a guideline for practical application in situations which are much too specific to be covered by code regulations (Lippitt and Lippitt, 1986).

Professional codes of practice or conduct are contracts entered into by members of the professional institution which forms legally enforceable requirements for the behaviour of members. The moral responsibility of the professional is to follow the rules of the professional code very strictly; for one thing, because the client relies on his /her professionalism and on the other hand, because the code legitimatises his/her activities (Bergenhenegouwen, 1996). Stewart (1995) argued that such codes do not teach

morality, ethics or values - they lay rules for conduct, and they will in daily practice be no more than guidelines for action.

The mere existence of a professional code does not guarantee its observance or a uniformity of performance among members of the professional group concerned. Some may feel a code of ethics governing professional conduct would suffice. Others would argue a code of ethics is too little and too late when enforcement of such a code becomes necessary (Chan *et al*., 2002). A professional code is ineffective when it is not accompanied by an implementable system of control or sanctions that must be accepted by professionals themselves (Lippitt and Lippitt, 1986). Therefore, effective enforcement in cases of unethical conduct by its members is essential.

The functions of these professional bodies normally include rules for their conduct and discipline in accordance with the professional code of ethics. However, Liu *et al*., (2004) discovered in their research that, many (surveying) professionals do not find the rule of conduct helpful when faced with complicated ethical issues. Furthermore, although ethical issues often occur during training or working, not many professional codes have been explicitly formulated for this. Therefore, professional bodies should take up the challenge to endorse professional ethics substance by reviewing their regulations and rules of conduct (Vee and Skitmore, 2003). This can circumvent the codes of conduct, from being just a "window dressing" to the professional bodies.

3.3.2.2.2 Ethics training

Apart from technical qualification, a professional also requires ethical normative competence normally acquired through training. Among the solutions suggested by the FMI/CMAA (2004) survey in order to reduce or prevent unethical practices is to have

more ethics training for construction professionals (Rick, 2005). Training implies certain dealings in which one has to make a choice among various options and choosing to solve a certain problem implies formulating a value judgement about the available alternatives; such choices are generally based on ethical decisions (Bergenhenegouwen, 1996).

According to Chan and Chan (2002), Continuing Professional Development (CPD) has been increasingly receiving more attention in recent decades, as construction professionals are required to update themselves with new developments in the rapidly changing built environment. CPD is a systematic maintenance, improvement and broadening of knowledge and skills, and development of personal qualities necessary for the execution of professional and technical duties throughout a practitioner's working life (RICS, 1993). Professionals need to keep themselves up-to-date and relevant to their clients and communities and CPD is expected to improve the public standing of "construction occupations" (Mills *et al*., 2005) and as a means to develop service attitude and professionalism (Le Roux *et al*., 2004).

The implementation of CPD training can be conducted in different approaches; through conferences, workshops, lectures and study for a qualification (Le Roux *et al*., 2004). Unfortunately, during the post-working professional training, there is lack of professional ethics-related CPD seminars to complement the pre-work ones (Vee and Skitmore, 2003).

Ethical issues often occur during the training or working life of a professional; nevertheless, not all professional institutions make it compulsory for their members to attend or enrol in any ethics related training. Professional bodies and institutions should

conduct CPD courses through working forums, discussion, talks and seminars which endorse professional ethics substance (Vee and Skitmore, 2003). A healthy debate on the ethical problems facing a profession should be initiated by its professional leaders who are seen as custodians of professional traditions (Frankel, 1989), where they could assist in identifying the subject matter of ethical issues to be included in the CPD ethics courses.

As a summary, in recent years, much attention has been focused on the benefits of enhancing students' understanding of ethical perspectives and professionalism in the workplace. This section has discussed the significance of ethics at the university undergraduate level and their positive outcomes. However, education in ethics should continue during their working life. It is implicit that regardless of professional allegiance, all participants should adhere to their respective professional code of ethics. However, understanding and applying ethics is also crucial so as to establish what constitutes ethical behaviour on the part of the professionals, which can be attainable by CPD training on ethics during their working life. As according to Duarte (2008), what we learn today is how we behave tomorrow.

Besides individual and professional training factors, other significant factors that have significant impacts on ethical behaviour of employees are organisational factors (Stead *et al*., 1990). As the organisation is the normal subsequent setting for any professional individual, the following section will discuss the organisational factors that can improve ethics.

3.3.3 Organisational factors

3.3.3.1 Introduction

The organisation is an important influence on ethics in the work place. In organisations, the norms and values of the team, department or organisation as a whole have a deep influence on ethical behaviour (Abuznaid, 2009). Reily and Myrslow (1990) go as far as saying that the organisational environment is the major cause of unethical behaviour.

Over the last two decades, there has been a growing emphasis not only on individual but also corporate ethics as it relates to the general good of society. The growing awareness by organisations for this latent factor prompted Robertson and Fadil (1999) to surmise that good ethics is good business. A positive company image creates what is known in the literature as ‘‘reputational capital’’ or advantages accruing to companies from a good reputation which may lead to positive outcomes in areas such as improved employee morale, increased strategic flexibility and enhanced financial performance (Firestein, 2006). The growing interest in ethics also provides a competitive edge (Rasberry, 2000). Ethically led organisations are more effective with positive outcomes such as strengthened organisational culture, lower levels of staff turnover and increased employee effort (Petrick and Quinn, 2001).

Ethics provide an essential foundation for business transactions (Cherrington and Cherrington, 1995). They are essential for organisational effectiveness and are necessary for interpersonal relations. No longer limited to individual, today’s ethical developments now involve changes to organisational structures and cultures in terms of ethical governance and ethical organisations (Langlois and Lapointe, 2010). The adoption of ethical principles is not because it is the “right thing to do” but because of the image enhancement which this may produce, in view of society’s increased demand

for ethical conduct in the business sphere (Duarte, 2008). As proposed by Kelley (2007), in corporate planning or strategising, ethics should be figured into a plan just like any other factor, right along with costs and profits.

In the late 1990's focus shifted towards ethics programmes on organisations (Fisscher and Nijhof, 2005). An effective ethics programme is a process of continuous activities that are designed, implemented and enforced to prevent and detect misconduct (Ferrell *et al*., 1998). It is effectively how ethics is institutionalised in organisations, or "ethics management" in organisations.

There is no one correct approach to ethics management. Companies vary their approaches. Some concentrate on core values of social responsibilities like human rights, honesty, and fairness. Others choose less morally oriented values such as quality of customer services, attention to diversity, and community involvement. The one common element that is evident is a love for and loyalty to the company, its employees, its customers, and the public at large (Rasberry, 2000).

Previous researchers have identified the fundamentals for ethics management in organisations as in Table 3.4.

Table 3.4: Ethics management in organisations

Reference	Circumstances	Fundamentals
Guerrette (1988)	Development plan of strategies towards rebuilding a company's value system in order to ensure the development of a corporate ethical ethos	• Development of corporate policy • **Corporate ethical code** promulgation • Management of **ethical training and corporate ethical education** • Corporate **ethical performance evaluation**
Stead *et al (*1990)	Provides insights into the understanding and ethics management of business organisations. Suggestions for structural mechanisms include:	• **Monitoring ethical behaviour** among employees, • Communicating ethical polices • **Ombudsman for reporting ethical violations** • Ethical aide-de-camp for managers • **Internal audit committee** • Newsletters and magazines advocating ethical conducts • Developing **codes of ethics** as a way of reinforcing an organisation's ethical philosophy.
ECOA (1998)	Social consciousness regarding ethical behaviour by the creation of the establishment of a cohesive team approach to the organisations.	• Vision statement • Value statement • **Code of ethics** • **Ethics officer** • **Ethics committee** • Ethics communication strategy • **Ethics training** • **Ethics helpline** • **Measurements and rewards** • **Monitoring and tracking system** • Periodic evaluation • **Ethical leadership**

Table 3.4: Ethics management in organisations (continued)

Reference	Circumstances	Fundamentals
Cochran *et al* (1999)	The common elements of formal ethics programmes such as:	• Formal **ethics codes**, which articulate a firm's expectation regarding ethics, written down as a number of responsibilities • **Ethics committees**, charged with developing ethical policies, **evaluating company or employee actions, and/or investigating and adjudicating policy violations** • Ethics communication systems, **providing a means for employees to report abuses or obtain guidance as to responsibilities** • **Ethics officers or "ombuds people**" charged with coordinating policies, providing ethics education, or investigating allegations • **Ethics training programmes**, aimed at helping employees to recognise and respond to ethical issues • **Disciplinary processes to address irresponsible behaviour**
Wood (2000)	A raft of measures that must be implemented by corporations in order to enhance their ethical engagement with society	• **Code of ethics** • **Ethics education** • **An ombudsman** • **Whistleblower protection** • **Ethics audits** • **Staff training**.
Svensson *et al* (2009b),	Organisational engagement with ethics may be structured around the principal areas of: • Ethical bodies • Ethical tools • Ethical support procedures and ethical performance measures	• Ethical bodies indicates organisational engagement with ethics in private sector companies and public sector entities and may consist of components such as: ▪ **An ethics committee** ▪ **Ethics ombudsman** ▪ **Ethics training committee** • Ethical tools may be seen as a complement to the area ethical bodies and consists of components such as: ▪ **Ethical training of staff** ▪ **Employee appraisal** • Ethical support procedures and the **ethical performance measures** consist of a number of components that complement the other areas, such as: ▪ **Consequences of a violation** ▪ Guidelines to support **whistle blowers** ▪ The application of **code of ethics**

In the construction industry, business reputation is considered a valuable asset for the players as it makes the customers satisfied, resulting in future business dealings. Results from the FMI/CMAA (2004) survey revealed that it is clear that ethics is an important concern among companies in the industry; however, it is also clear that very few are taking actions to support ethical practices. The following sections will discuss significant factors identified from Table 3.4 which can influence ethics management in organisations in the industry. They are: i) code of ethics, ii) the "ethics office" and ethics training, iii) the "ethics officer", iv) whistle blowing, v) leadership, v) employee's ethical background and organisational commitment and vi) transparency in company.

3.3.3.2 Code of ethics

One of the main sources that affect behaviour in organisations is the commitment of management to ethical practices. Such commitment can be communicated in a code of conduct or code of ethics document. While discussion is centred on codes of ethics, the terminology could naturally be widened to include ethical guidelines, ethical policy, codes of conduct and governance directions (McDonald, 2009). Codes of ethics is a statement laying down corporate principles, ethics, rules of conduct, code of practice or company philosophy, concerning responsibilities to employees, shareholders, consumers, the environment and society (Langlois and Schlegelmilch, 1990). It is defined by Schwartz (2001) as a written, distinct and formal document which consists of moral standards used to guide employee or corporate behavior. Behaviours that conform to those written codes of ethics are considered ethical and whatever violates the written standards is considered unethical (Abuznaid, 2009).

Previous studies proposed that a code of ethics should exist as a means of enhancing the ethical environment of an organisation (Adams *et al*, 2001 and Somers, 2001). On a

study to examine whether codes of ethics had a positive influence on employees' perceptions of their organisations, Valentine and Barnett (2002) found that sales professionals who were employed by organisations with codes of ethics perceived their work environment as incorporating more positive ethical values than individuals employed by organisations without codes.

According to McDonald (2009), the most common motivations for adoption of codes of ethics can be appropriately truncated into seven reasons: i) ensuring legal compliance and other statutory requirements, ii) providing a guide for behaviour and formalised expectations, iii) protecting and enhancing organisational reputation, iv) ensuring employee, management and supplier compliance and minimising risk, v) ensuring consistency across global networks, vi) creating and maintaining trust and confidence with stakeholders; and, vii) communicating principles and commitments to stakeholders. He added that the trend appears to be that an increasing number of companies, predominantly larger organisations, are adopting codes of ethics with multi-nationals, and clearly seeing the benefit of standardised policies across their operations. Studies by Ofori *et al*. (2004) also revealed that in order to increase performance, construction companies should also formulate and institute codes of conduct for their employees.

Despite the wide range of potential marketing purposes, perhaps the overriding objective of ethical codes is to influence the behaviour of employees (Wotruba *et al*., 2001) by serving as guidelines in moral issues. Studies have found that codes and corporate policies on ethics were significantly related to higher standards of ethical behaviour (Ford and Richardson, 1994 and Kaptein, 2002). According to Pater and Van Gils (2003), ethical codes are likely to influence individual ethical behaviour in two

ways: i) ethical codes may prescribe correct behaviour in dealing with ethical issues, by formalising and enforcing compliance with rules and procedures, ii) ethical codes might influence individual ethical behaviour via its effect on the ethical climate of the organisation.

It is believed that a code of ethics enhances ethical behaviour among employees and management of the public and private sectors (Abuznaid, 2009). Despite this, Gupta and Sulaiman (1996) discovered low awareness and enforcement of codes of ethics in Malaysian organisations. They added that although 70% of Malaysian managers recognise the existence of formal written codes of ethics in their companies, a relatively large percentage of them "do not know" whether a formal written code in the industry exists. Furthermore, their studies showed that codes of ethics are also not enforced in a proper and consistent manner in the Malaysian context leading to low degree of seriousness of implementation.

A study by Mihai (2008) to compare and identify the differences between the standards of ethics for all member institutes of the International Council of Management Consulting Institutes (ICMCI - the global association of national management consulting institutes around the world), revealed that 40% of the organisation members do not have an accessible code of ethics (in English language) on their websites. Ironically, he added, in a few cases, such as Nigeria and Malaysia, the web address provided did not work.

The lax attitude on the code of ethics in organisations in Malaysia is revealed by Karande *et al*. (2000) in their study to compare perceived moral intensity, ethical perception, and ethical intention of Americans and Malaysians. They concluded that

Malaysian organisations are: i) oblivious to the relevance of ethical issues and formal codes of ethics, and ii) an inability or unwillingness to adopt enforcing mechanisms and contrive suitable punishment-reward structures. They added that an organisation that seeks to foster an ethical environment will not only have a code of ethics, but also the willingness and commitment to enforce it in order to face increasing expectations of the Malaysian society.

An organisation can embrace an organisational code of ethics by setting down the ethical philosophy, and rules of conduct and practices. In other words, the code must specify the contents of ethics. These ethical contents are crucial for every business organisation, because the implementation and practice of the ethical contents can ensure customer satisfaction and loyalty (Rizk, 2008). Thus, Svensson and Wood (2004) reinforced that all corporations should make a conscious decision to pursue the goal of having a corporate code of ethics.

The announcement of a corporate code is only the beginning. Once people have been told what is expected, expectations must be reaffirmed time after time. For reinforcement, the code should be discussed at meetings of managers and key employees; interpretations or clarifications may also be desirable. When appropriate, policies should be updated, amended, clarified, or modified (Pomeranz, 1997; Svensson and Wood, 2004).

The discussion has shown that code of ethics acts as a guideline for ethical behaviour and assists management to monitor and reprimand employees who act unethically in their work. However, while codes of ethics are vital to ensure that a company behaves ethically, other measures are crucial too. Svensson *et al*. (2009a) viewed organisational

code of ethics as an important instrument in developing ethical standards in organisations in areas such as surveillance and training and guidance. This topic is discussed in the following section.

3.3.3.3 The "ethics office" and ethics training

For the majority of businesses, active attention to ethical concerns and the creation of an "ethics office" is a relatively recent concern. In integrity-based companies, the ethics office truly serves as the organisational conscience, gently reminding management and employees alike to remember their ethical compass. The ethics office is not responsible for writing the company's vision, mission and value statements, but concerned with how the overall ethics program reflects the organisation's strategic plan and the values of its culture (Rasberry, 2000). Leclair (1998) states that proper implementation of ethics training programs leads to: i) increased trust among all stakeholders, ii) improved customer and retention, iii) increased productivity, iv) employee commitment and retention, v) decreased legal problems and vi) greater profitability.

The terms "ethics program" and "ethics training programs" are used interchangeably by writers, which means ethics training. A number of writers have advocated the use of ethics training as a means of institutionalising ethics within the organisation. For example, Mortensen *et al*. (1989) proposed the inclusion of ethics in the organisational training and development of managers. Islamic basic ethical principles in the work place also stressed the aspect of continual on-the-job-education on values and virtues (Rahman, 1996).

It is evident that ethics training programs are perceived to be effective, and are demanded by employees. Research carried out by Delaney and Sockell (1992) showed

that 62% of respondents who did not have an ethics training program in their workplace said they would like their firm to institute one. More importantly, they concluded that ethics training programs are positively correlated with ethical perceptions and actions. Respondents also felt the presence of an ethics training program had helped them act ethically in the most serious ethical dilemma they had faced. Accordingly, employees perceive administrative actions such as the implementation of an ethics program in concert with a formal code of conduct as genuine concern and understanding from management of the issues that they face at the operational level (Appelbaum *et al*., 2009). As for construction industry development, training of human resources is also important for promoting and achieving improved ethical behaviour (Fox and Skitmore, 2003).

Svensson *et al*. (2009b) believed that ethics training is linked from a theoretical perspective because one cannot just expect individuals to be ethical to the level of organisational expectations without having some training. They added that without training and education, one might argue that the desire to incorporate an ethical perspective into the practices of employees will only be a hope that cannot be translated into reality. The intention of an ethics training committee would be to provide the focus and initiative to expose employees to ethical dilemmas in business situations that they might face while employed by a certain organisation.

Ethics training can create awareness and observance for ethical conduct in an organisation. Organisations can also establish an effective program to enforce compliance for ethical conduct. Kaplein (2002) suggested that "Ethics Helpdesks" were useful in helping companies detect ethical misconduct and non-compliance with codes of ethics and deal with these issues in an adequate and timely manner. This can be

achieved through effective ‘‘monitoring and auditing systems’’ by an “ethics officer” which will be discussed further.

3.3.3.4 The “ethics officer”

Organisations need individuals who are designated and in charge of their organisational engagement with ethics, such as an ethics ombudsman so that individuals within the organisation who have genuine concerns can feel free to voice these concerns to an independent arbiter (Wood *et al.*, 2004). If an organisation has a person designated as a confidante to whom employees can go to with their ethical concerns, then hopefully employees will be encouraged to volunteer information about unethical practices that they perceive are detrimental to the organisation. It would seem that having such a position in place within the organisation can only, but enhance the ethical health of that organisation (Svensson *et al*., 2009c); thus further supporting surveillance/training as a crucial construct of organisational code of ethics (Svensson *et al*., 2009a).

According to Tran (2008), corporations with longevity and reputability in their strategic plan need to be creative, innovative, and cutting-edge by embodying a noun such as (corporate/ethical) compliance in their strategic plan. Along with Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operation Officer (COO), Chief Information Officer (CIO), Chief Technical Officer (CTO), and Chief Marketing Officer (CMO), corporations need their next generation of CEO - Chief Ethics Officer (Tran, 2008).

A Chief Ethics Officer (CEO) is a person who typically oversees all aspects of ethics and compliance programs (Yuspeh, 1999). This includes but is not limited to standards setting, communication of standards, dealing with exceptions or problems, oversight,

monitoring, and ensuring the proper operational supports. He or she also advises senior management as to the ethical or compliance aspects of executive decisions (Yuspeh, 1999). The duty of the CEO, as implied (organisations must assign high-level manager personnel to oversee the compliance effort), is to, but not limited to: i) due diligence in seeking to prevent and detect criminal conduct, ii) monitoring and auditing systems, iii) reporting systems; and iv) whistleblowers (Tran, 2008).

According to Sims (1992), as a procedure to address a violation of the organisational engagement with ethics, there should be enforcement provisions for those individuals who may not uphold the code of ethics. In this way, an organisation signals to its employees the necessity to abide by the code for the sake of both themselves and the organisation. Therefore, it can be seen that the CEO - Chief Ethics Officer's responsibility is to oversee corporate compliance in the pursuit for ethical environment in the organisation.

Ethics management in organisations which include ethics office, ethics training and ethics officer are internal initiatives with the objective of enhancing the ethics environment in the company. However they cannot be included in the management structure without support from the organisation's leadership, since leadership have the authority to espouse moral initiatives into the company (*discussed in section 3.3.3.6: Leadership*).

3.3.3.5 Whistle blowing

Changes in philosophies and attitudes related to working in the organisation have advanced to the social and managerial acceptance of the fact that, as organisational members participate more in the affairs of the company, they may assume adversarial

roles when they sense inconsistencies, inadequacies, or the carrying out of wrong or imprudent actions by other people (Cleland, 1995). According to Cherrington and Cherrington (1995) reporting unethical behaviour is one of the most prominent moral issues in every organisation; if you witness an unethical act, you are obliged to report. Hence, whistle blowing becomes acceptable in the organisation.

The term "whistle blowing" is apparently derived from English policemen blowing their whistles to alert the public and other police to criminal acts (Strader, 1993). It is described by Johnson (1999) as an act of an employee informing the public or higher management of unethical or illegal behaviour by an employer or supervisor. Whistle blowing involves the deliberate disclosure of information about non-trivial matters, which are believed to be dangerous, illegal, unethical, discriminatory or to otherwise involve wrongdoing, generally by current or former organisation members (Hersh, 2002). These definitions of whistle blowing agree that it involves the reporting of questionable morality and/or wrongdoing which is not confined to illegality.

Research has shown that, what whistle blowers hope and believe their speaking out will achieve, is the correction of what they perceive as an organisational wrongdoing (Miceli and Near, 1984). However, by its very nature, whistle blowing is a dangerous path to take for any employee. Even though organisations may have procedures in place to protect the whistle blower, the act of whistle blowing - the act of communicating wrongdoings, has historically been fraught with personal danger and the ever-present threat of recrimination (McLain and Keenan, 1999).

The outcome of whistle blowing can be divided into the following three main categories: i) termination or continuation of wrongdoing, with or without an admission

that it has occurred, ii) policy change or no policy change; and iii) retaliation, reward or no response to the whistleblower (Miceli and Near, 1992). Responses to the whistleblower and the wrongdoing may be different and not necessarily consistent, with organisations that continue wrongdoing not significantly more likely to retaliate than those that terminate it (Hersh, 2002). It seems that whistleblowers must be prepared to face verbal criticisms of job performance, isolation by colleagues and management, his organisational role downgraded or worst of all expulsion from work; all because of his principles in ethics.

Tsahuridu and Vandekerckhove (2008) pointed out that people in organisations that blow the whistle are moral agents, and are responsible for their behaviour. They added that the increased focus on ethics and ethical behaviour in organisations has led to greater concerns about whistle blowers and their protection. Since, in a situation of recognising unethical practices and taking steps to expose them, the dilemma that many employees face, is in knowing to whom one can take an issue, so as to ensure its integrity; the integrity of the person against whom the complaint is made and usually, most importantly, for the person making the complaint, the guarantee of their own freedom from reprisals (Wood and Callaghan, 2003).

Despite the consequences of whistle blowing, someone must make the move to expose violations of the organisation's ethical principles. Svensson *et al*. (2009c) advocated that the organisation must communicate via formal guidelines on how it will support whistle blowers in order to set standards to ensure that either ethical violations or breaches will be reported, reviewed, and corrected. Hence, the call for whistle blower protection must be seen as an exponent of the call for more accountability of organisations to society (Tsahuridu andVandekerckhove, 2008).

Hersh (2002) proposed other possible sources of support for whistle blowers include professional societies, reporters, religious leaders and community and campaigning groups. He added that professional associations are in a much stronger position than individual whistle blowers to make a difference both in individual cases and to the ethical climate of organisations. They may be able to put pressure on organisations, including boycotting those who do not act ethically.

Whistle blowing includes disclosures both internal and external to the organisation; organisations benefit when employees choose to report internally. Internal reporting facilitates early detection of misconduct and creates opportunity for timely investigation and corrective action (Near and Miceli, 1995). It also positions organisations to proactively manage or even avoid public embarrassment (Near and Miceli, 1995) especially when it involves big and established companies in the construction industry who normally are awarded contracts.

The call for whistle blowers in the construction industry is apparent. As discussed in Chapter 2, the industry is plagued with ethical issues, and, one way to find out is usually through the "odd man or disgruntled employee", or "whistleblower" who informs about the unethical conducts or practices such as corruption. Nevertheless, it is hoped that whistle blowers who are motivated by their conscience reporting on unethical conducts or practices whether in the public or private sector are better protected and more highly regarded.

3.3.3.6 Leadership

The question is, who defines ethics in your organisation? According to Peterson (2004), the authority and power granted to leaders in organisations provide them with the

capability of setting the tone and ethical atmosphere of the organisation. Aupperle and Dunphy (2001) quoted Barnard (1938) from "The Functions of the Executive" - an elementary textbook on leadership that echoes a profoundly humanistic ethics: "leadership has two aspects; the technical aspects (physique, technology, perception, knowledge, imagination) and the subjective (responsibility, the quality which gives dependability and determination to human conduct, and foresight and ideality to purpose…….the moral factor". Gay (2004) pointed out that one thing effective leaders have in common is a strong set of core values and among the top values is ethics, and, they use this core value as a set of guiding principles or a moral compass.

Rosenbach and Taylor (1998) said that top managers value ethics as an integral part of the company's mission, strategy, and culture. They added that effective leaders articulate a vision that includes ethical principle, communicate the vision in a compelling way, and demonstrate consistent commitment to the vision over time. Ultimately, employers need to get their employees to respond to the moral obligations that the organisation's leadership has identified through its stakeholders. Thus, it is an organisational responsibility to get employees to respond positively to the moral values espoused by the company (Aupperle and Dunphy, 2001) through their leadership. Thus, it is important that ethics is included in the company's goals and expectations to inculcate and shape the employees' ethics senses.

To be an effective leader, one should also be an "ethical" leader. Brown *et al*., (2005) defined ethical leadership as "the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making". An important aspect of ethical leadership is the moral manager dimension

(Trevino *et al.*, 2000, 2003).This aspect of ethical leadership represents the leader's proactive efforts to influence followers' ethical and unethical behaviour. To put it simply - leaders have the ability to establish and communicate organisational values as well as impose rewards and sanctions to ensure compliance with organisational policies (Sims, 2000; Trevino *et al*., 2000, 2003).

Management science reveals that leadership efficiently integrates and coordinates division of labour across the organisation through influencing employee attitudes and behaviours (Ford and Randolf, 1992).They play an important role in determining the ethical attitudes of subordinates (Soutar *et al.*, 1994), since the core values of the organisational culture are formulated at the senior management, and the authority to implement ethical management is given by the senior management. However, Stead *et al*. (1990) pointed out that managers cannot expect ethical behaviour from employees if they do not behave ethically themselves. This is true since managers are seen as role models for their subordinates and the key to being an effective ethical role model for subordinates is to demonstrate consistency in ethical philosophy and ethical behaviour.

A study by Peterson (2004) showed that the differences in the observed unethical behaviour among various organisations are due to the ethical attitudes of the organisational leaders. In a study in Malaysia, the behaviour of one's superiors is cited as the primary influence for unethical Malaysian managers (Gupta and Sulaiman, 1996). Therefore, one of the responsible tasks for a leader is to enhance the ethics and morality of followers conduct (Northouse, 2001) since leaders can build socially acceptable behaviour by their own examples and commitment.

Another term frequently used to signify that leaders should also be a model of what they preach is called “walking the talk”. According to IIM (2004), leaders who do not lead by example do not walk their talk. For that reason, it is also critical to continually assess the behaviours of these leaders, and, as suggested by Gay (2004) - leadership surveys, regarding ethical values and “walking the talk” should be conducted annually by organisations to identify whether leaders do actually model what they preach. This also means that leaders should live out ethical values and maintain consistency of staying within the boundaries of these values.

The profession of engineering calls for men with honour, integrity, technical ability, business capacity, and pleasing personalities (Schaub and Pavlovic, 1983), which relates to the ethical leadership. According to Fryer (1997), one of the critical elements of the project managers for construction projects is the consideration of ethics and social responsibility. With increased emphasis on project management systems, construction firms are now seeking professionals with better management and leadership skills rather than technical skills (Dulaimi, 2005). Toor and Ofori (2008) contends that this situation urgently calls for fresh perspective of implicit leadership drives, suitable leadership behaviours for construction projects, practical and authentic performance standards, effective leadership interventions that can help to accelerate leadership development, influence of leadership on project outcomes, influence of leadership on followers and organisational outcomes in the long-term. Moreover, they added that there is a need to promote a positive culture in the industry and to develop leaders who possess positive values and practice high levels of moral and ethical standards.

Leadership affects effective team performance management (Strang, 2005). Hence, future leaders in the industry’s organisations should leaders who are confident, hopeful,

optimistic, resilient, transparent, moral/ethical, and future-oriented (May *et al*, 2003). They should also possess other qualities such as they attend to the development of their followers, and act as their role models to turn them into future leaders (Avolio and Gardner, 2005) and engage in monitoring follower performance and correct the followers' mistakes by teaching and coaching them (Toor and Ofori, 2008).

Management must propagate awareness of ethics, at the top, middle, and bottom. Thus, adoption of a comprehensive corporate ethics program should begin at the top of the corporate structure and should be integrated with an organisation's system of rewards and punishments (Rizk, 2008). In order for ethics management of organisations to be effective, the role played by leaders in organisations must be integrated with their employees' role. The following section will discuss this topic further.

3.3.3.7 Employee's ethical attributes and organisational commitment

A significant question on the management of ethics in organisations was posed by Mortensen *et al.*, (1989) - do managers perceive ethical behaviour to be an important personal job requirement?

During recruiting and selection, looking for individuals who not only subscribe to the corporation's values but who also have integrity and are ethical is critical. Townley (1994) offers that one of the ways to inform practice on how to deal with ethical conflicts is by examining the integrity of the individual, such as realistic job previews. In their study on the importance of ethics to job performance of managers, Mortensen *et al*. (1989) suggested that the importance of ethics should be carefully considered in job requirements. They added that the candidate's ethics should be evaluated along with other criteria in making selection and promotion decisions.

Doost (1997) also suggested that another important question regarding the long-term ethical and moral success of an entity depends very much on the company's hiring practices. He added that if the company cares about maintaining and upholding the highest ethical standards, it must be cognisant in hiring, retaining, and promoting people with the highest ethical and moral values. This is done best through careful recruiting and screening practices (for example: inconsistency in performance and past accomplishments, several lawsuits by or against an applicant, could point to an absence of rectitude of conduct). Hence, it is worthwhile to take the time to do an exhaustive background check on employees and keep the company accountable to those set of values and standards.

The Islamic basic ethical principles in the work place were the focus of Rahman (1996). According to him, one aspect is to recruit those who are most likely to have ethical qualities. This dimension requires a stringent screening mechanism. One incentive mechanism is to keep an employee well-paid, another is to appoint an employee on a probationary basis - until the qualities in question have been internalised.

Organisational rewards, recognitions, promotions and compensation are all aligned to motivate followers and drive the organisational vision forward, not impede it (Strang, 2005). In order to award these benefits to employees, it is customary for employers to have an appraisal exercise to evaluate their employees. Svenson *et al.* (2009c) proposed that a further component in the organisational engagement with ethics is the "employee appraisal" which is an examination of the ethical performance of individuals within the organisation on a personal level. The view that organisations should formalise the ethical performance of employees through the employee appraisal system is supported by Fraedrich (1992), Harrington (1991), and Laczniak and Murphy (1991). It was also

suggested that ethical decision making should become a part of the performance appraisal of individuals (Harrington, 1991; Fraedrich's, 1992). This is a good idea since it integrates ethics into one's perceived organisational performance, which is another way of rewarding ethical behaviour and discouraging unethical behaviour (Svenson *et al*., 2009c).

Concerning the construction industry, one of the solutions suggested by the FMI survey to reduce unethical practices in the industry is to put more emphasis on social responsibility in award criteria (Rick, 2005). According to Gay (2004), we should not just give a raise only, when people do well in their performance assessment on their technical competence. He added that their contribution on values and behaviour should be measured as well and has an impact on the amount of their increase; and they will pay attention too. This means that the organisation is serious in realising ethics as the core business, too.

The following literature will discuss another component in the ethical management of the organisation which is employees' commitment to the organisation. Past research has shown that job satisfaction is a determinant of "organisational commitment" (Mannheim *et al*., 1997, MacKenzie *et al.*, 1998). "Organisational commitment" is defined by Porter *et al*. (1974) as the relative strength of an individual's identification with, and involvement in, a particular organisation and characterised it by three factors. These factors are i) a strong belief in and acceptance of the organisation's goals and values, ii) a willingness to exert considerable effort on behalf of the organisation, and iii) a strong desire to maintain membership in the organisation. According to Loo (2002), in order to instil organisational commitment among employees, a comprehensive and fair compensation program is essential to attract and retain top performers. He added that a

mix of both direct compensation (e.g. salary and bonuses) and indirect compensation (e.g. flexible working arrangements) to satisfy the needs of a workforce is most successful.

Researches have also identified the relationship between ethics, job satisfaction and "organisational commitment". Morden (2004) and Pettinger (2007) both agreed that a practice which will undoubtedly be beneficial for the business enterprises is to provide a reasonable salary and other benefits to the employees. The employees should be given a reasonable salary when they perform very well in the business and act sincerely and honestly. They added that managers should appreciate them, promote them to higher positions and also increase their salary and allowances.

Schiebel and Pochtrager (2003) reported that organisational ethics increases employees' commitment. This conception is shared by Desjardins (2009) and Velasquez (2009). According to them, ethics can guide the managers and executives of the organisation's business in the right direction. It increases the reputation of the organisation, ensures its continuous development and helps to achieve customer satisfaction. One way is giving incentives and promotions to employees who not only work hard, but, also "sincerely" for the organisation and provide innovative ideas for the betterment of the business and gaining competitive edge (advantage) over the competitors. A related study in Singapore by Koh and Boo (2004) revealed that organisational leaders can use organisational ethics as a means to generate favourable organisational outcomes. Results of the study derived from a questionnaire survey of 237 managers indicated significant and positive links between i) top management support for ethical behaviour and the association between ethical behaviour with ii) career success within the organisation and job satisfaction.

The discussion in this section has considered the component of employees' ethical attributes; where it is essential to hire them based on ethical qualities, and then, appraising their ethical work performance. They should then be given organisational rewards such as promotions or other reward criterions especially for ethical performance, making them satisfied with their jobs in order to establish their organisational commitment.

3.3.3.8 Transparency by the company

The question of social responsibility and ethics has become a core issue of businesses (Pederson, 2007). In order to gain trust not only from their customers, but, also the public, companies should practice transparency in their business activities. "Transparency" relates to the general process of making organisational activity more visible to society at large - a process already in progress to some extent through investigative journalism and so on (Gray, 2007).

Companies who want to be competitive and forge ahead must be transparent. This can be realised by publishing reports of all their activities that might affect the community or public at large. This policy is reflected in about 80% of FTSE - 100 companies, where, they now provide information about their "environmental" performance, social impact or both (Orme and Ashton, 2003).

However, in annual reports, companies tend to disclose only favourable aspects of their social and environmental activities (Ghazali, 2007), while large companies are also more inclined to report both their financial, and, social and environmental performance (Yadong, 2007). So, in addition to financial reports showing loss and profit accounts to

their stakeholders, companies need to show that they are also receptive to the demands of the public at large.

Craddden (2005) suggested that depending on the society in which they operate, companies should give an account of only those activities that have an impact on their society. These activities should be presented as providers of beneficial effects on the community and its stakeholders. The demonstration of this commitment depends on a company's governance culture, as being created and influenced by top management (Yadong, 2007). For example, a number of Australian companies illustrate their approach to social responsibilities and business values by the way they report these issues in their Annual Report (Small and Dickie, 1999). In this way, they can demonstrate their social responsibility and commitment to their stakeholders expressed through the organisational vision or mission statement in the pursuit for "healthy" practices.

This discussion has highlighted that organisations have a social responsibility to be transparent in their business activities. Most organisations would disagree to this idea especially when it will expose any of their unethical activities that have negative impacts to their clients or the public. On the other hand, companies which are ethical and transparent will win customers trust and confidence and sustain their business in the long run.

3.3.4 Industry factors

3.3.4.1 Code of ethics

Research by Vee and Skitmore (2003) revealed that even though the majority of organisations have their own ethical codes of conduct and the employees belong to

professional associations, the curbing of unethical conduct is difficult. One of the main obstacles in the industry is fragmentation - the lack of a leading body (excluding the government) which makes tackling the issue a daunting prospect (Mason, 2010).

Could it be that the industry's problem reflects the fact that, no one in a leadership position has stood up and said, "Who is going to take substantive steps to bring out the change in ethics of the construction industry? Where is that leadership (in the construction industry)?" The electronics industry found its leadership in Hewlett-Packard, Dell and IBM, and, that industry does not have nearly the number of issues we have relative to fair play and integrity (Rick, 2005). These three firms teamed up to produce an Electronics Industry Code of Conduct which they would do business under - this shows commitments to move to a more ethical business environment (Rick, 2005),

The Survey of Construction Industry Ethical Practices and Issues in the USA (FMI/CMAA, 2004) suggested that there should be in place a Code of Ethics or Code of Conduct that everyone in the construction industry has to abide by; that is, by creating an industry - wide code conduct (Rick, 2005) which should serve as a model for other countries. Similarly, in Singapore, in a study to improve performance of the construction industry, as a first step towards self-regulation and image improvement of industry players, Ofori *et al*. (2004) also identified that one of the principal "enabler" for improving the professional standards in the industry is to set up a national code of conduct for construction professionals to cover their responsibilities, obligations, competence and impartiality.

In the UK, the Society of Construction Law (SCL) promoted the Single Ethical Code (SEC) for the industry (Uff, 2005). The code was set out in a statement of ethical

principles; hereby referred to as statement of good practice, where ethical conduct is the compliance with the following ethical principles: i) honesty, ii) fairness, iii) fair reward, iv) reliability, v) integrity, vi) objectivity and vii) accountability. These principles were written to apply to the work of all professionals working in the construction industry, whatever their original qualification or affiliation and to individuals, whether they work for or on behalf of an independent professional or as a partner, associate, director or employee of a firm or company (Mason, 2010). It was intended this statement of good practice is in addition to any other professional code that may apply. The statement of good practice was seen as part of additional contractual and other duties taken on under the civil law and potential breaches of the criminal law.

Mason (2010) recommended that if the SEC is to be adopted, i) inclusion of the code in standard form of contracts and the forms of professional appointments would be a positive step, making ethics less vague, and ii) it should give more practical guidance; whereby a workbook or ethics hotline would improve matters. The code has been described by Uff (2003) as the first line of defence against corruption. The advantages to the construction industry in adopting the code would lead to an appreciable reduction in poor designs, shoddy workmanship, delays, claims, excessive charging, cost overruns and disputed claims (Thornton, 2004).

Another approach suggested by Kang *et al*. (2004) is to introduce prototype codes of ethics and conduct for projects in accordance with corporate codes and industry codes and modify them according to the feature of each project such as cultural issues, relationships among the participants, and environmental issues. They added that in order to develop project-specific codes of ethics and conduct for construction, the goals of

projects should be fully analysed and understood by all the parties and workshops among the parties should be held to draw consensus of the codes of ethics and conduct which will be used throughout the lifecycle of projects.

Furthermore, Code of Ethics in the industry should provide for the curbing of corruption, since corrupt behaviour can be regarded as the most epidemic issue in the industry and a criminal offence in most countries. Most developed countries have taken a further and positive step to reinforce anti-corruption mentality and ethical behaviour among the industry's professionals. In the US, the American Society of Civil Engineers (ASCE) outlined its principles for professional conduct that would revise its current code of ethics; creating new standards of business practice for its own members and that would be adopted by those of other engineering and construction groups and serve as a model for other professional societies in the US and abroad (ENR, 2005). The ASCE also recommended that existing or new Code of Ethics should include specific anti-corruption provisions; e.g., zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work - violations must be reported. These provisions should be stated in contracts and apply to anyone hired to design and construct the project (ENR, 2005). In line with this purpose, the Society of Construction Law, UK published a discussion draft for an Anti- Corruption Code. It defines the rules that an individual should comply to reduce the risk of breaching the criminal law relating with bribery, deception and fraud and giving examples of the actions that could breach that law (Stansbury and Stansbury, 2005).

One might argue that code of ethics in respective organisations and the professional bodies are sufficient to inculcate ethical values and behaviour and enforce them on the employees and the construction professionals. However, the industry's fragmented

characteristic normally isolates the player especially in their business objectives and endeavours. A standard code of ethics for the industry is envisaged to manage ethical behaviours universal to all participants especially to tackle the issue of corruption.

3.3.5 System and procedure in the construction industry

3.3.5.1 Introduction

The key thrust in the construction industry is the system and procedure in the industry, which is the next component in the framework to improve ethics. According to CIDB (2010) work performance in terms of quality, safety and level of efficiency may leave an impact on the overall image of our industry. In this section, the principal factors considered are tendering and procurement practice, site safety, quality of work and timely payment.

3.3.5.2 Tendering and procurement practice

Ofori (2000) pointed that developing countries inherited project procurement and administrative arrangements currently in use from Western countries, which have different history, culture, collective experiences and breadth of construction expertise. The traditional procurement approach is still prominent in the Commonwealth countries, where else, in the UK construction industry, after a comprehensive review of the procurement practice, Latham (1994) advocates the building of trust; in an industry characterised by mistrust, rivalries and adversarialism.

Construction procurement is the fundamental step of any project development affecting overall performance, and has been the subject for review by developing countries. The spirit of Levene Report (1995), Latham (1994) and Egan Report (1998) in the UK is one linking project efficiency and effectiveness to a continual attention to the possibility of

improvement in cost and function. From the client's side, the government could support, rather than limit such productivity by becoming involved, continually within the process of project construction, delivery and use. This could be done by influencing, for instance, procurement practices, monitoring techniques and accounting procedures (Holt and Rowe, 2000).

As direct consequences of Levene (1995) and Egan (1998) and the drive to improve best practice throughout the industry, the UK government has provided guidelines on construction procurement in the key elements of whole life costs, project evaluation and feedback and benchmarking (Construction Procurement Guidance, 2000). In Northern Ireland (GCCG, 1999), in order to achieve excellence, the government construction client has identified best practice procurement as a key element strategy. A study by Smallwood (2000) identified that using appropriate procurement systems and contract documentation is a requisite potential to improve performance in the South African construction. It is also necessary for efforts to be made to devise practices and procedures which are suited to the culture of each country since their studies confirm that the construction industry is influenced by its environments.

The procurement task involves the selection of suitable contractors, professionals and other participants to the project. The main objective is to ensure that the participants for the project are acquired in the most effective way. As the involvement of many parties is a dominant characteristic of construction projects, awarding bids to the right contractor or even designer is essential. If one of the parties is not capable to act within his/her role, the project is likely to fail. It is therefore essential to ensure that the bidding process can help single out the right designers, contractors and other parties to effectively transform project ideas into reality (Nguyen *et al.*, 2004). An appropriate

choice of the "right" band of bidders/proposers and the consolidation/improvement of relationships with them could be useful in optimising the transaction costs and enhancing harmony and overall value (Rahman *et al*., 2001).

Thus, the pre-bid contractor selection tasks such as certification, prequalification, short-listing to an optimum number of bidders/proposers are potentially significant in contributing to the ultimate "best value" (Palaneeswaran *et al*., 2003). It sets a barrier for entry and limits tenderers who are capable and responsible (Rubin *et al*., 2005). In such pre-bid selection exercises, the contractor capacities for best value delivery could be ensured by assessing promissory factors such as past experience in similar projects, past performance, financial strengths, human resources, equipment resources, technology bases, claims or disputes history, and track records in legal, environmental, safety and health aspects. These contractor assessment criteria should be appropriately selected and the contractor attributes should be carefully evaluated by suitably matching the specific client objectives and the project requirements (Palaneeswaran *et al*., 2003). Furthermore, the evaluation procedures used in pre-qualification and short-listing should be revisited and improved periodically; otherwise, those may not be very effective in achieving the desired objectives (Warne, 2002).

In recent years, construction procurement has been subject to considerable transformation from lowest cost to best value procurement and a revised agenda for delivering broader policy goals related to social and environmental sustainability (Oyegoke *et al.*, 2009). Contractors should be selected based on long-term sustainable value for money and not just lowest price. The lowest tender price alone will not guarantee value for money over the full life of the building. Consideration should be given to the quality of the design, the proposed method of construction and meeting

health and safety performance (House of Common, 2001). Contractors who are capable, technically competent and, ethically responsible should be able to carry the above requirements. Thus, builders with creativity, quality and good record will win.

Perhaps Malaysia should follow the example of our neighbour, Singapore, who is pro-active in its solutions especially when disaster strikes. Following the Nicoll Highway collapse, the committee of inquiry recommended that a strict weightage system should form part of the tender evaluation system (Lian, 2005). The weightage system should include non-technical and non-commercial attributes such as safety records and culture of the bidder, and its core or corporate competency, and, should apply even if the tenderer is a joint venture or a consortium (Kamardeen, 2009). This entails a departure from the traditional lowest price method.

Palalani (2000) said that it is important that those who enter the industry be committed to it. They must abide by the best professional, ethical and business practices. He added that people, who think that the industry is a sector you can make a quick buck, should be ashamed if at a later stage things go wrong. In the process, they give the industry a bad name and embarrass the industry with their shoddy work and unprofessional conduct.

Further radical change is needed in the way we build. We need to weed out the non-performers; one way is by blacklisting companies practising unethical practices (James and Frank, 1992). This may mean there will be fewer but "bigger" winners. Thus, companies with the right culture deserve to strive since no one benefits from cut-throat competition and inadequate profitability (Datta, 2000). For example, there have been calls in the Australian contracting community itself to get rid of those who do not do

the right thing (Master Builder Magazine, 1997) and those who lack building construction ethics, with greed being one of the main factors leading to unethical conduct (Ritchey, 1990). Thus, we should only allow and retain capable and responsible contractors in the industry. Finally, according to Rubin *et al*. (2005), another way to ensure ethical bidding is to include a non-collusion clause in a contract. This goes a long way; it puts procurement people on notice.

3.3.5.3 Site safety

The construction industry is characterised as one with a poor safety culture, and it appears that attempts to improve the safety record will not be fully effective until safety culture is improved (Blockley, 1995). A total of 31 characteristics that define organisational safety culture was identified by Molenaar *et al*., (2002), which included management commitment, communication, strategy development and implementation, resources, and empowerment, to name but a few.

Ho and Zeta (2004) established a set of key factors: behaviour, environment, organisation and person; that affect construction safety culture. They argued that safety culture would fail when it lacks support of the four factors. Therefore, a better understanding of safety culture, and its key determinants (enablers), will definitely help construction organisations to strategically allocate resources and concentrate their efforts to ensure the improvement of their overall safety performance (Chinda *et al*., 2008).

Research by Shimmin *et al*. (1981) has shown that in a sample of accident victims, two-thirds considered their accidents to have been avoidable and caused by inappropriate behaviour or equipment usage. This suggests that, in the views of the workers

themselves, something can be done to reduce accidents. According to Marsh *et al*. (1995), in essence, there are three elements to behaving safely: first, the knowledge of how to operate safely; second, (if necessary) the equipment to operate safely; and, third, the motivation to operate safely. They added that psychological interventions attempt to improve safety performance by addressing the last element. These interventions have taken several forms. For example, improving safety through increased safety consciousness by having posters and informational safety campaigns, but they have not been consistently successful (e.g. Wilson, 1989; Saarela *et al.*, 1989).

In addition, incentives have been used successfully to improve safety behaviour (Peters, 1991), but can be expensive. Techniques for modifying behaviour have already been shown to be of value in safety. McAfee and Winn (1989), for example, showed that safety behaviour can be improved by systematically monitoring safety-related behaviour and providing feedback in conjunction with goal setting and/or training.

Data (2000) suggested that besides fair wages, decent site conditions and care for health and safety of workforce are fundamental aspects for improvement for the industry in developing countries. He also added that most significantly, the implementation of safety programmes is deemed to have the potential to make an improvement in the performance in the industry. Thus, in order to minimise accidents and death at construction sites, site safety programme should be considered a priority for all projects. A site safety program should include the following: i) require all workplaces to conduct risk assessments and site management plans, ii) stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management, iii) ban contractors with bad safety records from tendering projects, iv) hold campaigns to raise awareness

of importance of workplace safety and urge employers and workers to take responsibility for workplace safety (MIM, 2005).

Another feature of site safety program is the safety guidelines. However, there is too much bureaucracy, complicated procedures and paperwork currently associated with the legal requirements to show "competence" in safety matters (Wood, 2006). Drawing up a set of core criteria against which can be measured the safety competency of companies, designers, site workers, and the projected new health and safety coordinators is essential. Thus, safety criteria should be standardised as guidelines for all concerned (Wood, 2006). This should also help everyone to assess whether a contractor has basic health and safety know-how. However, smaller and medium-sized firms will suffer most due to lack of time and resources, but this proposal further emphasise the importance of safety management.

Another crucial factor to improve safety at site is safety training and education which must be made compulsory for all concerned (Smallwood, 2000). It is essential to educate workers about all aspects of work safety and give them the skill to look after themselves (Nishgaki, 1994, and Garza, 1988). Effective training in the construction industry is suggested by Davies and Tomasin (1999) as one means by which safety can be improved, and, company management must be active in implementing it in order to reduce the number of injuries and fatalities.

In order to implement site safety programs, communication between industry players is a vital link. Tripartite communication between government, industry and union together with collaboration on occupational, health and safety measures should be implemented towards improved construction industry and a safer, more globally competitive industry

(Lingard and Yesilyurt, 2003). Discussions should be held between the industry players to provide feedback and more understanding of what should be carried out for site safety for everybody concerned (Wamuziri, 2007).

Client company culture and client contracting strategies have been identified as areas which can contribute to opportunities for occupational and health safety (OHS) improvements the construction industry. According to Levitt and Samelson (1993) as the "initiators" of projects and purchasers of the construction industry's product, clients are in the best position to drive the cultural change needed to bring about further improvements in OHS in the construction industry. Clients make key decisions concerning the project budget, project objectives and performance criteria. Clients also determine project time-lines, which can create the type of pressures and constraints known to have a significant impact upon OHS during construction (Lingard *et al*., 2009).

According to Huang and Hinze (2006a,b), the involvement of the client in pre-project planning, financially supporting the constructor's safety program and participating in the day-to-day project OHS activities were important requisites for excellent project OHS performance. Construction clients are also the key to involving designers in the construction OHS process. For example, the client's selection of project delivery strategy influences the extent to which designers are motivated to consider issues of OHS and constructability in their design decisions (Gambatese *et al*., 2005).

Safe site conditions are often regarded a secondary aspect in project management. Thus, the understanding of the importance of ensuring no dangerous working conditions is important (Pederson, 2007) and commitment of implementing OHS measures is an

internal factor of a healthy working environment (Yadong, 2007). It has contributed to reducing the financial and time-related costs associated with occupational accidents (Petrovic-Lazarevic, 2010).

The discussion identified the understanding of safety culture, safety programs, management procedures and procedures, training and education, and client involvement as essentials for site safety. An added advantage is that it can create a positive influence on the competitiveness of the construction companies. Work sites should not reflect a poor image of the industry but instead become advertisements for the industry.

3.3.5.4 Quality of work

To achieve improvement of quality, a strategic and continuous approach should be adopted towards creating a quality culture in each company (Ofori *et al*., 2004). Professionals need to be trained that good ethical practices can be augmented to contribute to design and construction solutions to build good quality work according to the specifications without sacrificing the users' safety and reasonable use of the completed work (Mahbob, 2005).

Too often, clients are too impatient to start the project without appreciating the need for resources to be concentrated up-front on projects if greater quality is expected. Hence, too much time and effort is spent on construction sites, trying to make design work in practice (Datta, 2000).

According to Datta (2000), a fundamental malaise in the industry is the separation of design from the rest of the project process. It has been suggested that one way to

improve the quality of buildings is to make clients more involved in the development of the design and construction process (Ofori *et al*., 2004).

Ofori *et al*. (2004) asserted that quality should be perceived from different perspectives; that of the industry, and that of end-users. In addition, end-users expectations should be managed, as their demands must be realistic. But, there should be a universal understanding and awareness amongst industry players of the importance of quality. Thus, leadership of an integrated team comprising of suppliers, contractors, and designers dedicated to designing and constructing the project is essential to improve quality significantly (Datta, 2000).

Palalani (2000) emphasised that to ensure an acceptable quality in the construction industry, government as the main employer, should insist on enforcement of standards. The standards are there in the form of specification, and these should be enforced through adequate monitoring. One way to enforce standards is by "benchmarking". Cleland (1995) listed benchmarking teams as one of the team-based strategy to facilitate productivity and quality improvements in the MNS's (Manufacturing Support Teams). Benchmarking teams are established to determine the best practices and competitive points of reference so that efficiency and effectiveness measurements can be made. Such measurements can then be used to determine the efficacy of the operational and strategic initiatives under way in the enterprise.

According to Smallwood (2000), best practice programmes which include benchmarking are essential to improve construction performance. It is suggested that compulsory benchmarking tools are used as a means of monitoring and measuring quality of construction work on all projects (Datta, 2000). In Singapore, all public-

sector buildings and those built on land purchased from the state are assessed in accordance with set guidelines called Construction Quality Assessment System (CONQUAS). This system is applied to measure the quality of level achieved in a completed project, and contractors are given marks out of 100 (BCA, 2000). The use of CONQUAS to measure quality on all projects would motivate the industry to improve quality (Ofori, *et al*, 2004). Thus, benchmarking tools can provide a means of monitoring towards quality improvement. In Malaysia, a standard scheme to measure the quality of work achieved by contractors is recommended so that their work can monitored (Abdul Rahman *et al*., 2011).

In a study on the construction industry in Egypt, some of the factors identified to improve construction quality are: i) improving design and planning during the pre-construction phase, ii) developing and improving quality assurance and control systems, iii) improving the financial level and standard of living of employees, iv) improving the accuracy of cost estimating, v) improving training for contractors and consultants, vi) increasing contractors' technical and managerial efficiency (Abdel-Razek, 1998). According to Abdul Rahman *et al*. (2011), the human factor of good working ethics is also necessary as it has significant influence on the quality of work.

The discussion highlights the importance of quality culture, clients' involvement for from the design stage and commitment on the need for resources, integrated effort from the project team, benchmarking for quality control, training, and last but not least, the human factor of good working ethics as the criterions for quality of work. It may be difficult to achieve all these factors, but, it outlines the necessary requirements that the industry should follow in order to achieve quality of work.

3.3.5.5 Timely payment

Contractor (including subcontractor, supplier and consultant) businesses rely, for their health, on the timely payment of their claims, and payments may dominate the thinking of a contractor and the way a contractor operates (Carmichael *et al.*, 2010). Hence, payment term is something considered very important because it has an effect on the price and also on the efficiency of the contractor (ICTD, 1992). When payments due under the contract are delayed or of lesser value than anticipated, the contractor's financial position suffers, and this in turn may affect a project's performance (Sears *et al.*, 2008). The cardinal principle is that the contractors should not be required to fund the construction; there must be an appropriate flow of funds so that the contractor does not have to commit his resources for the funding of the construction (ICTD, 1992). However, at the same time, the flow of funds will not be such in which the contractor would be tempted, having got more than enough, to slow down (ICTD, 1992), as this will be unethical of them.

Typical contracting is done on the basis of the contractor doing and paying for the work, and then being reimbursed by the owner. Claims could be expected to be submitted regularly by the contractor, and a short time after submission, the contractor could expect to receive payment. The timing of claims and the resultant time lag before receiving payment are matters dealt with in conditions of contract. However, it is noted that contractors may not receive the full amount of any claim, and the time of receipt may be different (commonly later) than that given in the contract (Carmichael *et al.*, 2010).

The payment process for public sector works in Malaysia is outlined in detail by Hui *et al.* (2011). The payment of the tender awarded would normally be based on the progress

of the project. The contractors need to submit the progress billing attached with the approved percentage of completion by the authorised person in charge. The general guideline is to honour payment within 14 days on submission of completed information and documentation. Most of the problems occur when contractors do not attach the required necessary documents. In order to avoid delay in paying the contractors, the payment officers have to make sure that documentation is complete. If there is any problem, the documents would be sent back to the relevant contractors for verification. It would then take the latest a week for the payment to be honoured. There is also a clause stating that the contractors can be paid three months after the signing date of the agreement. Before any payment is being made, it is a contractual obligation of the committee to also monitor whether the claim is made in accordance to the terms, product delivery and other criteria prescribed.

Carmichael (2002) said that contractor non-payment is a cause for disputes escalating and noted the link between good owner-payment practices and non-adversarial owner-contractor relationships. Thus, ethical conduct by all construction professionals is significant in construction contracting; especially when it comes to payment (Badger and Gay, 1996). In view of the dissatisfaction of not only the contractors, but, also of the subcontractors, it is suggested that innovative payment systems be devised that will not put the subcontractor at a disadvantage by putting him at the end of a long payment chain since subcontractors are the smallest and most vulnerable (Odeyinka and Kaka, 2005).

Thus, in Malaysia, in order to ease contractor's cash flow position, government contracts implement a timeframe guideline to expedite progress payments to contractors as discussed above (Hui *et al.,* 2011). With regards sub-contractors, another innovative

payment system that has been practiced in the public sector is the direct payment policy to nominated sub-contractors (the specialist sub-contractors) to overcome the "pay when paid" stance by main contractors. However, this procedure is not normally practiced in the private sector. According to Chen and Chen's (2005) report on their survey on contractor's components and frequency of payments, there seems to be a difference in the payment condition patterns between the public sector and the private sector.

In the Australian construction industry, to recover payments, sub-contractors have generally relied on one or more traditional dispute resolution processes, such as arbitration and/or litigation (Brand and Davenport, 2011). However, there is evidence based on comments made by subcontractors and their industry association representatives that some subcontractors fail to take the necessary actions and remedies available to them under the law (or in contract) (Commonwealth of Australia, 2002). Reasons for this may include the high cost and time delays in taking legal action. The prohibitive costs and time delays involved in recovering payment under these processes have often led sub-contractors and suppliers to simply abandon their right to payment and to move onto other projects in order to maintain positive cash flow (Brand and Uher, 2010).

The Australian Government has taken initiatives to stamp out the practice of not paying contractors for work they undertake on construction, one of which is through the "Building and Construction Industry Security of Payment Act" (the "NSW Act). The main thrust of this Act is to reform payment behaviour in the construction industry which will speed up payments by removing incentives to delay (Iemma, 1999). It creates fair and balanced payment standards for construction contracts, whereby, the standards include use of progress payments, quick adjudication of disputes over

progress payment amounts and provision of security for disputed payments while a dispute is being resolved (Iemma, 1999).

Some countries have legislations that attempt to address perceived or real non-payment of contractors by owners: i) by allowing the contractor's claims to be adjudicated expeditiously; for example, the security of payments legislation operating in the states of Australia as discussed above; or ii) by requiring prompt payments, for example, the American experience (Touran *et al.*, 2004); which could be adopted in Malaysia by enforcing compulsory compensation from clients when payments are not honoured within the stipulated time.

However, with regards to legislations, Malaysia is now following the footsteps of her Commonwealth counterpart from Australia. It is appropriate that the Government is in the process of finalising the draft bill of the Construction Industry Payment and Adjudication Act (CIPAA) which will be tabled in the next Parliament session. The first reading of the Bill will be held in March 2012 following Cabinet approval (The Star, 2011a). When it becomes law, it will aim at guaranteeing the security of payment and protect the rights of sub-contractors, suppliers and other stakeholders, where any dispute over delayed and non-payment can be resolved through adjudication. It seems that the provisions in standard forms of contract in Malaysia with regards to payment is inadequate to settle the timely payment issues to the extent that the Government has to intervene to safeguard the interest of industry players who are affected by it.

3.3.6 Other factors

The other factors which are considered essential to improve ethics in the construction industry are environmental ethics, legislative enforcement (IIM, 2004) and

accountability and customer satisfaction (Lawton, 2005). They are discussed in the following section.

3.3.6.1 Environmental ethics

3.3.6.1.1 Strategies with dealing with impacts to the community

The question of social responsibility and ethics has become more of a core issue of businesses (Pederson, 2007). When making environmental decisions, business managers should have an ethical attitude which considers environmental preservation a priority (Garrod and Chadwick, 1996). With the maturity of the thinking behind environmental ethics, the public has begun to pay increasing attention to environmental consciousness in decision making, including managerial practice decisions.

The increasing concern about the impact of new development means society is taking a greater interest in its "stake"- the definition of a stakeholder is "any group or individual who can affect or is affected by achievement of the organisation's objectives" (Moodley, 1999). According to Newcombe (2003), there has been the realisation that power can be derived from groupings of people acting together in a cohesive manner; thus, power is the mechanism through which stakeholders influence projects. George *et al*. (2000) find that these stakeholders are dealt with only on a reactive basis when successful completion of a project is under threat. However, organisations have had to accept the general public amongst their stakeholders; in some cases, rather reluctantly (Barthorpe, 2003). This is relevant in cases of controversial projects affecting the environment and the local communities at large. According to Du Plessis (2007), the challenge for the construction sector is not just to respond to the need for adequate housing and rapid urbanisation, but to do it in a way that is socially and ecologically responsible.

Community involvement and communication is an important component of environmental concern as found in previous studies. According to Nguyen *et al*. (2004), managing public reactions and opinions and understanding public attitudes are an integral part of the project management's and clients' responsibility. A large infrastructure project needs support and understanding from the community affected by the project, especially during the construction period (Yeo, 1995 and Nguyen *et al*., 2004). It is essential that project participants should truthfully share the project information and obtain different public perspectives regarding their project (Nguyen *et al*., 2004).

Communication with all stakeholders needed to be planned for and/or needed to occur more often (Walker, 2000). In a study on effects of construction activity, Hadi (2001) indicated that communication and consultation were key to reducing the scale of concerns from local people, but the degree of consultation that did take place was inadequate. He identified a common shortfall; that is, there is no system in place to inform the local residents of what was happening. Other similar studies showed that no means of gaining feedback was in place (Glass and Simmonds, 2007) and no evidence of any formal impact minimisation strategy (Barthorpe, 2003) or a site-specific approach (Moodley, 1999). There was recognition that community issues fell within the project manager's remit (Moodley, 1999; Newcombe, 2003).

Moodley (1999) considers communication and the provision of relevant information as key to successful community engagement; he proposes a concept of customer service orientation. Glass and Simmonds (2007) identified the key components in effective community engagement which are: i) dedicated resources, ii) a nominated person, iii) a structured approach to complaints and feedback, and perhaps most importantly, iv)

communication with the community; among the key components in effective community engagement. They also suggested that the rise of corporate social responsibility is encouraging contractors to improve their ethical standing by better responding to stakeholder expectations.

3.3.6.1.2 Environmental policies

Environmental ethics will become increasingly important as it become more widely understood. According to Chan and Chan (2004), pollution control such as noise pollution, water pollution, air pollution, asbestos control and waste disposal have a significant impact on construction and property development. Ofori (2000) recommended measures for developing countries, which have been taken by many industrialised countries to ensure that their construction industries adopt materials, techniques, and practices, which result in operations and products that have a lower environmental impact. They include: i) market forces - clients' insistence on better environmental performance; ii) institutional initiatives - professional bodies offering advice and support services to members, iii) operational environment - action of pressure groups and informed users, and specifically, iv) governmental action - legislation and regulation on environmental performance; requirement for licence and approvals, subsidies, tax incentives and grants.

Initiatives on the protection of environment have been enhanced mostly in developed countries. One of the most important political issues of the late 20th century has been environmental protection and the rise of the environmental movement. This movement has sought to control the introduction of toxic and unnatural substances into the environment, to protect the integrity of the biosphere, and to ensure a healthy environment for humans (Fleddermann, 2004). However, according to Shakantu *et al*.

(2000) development of appropriate environment policies and practices is considerably essential. Increasingly, governments at national and international levels are subscribing to the "polluter pays" principle, whereby environmental impacts will be charged to the companies which cause them (Smith, 1997). Developing countries should consider these initiatives to protect the environment in the process of construction development.

Shakantu *et al*. (2000) proposed that having strong sustainability credentials such as community care policies and sound environment policies and could enhance competitive advantage for everyone involved in a project. The government is a major player in the construction industry; therefore, there is considerable scope for its policies to have an effect on sustainable construction (DTI, 2000). Construction industry should take it upon itself to support the different legislations that deal with sustainable development (Shakantu *et al.*, 2000) and environmental protection. CIRIA (2005) contend that it is important to recognise that the relevance of sustainability issues will change over time so the process of identifying and prioritising them will be a continuous process. They suggest, among others, that tightening regulatory framework will need to be reviewed regularly. However, in Malaysia, implementation of regulations and guidelines is believed to be low because of several factors such as lack of knowledge, poor enforcement of legislation, education versus experience and passive culture (Zainul Abidin, 2010).

Glass and Simmonds (2007) also commented that despite the presence of national legislation and compliance schemes, the performance of the construction industry in minimising the impact of its activities continues to be called into question. For example, Barthorpe (1999) pointed out that weak and inconsistent monitoring causes most concern to the public. Mason (2010) advocated that the promotion and regulation of

environmental aspects of construction activity are examples of what is achievable through ethical approach.

The discussion reveals that community involvement and communication are necessary to gain their perspectives on a particular project, especially for projects which affect the environment and community a large. However, some might argue that this could delay the development of the project or maybe to extreme of shelving it. Whatever the outcome of the project, parties in the project (and the approving body) should outweigh community interest first before their own interest for the good of all. For ongoing projects, the work should be carried out according to the guidelines outlined by the authorities including preventive and corrective measures to minimise and reduce environment impacts. In addition, stiffer fines and stringent regulatory procedures by relevant regulatory body are necessary to deter any acts or violations of the rules imposed upon construction of the project, for example, on EIA violations.

In Malaysia, Enviromental Impact Asseement (EIA) is required under section 34A, Environmental Quality Act, 1974, which specifies the legal requirements of EIA for activities which may have siginificant environmental impact. EIA is defined as the systematic identification and evaluation of the potential impacts (effects) of proposed projects, plans, programs, or legislative actions; relative to the physical-chemical, biological, cultural and socio-economic components of the total environment (DOE, 2010). It seeks to avoid costly mistakes in project implementation, either because of; i) environmental damages that are likely to arise during project implementation, or, ii) modifications that may be required subsequently in order to make the action environmentally acceptable (DOE, 2010). Thus, its main aim is to asess the overall

impact on the environment of development projects proposed by the public and private sectors.

3.3.6.2 Legislative enforcement

Fox (1999) indicates that a government's role is the most important influence upon the development of the construction industry. This is due to the government influence in executing functions such as education, legislation, regulation, fiscal and monetary policy (Latham, 1994). Hence, another key thrust to improve ethics in the construction industry is government legislations and regulations or regulatory regimes.

Regulatory bodies and regulation is an essential tool to "check" unethical practises in the industry; thus, there should be specific laws imposed by the government to achieve this objective (Miodonski, 2004). Fox and Skitmore (2003) in their commentary on the Hong Kong Construction Industry Review Committee Report (HKCIRC, 2001), especially on the long-term vision and policy for the industry, reflect the evidence of the crucial role of the government in legislating/regulating the behaviour of the industry stakeholders.

As illustrated by Holian (2002), for example, when a client asks a professional of a consultant firm to do things illegally, it can put the organisation's license and the employment of the professional in jeopardy. However, when the industry is bound by a piece of legislation that gives a good out, it can be a backup for professionals to say no to the client. A more clear-cut solution suggested by Rick (2005) as a result from the FMI/CMAA Survey of Construction Industry Ethical Practices and Issues in the US (FMI/CMAA, 2004) is to impose stiffer penalties for those caught in unethical acts in

the industry. According to Mason (2010), if a prosecution system could be established, it would definitely reduce the number of infringements.

Another crucial issue that should not be overlooked is how we could reduce corrupt practices whether in the public or the private sector. Indeed, there are political and economic decisive factors that basically influence the way we could reduce the corruption phenomenon. According to McCormick and Paterson (2006), the most important factor in reducing corruption is political will and commitment. The authors suggested that everything would be different if governments, international financial institutions as well as the commercial banking industry would admit the scope of corruption and take collective action in order to reduce its negative effect on the economic growth as well as reputation of the receivers, i.e., those who receive bribes, kickbacks, etc. Nevertheless, the essence of regulating unethical practice is with the government. As pointed out by Mason (2010), a government backed industry regulatory body capable of enforcing ethical abuses is required.

Why is there a need for such regulatory bodies? An example of the need for regulatory bodies is set out by Lawton (2005), as in the UK public service, where, the trend is to move from an integrity model which trusts individuals and organisations to regulate themselves, to a compliance model. He added that, in the case of public service, there is a perceived need to ensure uniformity in delivery; to control what might be seen as professionals who cannot be trusted to regulate themselves and to support a performance-oriented culture with penalties incurred for not meeting central targets. Thus, it is indisputable that legality can play a part.

The discussion above identifies that government regulatory regulations are required to ensure that unethical practices in the construction industry should be monitored and penalised. Another approach that can improve ethics in the industry is by way of an ombudsman. Clevenger *et al*. (1996) suggested that it is crucial that an ombudsman service for the industry be appointed by the legislative body. He added that the function of ombudsman is to receive, investigate and report on complaints received of unethical practices. This role is similar to the ethics officer in the organisation, but to a much bigger scale for the industry.

One of the suggestions put forward by Hui *et al*. (2011) on their study on procurement systems in Malaysia is that - there should be an independent and trusted whistle-blowing channel that could facilitate stakeholders who feel that they are being victimised by the system. The stakeholders must also be informed of the various mechanisms available for them to resolve grievances. This idea is relevant and similar to an ombudsman which should target not only procurement issues but any other unethical practices within the industry. Hence, participants from any industry player or the public could come forward and draw attention to ethical issues within the industry without fear of reprisals from their own organisations.

3.3.6.3 Accountability and customer satisfaction

Accountability is one of the most important concepts in politics and economy today. Stewart (1984) emphasises that those who exercise the power of government or corporate office have to be publicly accountable for their actions. Accountability refers to the responsibility to report about the extent to which individuals or organisations have met the responsibilities for action placed on them - compliance with a responsible code of ethical behaviour (Gray *et al*., 1988). It has frequently been presented as

rational practice to ensure responsibility by individuals and institutions which should be implemented in all civil societies, economic institutions and organisations (Velayutham, and Perera, 2004).

With regards to Muslims, Allah the Almighty says; "O ye that believe! Betray not the trust of Allah and the Messenger, nor misappropriate knowingly things entrusted to you." (Al-Quran, Al-Anfaal: 21). Another Qur'anic verse, "Allah commands you to render back your trusts ("*amanat*") to those to whom they are due" (Al-Quran, Al-Nisa: 58). Badron (2006) explains that the term "*amanat*" or "*amanah*"' here denotes everything one has been entrusted with, be it in the physical or moral sense. If there is an obligation due to someone, that duty is considered a trust which must be discharged. For example, if someone is employed to do a certain job, then, feeling responsible and doing it well is also the act of discharging that trust.

The concept of accountability does not only apply to the public sector (Barrett, 2000) The Boards of private sector organisations are also accountable to their stakeholders (Hughes, 2003). Public servants have to take the influence of politics into consideration in the implementation of their duties while the private sector gives more attention to the market mechanism (Stewart, 1999). As for public services, the key issues in developing countries are capacity building, controlling corruption and political decentralisation (Polidano and Hulme, 1999). Therefore, the effective and efficient use of resources in public management requires commitment to driving down costs and exploiting value opportunities. Construction professionals in the public sector, being a civil service, must be aware of social, political and ethical requirements that can impinge upon strict economic reasoning (Holt and Rowe, 2000). The main task is to ensure that those construction professionals serving the public interest do not put their private interests

ahead of the nation and its citizens to ensure honest and transparent management of public funds.

Datta (2000) pointed out that the construction industry hardly thinks about the client or the consumer it is serving, rather invariably tends to think about the next employer in the contractual chain. He added that there is no systematic research on what the end-user actually wants; neither does the industry seeks to raise the customer's awareness and educate them to become more discerning. These reveal a realisation that the industry has no objective process for auditing clients' satisfaction, whether public or private client.

Post project reviews (Busby, 1999) and post mortems (Jawaharnesan and Price, 1997) are very useful methods for detecting shortcomings in project management and making recommendations for future improvements. However, these methods are normally intended for the purposes of improvement for the project management team. Further strategies are needed to improve the delivery of construction projects to the end customers, especially in public projects. Without indicators for assessing the behaviour of the industry, government cannot be sure that their policies are appropriate and are achieving their intentions (Fox, and Skitmore, 2000). Good understanding by the government of the way the industry thinks implies that they need to have ways of measuring the performance of the industry.

It was identified that in addition to undertaking post project reviews, measurement of effectiveness by using key performance indicators and benchmarking, is a key strategy to achieve excellence by the government construction client in Northern Ireland (GCCG, 1999). A study by Holt and Rowe (2000) on critical leadership in public

projects in the UK suggested ways to enhance the role of client project sponsor (the government). One of their recommendations is for the project sponsor to set and employ clear targets such as target costs, key performance indicators and benchmarks arrived at in conjunction with a project team so that, whilst guidelines are used consistently, they would be sensitive to each project's unique demands, and ultimately, the end-user customers.

Customer satisfaction is perhaps one of the most talked about challenges of organisations, both in public and private sectors. Murugavarothayan and Coffey (2000) reveals that customer satisfaction is an important performance indicator of professional services by construction consultants used by clients, but one that is poorly understood by the latter and rarely accorded the importance it deserves. In a study on challenges facing the construction industry in developing countries (Datta, 2000) asserted that clients, both public and private should be much more demanding. Developing countries like Malaysia should emulate this step forward towards customer as the focus.

According to Velayutham and Perera (2004), transparency and full disclosure are often described as essential prerequisites for achieving accountability. Transparency is defined as laws, regulations, institutions, processes, plans and decisions that are made accessible to the public at large or at least to "representatives" of the public so that processes and decisions can be monitored, reviewed, commented on and influenced by the stakeholders, and decision makers can be held accountable for them (Transparency International (2006a). Hence, in order to show transparency and to value what the citizens think, a "public satisfaction index*"* comparable to a "customer satisfaction index" is suggested to monitor accountability and establish customers' satisfaction (Velayutham, and Perera, 2004), specially for the construction projects. Thus, a

customer feedback system should be developed within the industry and be duly emphasised when making decisions involving the interests of customers.

3.4 Summary

The literature review has presented a structure of ethics management towards developing a framework to improve ethics in the construction industry. It is a holistic approach where significant factors that can affect and contribute to improve ethics to the industry are considered: i) beginning from the individual's early education background, ii) followed by professional education and training, then, iii) the working environment, that is the company or organisation, iv) industry factors , v) system and procedure, and finally v) other factors; that is legislative enforcement, environmental ethics, accountability and customer satisfaction which are linked and related to the others.

A major concern for our society and the industry has always been education and professional training, especially so for academics and professional practitioners. Hence, life-long learning is required to establish, maintain and elevate the level of accomplishment of professionalism, especially in the education and training in ethics. Code of ethics is also necessary as a parameter for professionals to behave and act ethically, and at the same time as a deterrent against unethical conducts.

As for organisations, the company's commitment in ethics management is crucial. They include i) code of ethics, ii) ethics office and training iii) ethics officer, iv) whistle blowing, v) leadership, vi) employees' welfare regarding selection based on ethical attributes, appraisal on ethical performance, and rewards for organisational commitment, and finally vii) transparency on the organisation's activities. Thus, leaders

in the organisation cannot rely on the ethics of the employees alone, they have to structure the organisational context such that to improve ethics in the organisation.

Industry factor, specifically on a standard code of ethics for all industry participants, are considered next. Following this, system and procedure in the industry is discussed. The principal factors considered are tendering and procurement practice, site safety, quality of work and timely payment. Other factors that can contribute towards improving ethics in the industry are environmental ethics; specifically on the strategies with dealing with impacts to the community and environmental policies.

A significant player in the pursuit to improve ethics in the industry is the government, by means of legislations and regulations. Finally, accountability is essential to ensure responsibility by all concerned in any construction projects in the industry. In relation to this, performance indicators or satisfaction index is necessary to monitor accountability and establish the customer satisfaction, as the final end-user.

Following literature review, the next chapter will discuss the research design and methodology adopted in the formulation and development of a framework to improve ethics in the construction industry.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This chapter explains the research approach, design methodology and processes in the research. It also includes the rationale behind chosen methods and techniques employed which relates to the objectives of the research.

4.2 Research approach

The steps involved in research are: i) observation-when the observed phenomena are seen to have potentially important consequences, we can then proceed to the next step, ii) preliminary information gathering, iii) theoretical framework formulation, iv) hypothesising, v) data collection and analysis, and vii) deduction (Sekaran, 2003). However, in this research no hypothesis has been developed as illustrated in the following research approach.

This research aims to develop a framework of factors to improve ethics which can be adopted by educationists, professional bodies, industry players and policy makers in Malaysia. In order to achieve the aim, the research has been divided into four main phases, as shown in Figure 4.1.

1. Phase 1 is the preliminary information gathering or preliminary investigation through informal unstructured interviews with experts to get an idea or a 'sense for the 'observed phenomena' (Sekaran, 2003).
2. Phase 2 is the conceptual framework formulation which was based on the following approaches:
    a) Phase 2a: Secondary data which refers to information gathered by someone other than the researcher conducting the current study and from

sources already existing (Sekaran, 2003), collected through literature review. The sources of secondary data include books, journal articles, conference papers and publications from government bodies, professional institutions and industry associations. Also included in secondary data are the media reports and speeches delivered by key personnel in organisations and government bodies, and

b) Phase 2b: Primary data gathered during pilot study through semi-structured interviews with industry players. Primary data is important because it is firsthand information obtained by the researcher on the variables of interest for the specific purpose of the research (Sekaran, 2003). It is helpful to meet the specific needs of the particular situation or setting as in the research; that is, the construction industry in Malaysia.

c) The primary and secondary data form the development of a conceptual framework of factors which also forms the basis for the questionnaire design.

3. Phase 3 of the research involves data collection through questionnaire survey with industry players. Consequently, analysis of data was carried out. This phase involved empirical evaluation of quantitative technique to statistically confirm and develop an established framework.

4. Phase 4 involves industry validation through interviews with experts to validate the framework of factors that has been developed to improve ethics in the industry.

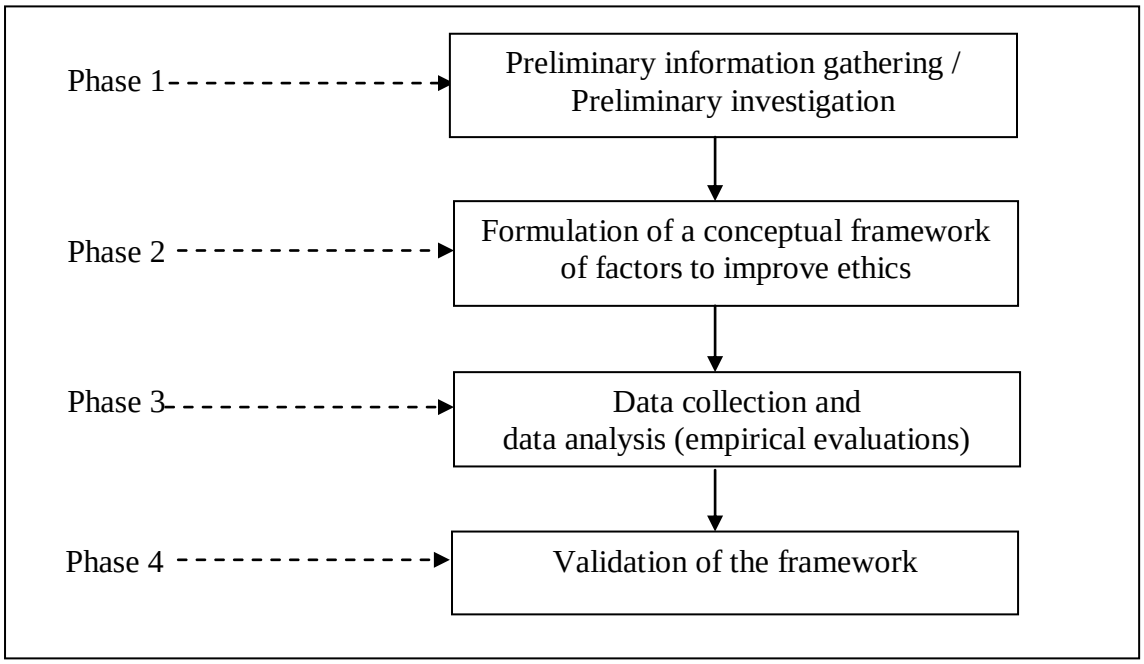

Figure 4.1: Research framework: framework of factors to improve ethics in the construction industry

4.3 Research design

A research design is not just a work plan (de Vaus, 2004). A work plan details what has to be done to complete the project, but, most importantly the work plan will flow from the project's research design (de Vaus, 2004). Research design describes each of the research components and how they are incorporated and linked together in the process (Mohammad, 2006).

The appropriate research design chosen should take into consideration the specific purpose of the research study (Sekaran, 2003). The research design used for this research is the sequential mixed methods design (Creswell, 2005, 2003). The reason for conducting a mixed methods study is to seek, to explain through qualitative research, the initial quantitative statistical results (Creswell, 2005). The steps of this strategy are shown in Figure 4.2, where priority is placed on quantitative data (QUAN) collection and analysis and a small qualitative (qual) component follows in the next phase of the research.

Quantitative method provides the opportunity to gather data from a large number of people (a population) and generalise results, whereas qualitative permits an in-depth exploration of a few individuals (Creswell, 2005). A study by Moylan (2005) who examines the values based leadership traits critical to success in the construction industry showed that the results of mixed methods research (quantitative and qualitative) support the objectives of the study. As Harris (2000) appropriately puts it if, more data resources are introduced, they can be used to confirm or explain differences among the others.

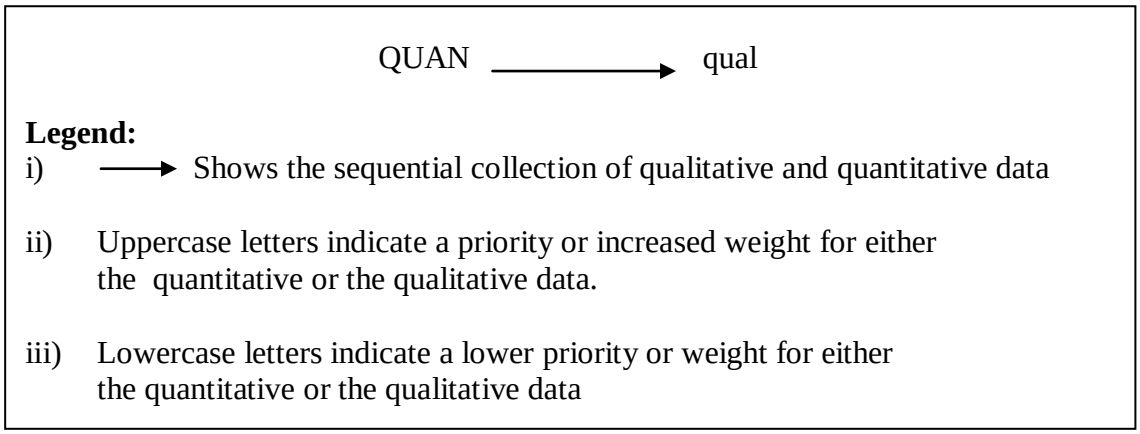

Figure 4.2: Mixed method design (Creswell, 2005, p. 514)

In this research, a mixed method research design was applied for a practical knowledge claim with different strategies of inquiry (Creswell, 2005). For the purposes of the framework formulation, qualitative pilot interviews were conducted to modify, assess and enhance the framework features identified during the literature review. After the qualitative evaluation and assessment were completed, quantitative data (QUAN) collection was conducted through industry questionnaire survey to statistically confirm and provide a more established framework. The next step was a participatory knowledge claim, through qualitative (qual) approach (Creswell, 2005) to validate the framework features carried out through interviews with experts. Figure 4.3 shows the various research methods for different objectives as explained in this section.

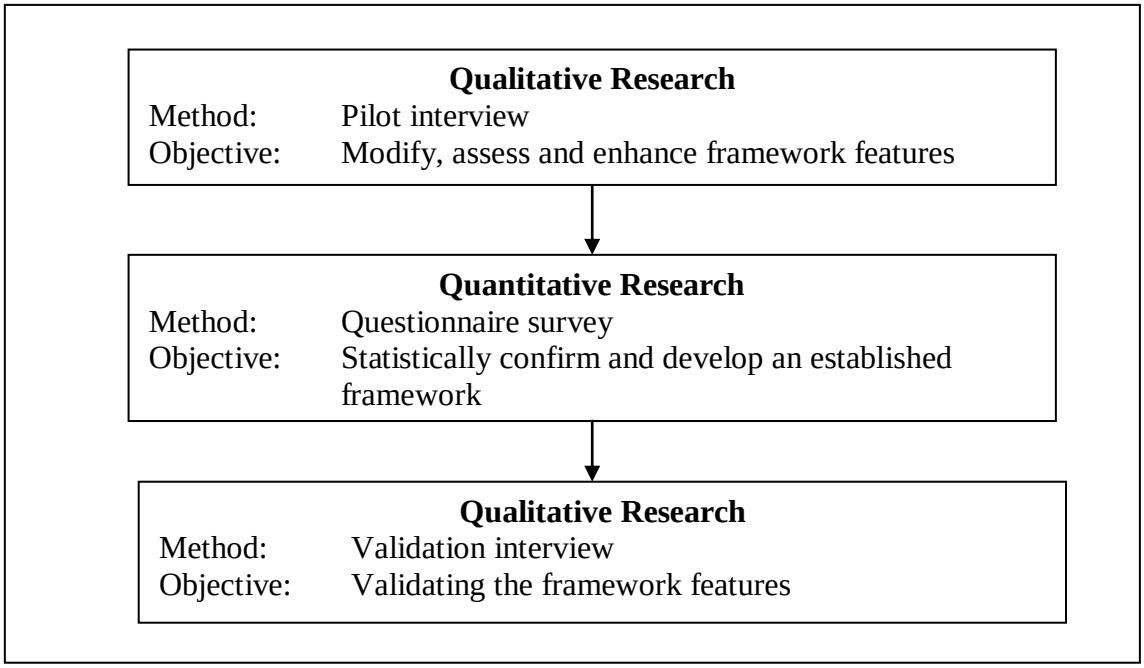

Figure 4.3: Research design: Various research methods for different objectives

4.4 Research process

The research was developed based on the four research phases described earlier. These phases were the basis of the research process, where appropriate tasks were undertaken and different methods used to achieve the objectives of the research. The framework of factors to improve ethics was the result of interpretation of findings through these research processes. Figure 4.4 illustrates the research process which includes the research phase, objectives for each phase, methods used - adopting appropriate qualitative and quantitative research methods; and the source and scope of area covered or participation from industry (adopted and modified from Mohammad, 2006). Each process is described further in the following sections.

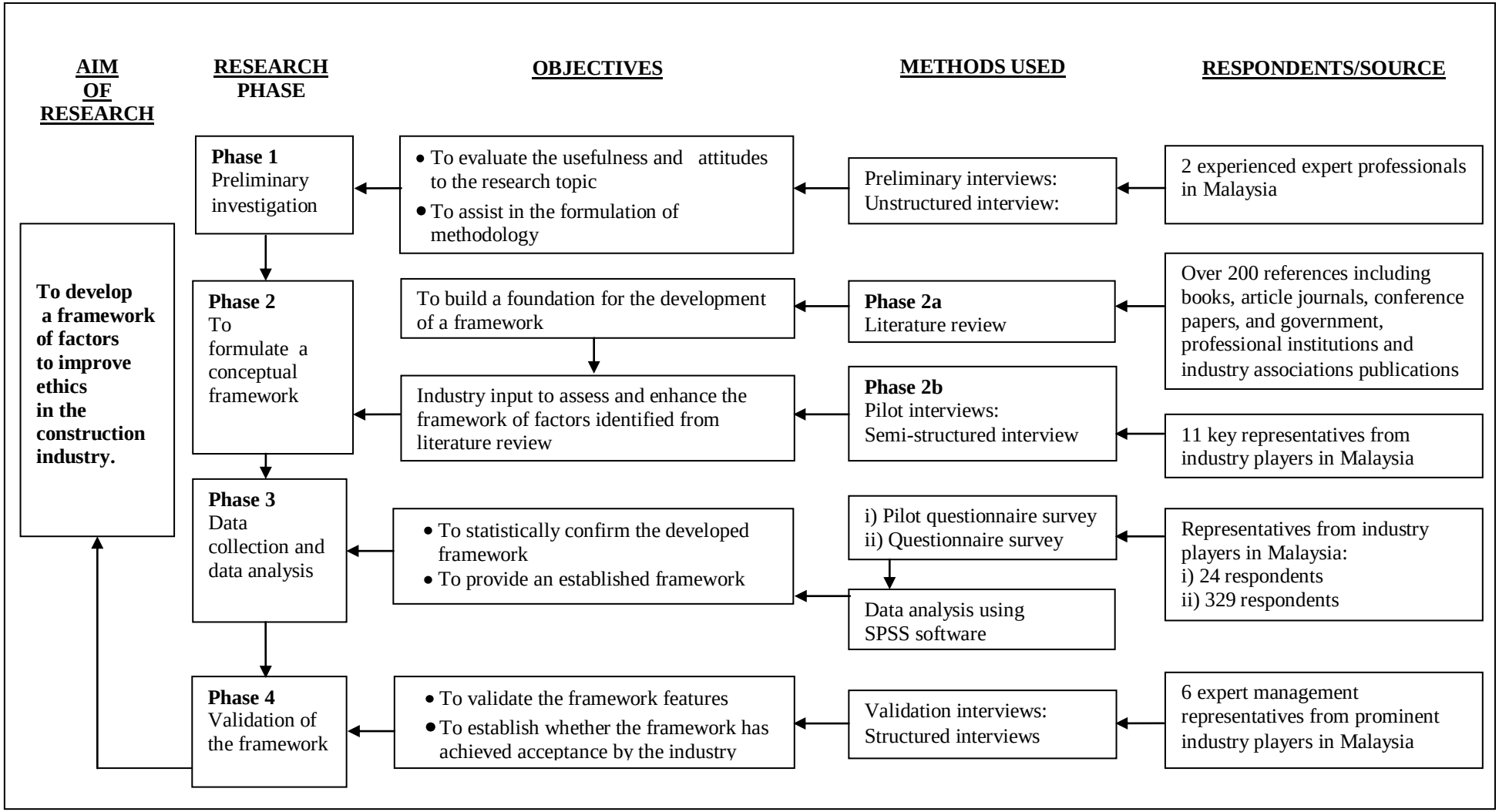

Figure 4.4: Research process: research phase, objectives, methods used and the respondents/source

4.4.1 Preliminary investigation

Preliminary investigation is the process of becoming familiar with the context in which you are going to conduct your research (Hussey and Hussey, 1997). According to Saunders *et al*. (2000), some authors, for example Bennett (1991), refer to this as a preliminary study, which may be in the form of informal discussions with people who have personal experience of and knowledge about your research ideas.

This research was initiated following observation of ethical issues in the industry mainly through the media and conference initiated and conducted by CIDB Malaysia (CIDB, 2005b) which was seen to have potentially important consequences. Subsequently, preliminary investigation was carried out through two unstructured interviews with experienced experts to authenticate the need for the research. The overview and analysis of the preliminary investigation interviews is discussed in Chapter 5. The underlying purpose is to explore the general area of ethics in the industry, in which the researcher was interested in, and, to gain a greater understanding so that the research area can be refined, in order to turn it into a research project (Saunders *et al*., 2000).

4.4.2 Formulation of a conceptual framework

A framework is a broad overview, outline, or skeleton of interlinked items which supports a particular approach to a specific objective, and serves as a guide that can be modified as required by adding or deleting items (Business Dictionary, 2011b). In relation to this, a conceptual framework is a written or visual presentation that i) explains either graphically or in narrative form, the main things to be studied - the key factors, concepts or variables, ii) and the presumed relationship among them (Miles and Huberman, 1994, p. 18). According to Vaughan (2008), a conceptual framework

provides the structure/content for the whole study based on literature and personal experience. He explained that it is made up of the following steps:

1. aims and objectives - what we want to know and how the answer may be built up;
2. literature review - a critical and evaluative review of the thoughts and experiences of others;
3. data collection and analysis - methodology, methods and analysis;
4. interpretation of the results -conceptual framework develops as participants' views and issues are gathered and analysed;
5. evaluation of the research - revisit conceptual framework; and,
6. conclusion - acts as the link between the literature, the methodology and the results.

The processes outline above is followed through in this research. The research process continued with the formulation of a conceptual framework developed through literature review, which was based on previous researches and findings on issues of the subject-matter within the industry across the regions. This was later substantiated by pilot interviews which were carried out with key representatives from industry players. The framework formulation is discussed further.

4.4.2.1 Literature review

The purpose of the literature review is to identify and highlight the important variables and to document the significant findings from earlier researches that will serve as the foundation on which the framework for the current investigation can be built (Sekaran, 2003). In this research, literature review was carried out to develop a framework and construction of questionnaire for the next phase of data collection.

During literature search, out of approximately 200 articles or papers found, only about 20 articles were closely related to ethics in the construction industry. Most of the areas of study investigated ethical standards of the players, ethical issues or unethical practices in the industry. Despite the concern revealed in most previous studies of the widespread unethical practices in the industry, it was apparent that a gap exists in the literature where scarce studies were found, mentioned or deliberated, on the ways to improve ethics. However, this could be due to the sensitivity associated with ethics, where industry players are hesitant to acknowledge and share ethical discourse, especially when the construction industry is one of main economic catalysts of most developing countries.

The major and relevant literature reviewed includes relevant theories of ethics, ethical issues and ethics management in improving ethics. These issues and theories were reviewed both in general, particularly in business entities, and specifically in relation to the construction industry. Literature review has been discussed in the previous Chapters 2 and 3.

4.4.2.2 Pilot interview

Eleven semi-structured interviews were conducted to assess, confirm or modify the framework. When conducting this method of interview, the researcher makes reference to an "outline" of the topics to be covered (Corbetta, 2003), identified during the literature review. Semi-structured interviews were used because they are flexible in terms of the order in which the topics are considered, more significantly, to let the interviewee develop ideas and speak more widely on the issues raised by the researcher (Denscombe, 2003). The interview covers the perception of industry players with key representatives from i) the clients; public clients from the government sector and private

clients from developers, ii) contractors, iii) consultants; and academicians. This helps to broaden the scope of the research within the construction industry in Malaysia. The overview and results of the pilot interviews is discussed in Chapter 5.

The interviews involved in-depth examination of particular problems or issues and suggestions to improve ethics in the industry. These issues and suggestions or factors to improve ethics were taken into account in the construction of the questionnaire for industry survey. The main resultant of the two processes of literature review and the interviews is the development of a conceptual framework for factors to improve ethics in the industry.

4.4.3 Questionnaire survey

The objective of the questionnaire survey is to confirm the current issues and factors to improve ethics in the developed framework as highlighted in the literature review and pilot interviews, through the perception of industry players by statistical analysis (Mohammad, 2006). A questionnaire survey was employed to collect quantitative data about current attitudes, beliefs, opinions or practices (Creswell, 2005) to a sample of players from the target population. This data was statistically analysed to produce results to assess the frequency and magnitude of trends or characteristics of the population (Creswell, 2005).

A pilot survey was conducted with 24 professionals of various disciplines from the organisations of public and private clients, contractors and consultants. This was necessary to test the overall design, objectives and approach of the questionnaire, and, to assess the anticipated perception of respondents towards the actual questionnaire

later. Feedback from the pilot survey was considered, and the questionnaire was improved and re-drafted for the following industry survey.

The empirical testing of the conceptual framework using the questionnaire survey covered respondents from companies/organisations of public and private clients, contractors and consultants. They are considered to be in the best position to represent the perception in the industry during the questionnaire exercise. The questionnaire was conducted with 329 valid responses and a response rate of 33%. An overview of the background of the questionnaire and survey is explained in Chapter 6. The data analysis and discussion of results of the survey is discussed in Chapter 7, where the developed framework of factors is statistically confirmed.

4.4.4 Validation

The final step in the research process is the validation of the developed framework. This exercise is important so as to be able to validate the framework consisting of factors to improve ethics in the construction industry. The structured interview method was conducted based on a predetermined and standardised set of questions. The interviews were conducted with six expert management representatives from prominent players in the industry. The validation process focused on the framework with the intention of confirming them. It is a platform to test and assess the framework and to establish whether it has achieved the reasonable level of acceptance by the industry. The validation process has also highlighted significant factors in the framework. The overview and discussion on the validation interviews is discussed in Chapter 8.

4.5 Summary

The research process was initiated with the preliminary investigation interviews, followed by the process of the formulation of a conceptual framework through literature review and pilot interviews. As a result, a questionnaire was constructed, and piloted first, before conducting industry survey. Subsequently, data collected from the industry through the questionnaire survey was empirically evaluated to statistically confirm the developed framework. It was subsequently validated by experts from prominent industry players from the aspects of suitability, approach and significance of the factors incorporated. The qualitative and quantitative methods used, and the source and scope of area covered/ participation from the industry was also explained for each research process.

The following Chapters 5, 6, 7 and 8 will discuss the research processes, which incorporate, and employ different research methodology approaches as outlined in this chapter.

CHAPTER 5

PRELIMINARY INVESTIGATION AND PILOT INTERVIEWS: OVERVIEW AND RESULTS

5.1 Introduction

During the initial stages of the research, information gathering was carried out through preliminary investigation by interviewing experts in the research area. The underlying purpose was to get an idea or a 'feel' for what is transpiring in the industry with regards to the research topic (Sekaran, 2003). Subsequently, in order to complement and supplement the literature review for the framework formulation, pilot interviews were carried out with industry players.

Interviews are the best tool to gather experts' opinion, bringing in local characteristics and reflecting the current industry view. According to Denscombe (2003), interviews are an effective method in providing a more in-depth insight into the research topic, drawing on information provided by fewer informants. The types of interview commonly used are related to the level of formality and structure where, interviews may be categorised as structured, semi-structured and unstructured interviews (Saunders *et al*, 2000). The major differences in the interview types lie in the constraints placed on the respondent and the interviewer (Fellows and Liu, 2008; Corbetta, 2003) which include, purpose of interview, accessibility of individuals and amount of time available. For this research, for the preliminary investigation, interviews were conducted using the unstructured approach, and later after the literature review, for improvement of the framework formulation pilot interviews were conducted using the semi-structured approach; towards developing a conceptual framework.

The following sections in this chapter will explain the background of the preliminary investigation and pilot interviews which covers the objectives, scope and limitations including the interview approaches and discussion of the results from the interviews.

5.2 Preliminary investigation background

5.2.1 Objectives

As a first step in the research process, Phase 1 is crucial in order to gather preliminary first hand data towards developing the area of research on ethics. The main objectives of preliminary investigation are to:

- give an indication of the usefulness of the proposed research to the industry;
- evaluate attitudes to the proposed research; and
- to assist in the formulation of methodology to apply for the main investigation.

5.2.2 Scope and limitations

The interviews were conducted with two respondents who have vast experience and exposure in relation to ethics in their respective work within their organisations. The criteria for selection of the respondents include their background experience and expertise as outlined in Table 5.1. Respondent 1 is from the public sector client construction organisation. Views from the government sector were necessary to obtain the real picture, since much has been observed from media reports about the ethical performance of government projects. Preliminary interview with Respondent 2 from the telecommunication industry is justified, as he has conducted a similar and related field of study in ethics focussing on spiritual capital at the PhD level for his organisation. The main intention was to substantiate this research in ethics for the construction industry through understanding from the respondent's experience in his previous study for the telecommunication industry, which is directly customer-oriented.

Table 5.1: Background and experience of respondents for preliminary investigation

No.	Background		Professional discipline	Experience
	Designation	**Organisation**		
1.	Senior Director	Client from public sector	Quantity surveying	• Over 30 years of experience in the construction industry. • Extensive background in a variety of project settings: hospitals, universities, other types of buildings and infrastructure projects. • Drawing-up and implementation of procurement policies for government projects.
2.	General manager	Government listed company (GLC) in the telecommunication industry	Electrical engineering	• Over 20 years of experience in the infrastructure of telecommunication • Has carried out similar study at PhD level for his organisation which focuses on spiritual capital, a component for good ethics.

The interviews were conducted individually with both respondents during office hours and took an average of one and a half hours. The interviews were general and unstructured and were conducted by introducing the research theme, which is ethics, and then letting the interviewee develop his or her ideas. Allowing the interviewee to "speak their minds" is a better way of discovering things about complex issues (Denscombe, 2003). Though the basic theme of the conversation has been chosen beforehand, different sub-themes nevertheless arose during the interviews between the two respondents, which were reflected in their background and experience. According to Corbetta (2003), different interviews might emphasise different topics, and if these are seen to be relevant and important, they will be developed further.

5.2.3 Respondents' perceptions

During the interviews, both respondents introduced and highlighted relevant issues and topics under the research theme of ethics. Accordingly, the researcher undertook the task of organising and categorising the issues and topics as deliberated by them into several key sub-themes as in Table 5.2 and Table 5.3.

Due to Respondent 1's background and experience, his sub-themes were appropriately related to the construction industry. His perceptions are categorised and summarised in Table 5.2. Analysis of interview with Respondent 1 is discussed further here. He highlighted that the main problem of the declining ethical standard in the industry is the accepting and complacent attitude of the industry players on unethical practices. He suggested core strategies for change which are education, systems and work procedure and legislation. These strategies were then explored deeper, citing factors that can help to improve ethics in the industry. He stressed the importance of education in ethics for professionals. Regarding system and work procedure in the industry, procurement methods during the pre-contract stage and management during construction works are also given due consideration by the respondent. As for legislation, the respondent pointed out the major role that the government can play, and at the same time, not to overlook the role of organisation itself, which will affect the overall ethics in the industry. Another important issue is a system that can regulate contractors in order to curb unethical contractors from tendering for projects. When the question on the relevance of the research area and methodology of research was posed, the respondent validated the need of a *comprehensive* study in order to revolutionise ethics in the industry. He added that findings should be substantiated by statistical evidence, which could be in the form of a survey as "proof" of realities in the industry. The interview was concluded by the respondent advocating the need for change and he reiterated that

the way forward is towards improving ethics in the industry. This is necessary for the industry players so that the industry can thrive and be globally competitive.

The interview with Respondent 2 is categorised and summarised in Table 5.3. Due to his previous research which was carried out within his organisation in the telecommunication industry, his sub-themes were focussed on the realism in pursuing research on ethics and the methodology to be adopted. He started the interview by pointing out the common perception of ethics as being subjective and added that ethics can be developed in an individual. The outcome of good ethics can bring good results to him, his organisation and industry and ultimately the customers of the industry. He asserted that compared with the telecommunication industry, the construction industry is very fragmented in its nature, involving many different players. However, he added that there are common factors affecting the ethics of any industry, emphasising on leadership roles and the organisation itself. Concerning the methodology of research, the respondent proposed and reasoned out that the best way to gather data from industry players is by conducting a pilot interview followed by a survey. Before ending the interview, he acknowledged the sensitivity related to the research area which may stir mixed responses from industry players, especially objectionable reactions during the survey. The best way to deal with it is to be able to explain to them the objectives and the justification of the research and make them understand that what counts from their response is their experience working in the construction industry, and the research not meant to be judgemental of their ethical behaviour.

Table 5.2: Perceptions of Respondent 1

Sub-themes	Respondents' perception
Standard of ethics	• The main problem lies in the ethical framework of industry players which he terms 'attitude or culture'. • The industry players are accepting and complacent with the declining ethical standard and unethical practices of the industry.
Strategies for change: • Education • Systems and work procedure • Legislation	• We need to change the attitude or culture, by changing: ▪ How we educate people ▪ How we work ▪ How the industry is regulated
Factors to improve ethics: • Ethics education • System and procedure • Government's roles • Organisation's roles	• Educating present and future professionals particularly in ethics • Procurement procedure • Supervision and regulating of construction work • Government intervention in rules and procedure • Organisational approaches towards ethics
Regulating contractors	• <u>Present situation</u>: We have too many contractors who just wanted to become contractors for the main reason of profit • <u>Suggestion</u>: It is important to have efficient and proactive ways to de-list "bad" contractors, not only with regards to the normal expectations of a project, but, also moral duty to clients
Relevance of research area	• This study will be a "breath of fresh air" - somebody, somewhere, needs to look into the problems of ethics in the industry and find ways to improve it.
Methodology for research	• A comprehensive study is necessary, backed-up by data or "proof" from the industry players
The need for changes	• <u>Present situation</u>: Times are changing. We have entered the global market and there is a need to compete with the countries who work in a more ethical manner. • <u>Suggestions</u>: ▪ Changes can be made if we work together in an atmosphere of trust and transparency if we want to help the industry grow. ▪ Changes are needed in order to improve ethics, let alone achieve it in the industry.

Table 5.3: Perceptions of Respondent 2

Sub-themes	Respondents' perception
Subject matter of ethics: • Perception on ethics • Ethics can be developed • Outcome of good ethics	• The common belief is that people always perceive ethics as a subjective matter. • Ethics is not just about the spiritual good being of a person. A man can be guided and moulded to become an ethical person, which can lead to an ethical organisation, and eventually, an ethical industry. • The eventual result of good ethics is improved performance of the work undertaken; bringing satisfaction to the client or customer, which is the ultimate goal.
• Comparison of construction and telecommunication industry • There are common factors affecting ethics	• The construction industry is unique and diverse involving many types of players as compared with the telecommunication industry, nevertheless; • The contributory key factors that are common to any industry, the roles of: ▪ Leadership ▪ The organisation.
Methodology of research: • Gathering of data	• Pilot interviews need to be conducted to verify findings in literature review and to gain insight from local industry. • Then, a survey with industry players to investigate the state of affairs of local industry.
Sensitivity related to the research area: • Reality • Recommendations	• The research of ethics is sensitive and can simulate a positive and mostly negative response from industry players. From experience in his study, he cautioned that the most challenging part will be the questionnaire survey, where the researcher can be ridiculed for investigating the area in ethics. • Explain and defend, if necessary the objectives and need of study. • Explain that their responses are not a reflection of personal behaviour, but based on their experience working in the construction industry.

5.3 Pilot interview background

5.3.1 Objectives

Phase 2 of the research process started with Phase 2a which is the literature review. Following this, Phase 2b which is a second stage interview, referred to, as pilot interview was conducted to obtain comments and suggestions from the industry on core research issues relevant to the Malaysian construction industry. The main objectives of the pilot interview are to:

- identify current issues and problems in the industry (Mohammad, 2006),
- identify suggested solutions for the issues and problems (Mohamad, 2006),

  - as opposed to issues, problems or solutions gathered from literature review (Gardiner, 1992);
- test the sustainability and verify the integrity of the factors to improve ethics identified from literature review towards developing a conceptual framework; and
- to help shape the form of the questionnaire survey.

5.3.2 Scope and limitations

In order to gain a representative overview of the industry, interviews were conducted with 11 respondents of various professional disciplines from both the public and private sectors representing various types of organisations, with the majority of them actively involved in the industry. Their positions in their organisations range from General Manager, Senior Director, Head Architect, Senior Managers, Contracts Executive, Corporate Ethics Specialist and Director General from a government body. The respondents also include three Professors from local universities, with and without construction training backgrounds. For check and balance, three respondents from the governments' policymaking and enforcement organisations were interviewed

(Respondents 9, 10 and 11). The respondents' background and experience are outlined in Table 5.4.

The criteria for the respondents' selection were:

- all the professionals have more than 20 years working experience;
- each has extensive experience in a variety of project settings, contract types, and work locations;
- except for the respondent from Institute Integrity Malaysia (Respondent 10), all respondents have an educational background related to the construction and engineering field and represent various industry players; i.e., public and private sector clients, contractor and monitoring body, and also academicians;
- both the professionals from Construction Industry Development Board (Respondent 9) and Institute Integrity Malaysia (Respondent 10) were directly responsible for developing the Code of Ethics for Contractors (CIDB, 2008b) in Malaysia;
- all three academicians from the universities have knowledge and skill in the organisation and construction of questionnaire survey.

Semi-structured interviews were conducted with the respondents to gather industry opinion through their background, training and experience. According to Denscombe (2003), with this type of interview, the interviewer has a clear list of issues to be addressed and questions to be answered. However, any other themes may develop during the course of the interview that are deemed important for a fuller understanding and development of the study (Corbetta, 2003). The framework of interview questions for this study is explained further in the next section.

Table 5.4: Background and experience of respondents for pilot interview

No.	Designation	Organisation	Professional discipline	Experience
1.	Professor	Faculty of Built Environment - Local university	Building	• Present: Lecturing and research work. • Previous: Working in a semi-government body; mostly housing, commercial buildings and infrastructure projects.
2.	General Manager	Private sector client - Developer	Civil engineering	• Present: Involved in housing, commercial buildings and infrastructure projects. • Previous: Working in the construction development sector of a local university and another private sector developer.
3.	Professor	Faculty of Built Environment - Local university	Building	• Present: Lecturing and research work. • Previous: ▪ Wide overseas experience: Lecturing and research work in more than one university and industry experience.
4.	Professor	Faculty of Engineering - Local university	Mechanical engineering	• Present: Lecturing and research work. He also lectures the subject of "engineering ethics". • Previous: Lecturing in another local university and industry experience.
5.	Senior Director	Public sector client - Federal government	Civil engineering	• Present: Involved in public buildings and infrastructure projects. • Previous: ▪ Local: Attachments in various departments within the organisation; design and research, computer development; roads section and district engineer. ▪ Wide overseas experience: Consultant in an engineering firm and project manager for an embassy project for the government of Malaysia.
6.	Head Architect	Public sector client - State Development Corporation	Architect	• Present: Housing, commercial buildings and infrastructure projects.

Table 5.4: Background and experience of respondents for pilot interview (continued)

No.	Designation	Organisation	Professional discipline	Experience
7.	Senior Manager	Private sector client - Developer	Quantity surveying	• Present: Housing, commercial buildings and infrastructure projects. • Previous: Several quantity surveying consultant firms and another private sector developer.
8.	Contracts Executive	Contractor - Class A	Quantity surveying	Present: Housing, commercial buildings and infrastructure projects.
9.	Senior Manager	Statutory body - Contractors' Development Unit, Construction Industry Development Board (CIDB)	Civil engineering	• Present: Involved in the monitoring and enforcement of contractors. • Previous: Working in a semi-government body; mostly housing, commercial buildings and infrastructure projects.
10.	Corporate Ethics Specialist	Statutory body - Institute Integrity Malaysia	Business administration	• Present: Working in a government body which was set up to address ethics and integrity in Malaysia. • Previous: Several government bodies dealing with implementation and administration of government policies.
11.	Director General	Department of Housing, Ministry of Housing and Local Government	Town planning (*The only non-academician interviewed who holds a Doctorate*)	• Present: Involved in the monitoring and enforcement on general issues of housing, and specifically on developers. • Previous: Vast experience from various departments within the federal government body on government's policy.

5.3.3 Interview questions

The interviews were based on a two page questions, which were categorised into various main topics and sub-topics, put together during literature review by the researcher. The advantage is that they are focused questions and all the respondents have the same basis for expanded discussion, resulting in new issues or factors identified and a deeper understanding to the researcher. Semi-structured interviews can vary in form quite widely, from a questionnaire-type with some probing, to a list of topic areas (Fellows and Liu, 2008). For the purpose of this study, the interviews were conducted in the form of a draft questionnaire, to be agreed, modified and new issues or solutions introduced, for the actual questionnaire to be used for survey. Table 5.5 shows the framework of interview questions for the pilot interview.

The questions were divided into five main parts, each part having different purposes for the research. They are Part A: to investigate the relevance and justification of the research area and topics, Part B: to verify the organisation and construction of the questionnaire and the survey; Part C: to identify ethical issues that occur in the industry; and Part D: to determine factors to improve ethics in the industry.

Table 5.5: Framework of interview questions for pilot interview

Part	Purpose	
A	To investigate the relevance and justification of the • research area, and • topics.	
B	To verify the organisation and construction of the • questionnaire, and • survey.	
	Objectives	**Questions**
C	To identify ethical issues that may occur in the industry	Procurement issues: • Improper tendering practice • Conflict of interest - conflicts of interests due to financial, personal, company or political gain • Improper external intervention due to interest of other parties • Infringement of confidentiality and information • Misrepresentation of project cost Construction issues: • Poor site safety • Negligence on quality of work • Technical incompetence • Payment issues • Claims for work done • Harassment Other issues: • Breaching environmental ethics - conduct contributing to deterioration or destruction of air, water or nature; • Enforcement issue - lack of effective reporting procedures and enforcement • Others: Effects of unethical practices in industry
D	To determine factors to improve ethics	Individual and professional training • Education and training Roles of organisation and industry • Code of ethics • Leadership • Other roles System and procedure in the industry • Tendering and procurement • Safety standards at workplace • Quality of work • Timely payment Other factors • Environmental ethics • Legislative enforcement • Accountability and client/customer satisfaction • To curb corruption

5.3.4 Pilot interview results

With semi-structured interviews, the answers are open-ended, and there is more emphasis on the interviewee (the respondents) elaborating points of interest (Denscombe, 2003). This means that some questions in particular interviews may be omitted, given the specific organisational context which is encountered in relation to the research topic (Saunders *et al*, 2000). Accordingly, during the one to one interviews, not all eleven respondents responded to all questions based on the framework in Table 5.5. The following section will discuss the results of the interviews.

The respondents' perception in Part A, on the relevance and justification of the research area and topics is summarised in Table 5.6. Generally all eleven respondents accepted that the research area and subject matter/topic of ethical issues that exist in the industry and the factors to improve ethics that are put forward are relevant matters to consider in this ethics study. They hope that the outcome of the study will contribute towards the improvement of ethics in the industry.

Table 5.6: Respondents' perception on the relevance and justification of the research area and topics

Respondents	Question	Respondents' perception
All	Part A: Relevance and justification of the research area and topic	• There were strong perceptions by the 11 respondents interviewed on the necessity of research in this area. • Generally, all the respondents agreed that the ▪ ethical issues raised and dealt with were comprehensive and relevant, and, ▪ the factors proposed to improve ethics are significant towards achieving ethics in the construction industry. • The respondents hope that the results of the research will benefit the Malaysian construction industry.

The respondents' perception in Part B, on the organisation and construction of the questionnaire and the survey is summarised in Table 5.7. On the questionnaire survey, all eleven respondents agreed that the relevant industry players; public and private

clients, contractors and consultants should be included in the population for survey. Since this study is about ethics, everyone should have an equal say to avoid prejudiced perceptions from different types of players in industry. Regarding scaling techniques in the questionnaire, the researcher initially intended to adopt the scale of 'non-existent', 'few', 'many' and 'everywhere' when investigating ethical issues that may occur in the industry as adopted by Jackson (2004/2005**)** in her study on ethical issues in the construction industry in USA. However, Respondent 1 (an academician), argued that this type of scaling technique is inappropriate since it can cause uncertainties. Respondent 8 (a professional in a contracting organisation), also argued that it would be difficult to gauge the number of occasions for 'few', 'many' and 'everywhere'. Following this, the researcher adopted the five - point Likert scales (ranging from 1- Strongly Agree, to, 5 - Strongly Disagree) (Fellows & Liu, 2008, p.171) in the questionnaire, which will be discussed in more detail in Chapter 6.

An improvement was also achieved in the categorisation for ethical issues that occur in the industry. Literature review has shown that previous studies in the industry dealt with specific issues for example; tendering practice or site safety. There is a lack of studies on the holistic view of issues which occur during the different stages of a project. Therefore, the researcher had categorised the issues for the purposes of the interview as in Table 5.5. Respondent 2 agreed that investigation of these issues should be better **c**ategorised into 'pre-contract', 'construction' and 'post-contract' stages for a better understanding and reflecting the flow of work of a construction project. Regarding the questions put forward, Respondent 2 commented on the wordings of negative statements when investigating ethical issues that may occur in the industry. For example, 'improper tendering practice' and 'technical incompetence' could be presumed as indicative of any wrongdoing, and should be reworded to 'tendering

practice' and 'technical competency' respectively, which is a fact and positive type of question; not suggestive of any wrongdoing for prospective survey respondents.

The respondents' perceptions in Part C, on ethical issues that may occur in the industry is summarised in Table 5.8. It shows the significant ethical issues highlighted by the respondents that occur, based on their experience in the industry. However, issues highlighted by the respondents which have been identified from the literature review are not included. Under procurement issues for improper tendering practice, an example for the insider trading issue was given by Respondent 8. Another issue which was proposed is lobbying to secure contract (Respondents 4 and 11).

As for issues during construction, seven issues on poor site safety were put forward by the respondents; for example, lack of safety officer (Respondents 2 and 3), and improper installation and usage of temporary works e.g. scaffolding (Respondent 3). Under technical incompetence issues, Respondent 3 highlighted the issues of not competent to handle the job and inadequate construction techniques. Under payment issues, one of the issues emphasised is 'pay when paid' (back-to-back payment) which affects sub-contractors (Respondent 5). Concerning breaching environmental ethics, the issues suggested were "unnecessary clearing of trees or shrubs and cutting of ground earth" (Respondent 5).

There were new categories of issues suggested: i) post-contract defective works (Respondent 7), ii) workers (Respondent 6), and iii) Respondents 9 and 11 highlighted an ethical issue on "disregarding respect and sensitivity towards culture, religion and heritage affected during construction works". This was categorised by the researcher under the issue of "respect for others". On the enforcement issue, most of the

respondents suggested that it is lacking on the part of all the parties involved, especially legislation from the government to enforce rules and regulations to curb unethical practices in the industry.

Table 5.7: Respondents' perception on the organisation and construction of the questionnaire and survey

<table>
<tr><th>Respondent No.</th><th>Question</th><th>Respondents' perception</th></tr>
<tr><td>All</td><td>Population for questionnaire survey</td><td>• All respondents agreed that industry players; i.e. public and private clients, contractors and consultants should be included as the population for the questionnaire survey. The main reason cited is that every player is fundamental and plays a role in a construction project.
• Thus to survey:
▪ Only the clients would be biased to the contractors;
▪ Only the contractors could lead to no truth being prevailed due the ethical issues probed are somewhat a reflection of their unethical practices, and,
• Consultants are a necessity since they are the go-between 'mediators' of the client and contractor.</td></tr>
<tr><td>1,8</td><td>The scale of 'non-existent', 'few', 'many', and 'everywhere' for ethical issues</td><td>• The scale is not practical for survey respondents.
• Based on Respondent's (1) experience in academic research, uncertainty and hesitation will arise on the situations of how many are few' or 'many' or 'everywhere'.
Based on Respondent's (8) experience in the industry, it is difficult to assess on how many; are 'few' or 'many' or 'everywhere' situations.</td></tr>
<tr><td>2</td><td>Categorisation of ethical issues</td><td>• To reflect the flow of work in a construction project, ethical issues are best categorised into pre-contract and construction issues.</td></tr>
<tr><td>2</td><td>The wording for 'ethical issues that may occur in the industry'</td><td>• Ethical issues investigated should be worded to a 'fact and positive' type of question and not suggestive of any wrongdoing.
• Therefore, the following changes were made:
<table>
<tr><th>Before</th><th>Reworded</th></tr>
<tr><td>Improper tendering practice</td><td>Tendering practice</td></tr>
<tr><td>• Conflicts of interest due to financial, personal, company or political gain, and,
• Improper external intervention due to interest of other parties</td><td>Tender evaluation</td></tr>
<tr><td>Infringement of confidentiality and information</td><td>Confidentiality</td></tr>
<tr><td>Misrepresentation of project cost</td><td>Tender sum</td></tr>
<tr><td>Poor site safety</td><td>Site safety</td></tr>
<tr><td>Negligence on quality of work</td><td>Quality of work</td></tr>
<tr><td>Technical incompetence</td><td>Technical competency</td></tr>
<tr><td>Payment issues</td><td>Payment</td></tr>
</table></td></tr>
</table>

Table 5.8: Respondents' perception on ethical issues

Respondent No.	Ethical issues	Respondents' perception
	Procurement issues	
2,4,8,9,11	Improper tendering practice	Should include: • Insider trading; i.e., ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways. Example: pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price (Respondent 8) • Lobbying to secure contract (Respondents 4 and 11) • Commissions to secure contract (Respondent 9) • Frequent front-loading of tender sum (Respondent 2)
	Construction issues	
2,3,5,6,	Poor site safety	Should include: • Improper installation and usage of construction machinery (Respondent 3) • Unqualified safety officer (Respondent 3) • Lack of safety officer (Respondent 2 and 3) • Inadequate protection from debris and hazardous material (Respondent 5) • Improper location and storage of material (Respondent 5) • Improper installation and usage of temporary works; e.g., scaffolding (Respondent 6) • Inadequate perimeter hoarding at site (Respondent 6)
3	Technical incompetence	Should include: • Not competent to handle the job • Inadequate construction techniques
5,7	Payment issues	Should include: • 'Pay when paid' (back-to-back payment) affecting the sub-contractor (Respondent 5) • Inflated claims for loss and expense and damages (Respondent 7)
6	Workers (New issue introduced)	Should include: • Employing illegal workers • The ethics of workers has a negative influence on the overall ethical standard
	Post - contract issues	
7	Defective works (New issue introduced)	Should include: • Non compliance to specification - poor quality of material in general • Poor workmanship in general
	Other ethical issues	
5	Breaching environmental ethics	Should include: • Unnecessary clearing of trees or shrub • Unnecessary cutting of ground earth
9,11	Respect for others (New issue introduced)	• Disregarding respect and sensitivity towards culture and religion of the public and local community affected by the construction works (Respondent 9) • Respondent 11 highlighted 'not sensitive to heritage', a similar issue highlighted by Respondent 9 in view of respect and sensitivity towards culture and religion.

The following section will discuss Part D which is on the respondents' perception on factors to improve ethics, and summarised in Table 5.9. There was less commentary from the respondents since generally, the respondents agree with the factors put forward. Nevertheless, some factors received more interest from the respondents, especially for individual and professional training, which highlighted the significance of education in ethics for professionals in the industry. Another major factor emphasised is the code of ethics in organisations and industry, as, it is just not enough to be able to understand and to adhere to them, but, most importantly, there should be mechanisms for implementation and enforcement from relevant regulatory bodies (Respondents 8 and 11). As for the roles of organisation, Respondent 10, a corporate ethics specialist, appropriately proposed that in addition to financial reports, all companies /organisations should also publish a Report on Corporate activities for transparency purposes to all concerned, which was also identified in the literature review. Another factor considered is the important role of leaders in organisations and industry to lead by example (Respondents 5 and 6).

The respondents were also receptive on the system and procedure in the industry. Concerning procurement, the respondents emphasised several methods that may improve ethical tendering practice; for instance, by tightening the selection process for contractors through pre-qualification (Respondent 5) and negotiated tendering (Respondent 7) to set a barrier for entry and limits tenderers who are not only capable, but also responsible. Other measures proposed include the necessity of a declaration statement from individuals who has influence or authority from the side of the party awarding the contract (Respondent 7). This is applicable where there is conflict of interest; for example, with relatives from parties bidding for the contract. As for factors during construction, specifically on safety standards at the workplace, two respondents

highlighted the need for education, training, campaigns and advertisements in order to inculcate the importance of ethics to team members and workers (Respondents 2 and 6).

Concerning other factors to improve ethics, Respondents 9 and 11, who are both from government regulatory bodies and as expected from them, advocated stricter law enforcement and stiffer penalties for wrongdoings in the industry. Finally, Respondent 11 argued that the factor to curb corruption, as proposed by the researcher, is unnecessary because corruption can be curbed by implementing the factors to improve ethics as discussed in the framework of questions. Furthermore, it is inappropriate due to the sensitivity of corruption as it might deter industry players from responding to the questionnaire survey later.

Table 5.9: Respondents' perception on factors to improve ethics

Respondent No.	Factors	Respondents' perception
	Individual and professional training	
1,3,4,8,9		• Educate, educate, educate (Respondent 1) • Ethics begin at level zero (Respondent 3) • Ethics should be introduced from school (Respondent 9) • Education and training from relevant institution is crucial in order to control and produce better ethics in the future (Respondent 4). • Ethics is the main component of professionalism. At the university where I graduated, we have a compulsory subject in ethics, to be more precise, 'Islamic ethics'. The university aims at producing future professionals not only to be distinguished in their respective disciplines but most importantly to possess high ethical values. In a way, that has contributed to the awareness and importance of ethics (Respondent 8).
	Roles of organisation and industry	
7,8,11	Code of ethics	• All parties should understand and adhere to the Code of Ethics (Respondent 7) • Comprehensive by-laws or Code of Ethics is necessary, but, most important is the implementation and enforcement from the government and professional institution (Respondents 8 and 11)
5,6	Leadership	• Leadership by example
10	Role of organisation	Should include: • In addition to financial report, all companies / organisation should also publish Report on Corporate activities, for transparency purposes (Respondent 10)

Table 5.9: Respondents' perception on factors to improve ethics (continued)

Respondent No.	Factors	Respondents' perception
	System and procedure in the industry	
	Procurement factors	
5,7,8	Tendering practice	Should include: • Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible (Respondent 5) • A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exist conflict of interest (for example, a relative) towards any of the parties bidding for contracts. • Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible (Respondent 7) • Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost (Respondent 8).
	Construction factors	
2,6	Safety standards at workplace	• The importance of ethics must be implanted in the minds of every team member and workers in the construction works, through education, training and campaigns (Respondent 2) • More emphasis on ethics needed through awareness campaigns and advertisements (Respondent 6)
	Other factors	
9,11	Legislative enforcement	• Stricter law enforcement (Respondent 9) • Stiffer penalties for wrongdoings (Respondent 10)
11	To curb corruption	• This is unnecessary and inappropriate because: ▪ Corruption can be curbed by implementing the factors to improve ethics as already put forward by the researcher. ▪ It could be sensitive to industry players since it is the core issue of ethics in the industry.

5.4 Development of a conceptual framework to improve ethics in the Malaysian construction industry

The pilot interviews with the 11 key representatives from industry highlighted that the key factors to improve ethics were individual, professional training, roles played by organisation and industry specifically on code of ethics and leadership. Other key factors identified were stricter procurement methods, construction factors particularly on safety at workplace and legislative enforcement. This justifies that the factors

identified from the literature review are relevant for the purposes of the research and more importantly to the Malaysian construction industry.

Following the pilot interviews, the formulation for the framework in Phase 2 of the research process is now completed. As a result, a conceptual framework of factors to improve ethics is developed. This is shown in Figure 5.1. The figure shows the links between the components of factors necessary to improve ethics in the construction industry. This group of collectivism reflects the dimensions of elements of each component and their relationships. The framework is made up of eight components. They are: i) individual factors, ii) professional training factors, iii) organisational factors, iv) industry factors, v) system and procedure in the industry, vi) environmental ethics, vii) legislative enforcement, and, viii) accountability and customer satisfaction. Each component consists of relevant sub-components. Table 5.1 shows the reference for the components and sub-components as previously discussed in the literature review in Chapter 3.

Referring to Figure 5.1, the framework shows that efforts to improve ethics in the industry should not be isolated activities or measures that apply in a reactive mode to the occurrences of events that affect the reputation of a company or organisation. Instead, there should be a collective effort that embraces the responsibilities and roles that can be played by all industry participants in enhancing ethics in the industry. The construction industry, like any other industry, needs the fundamental aspects of individual and professional training factors. It is both linked to the organisational factors, as the organisation structure sets the environment for the professionals. The organisation and the professional also need to understand and follow the system and procedure and industry factors; hence, they are connected in the framework. The three

factors of legislative enforcement, environmental ethics, accountability and customer satisfaction are linked to the other factors described, since they are affected or have an influence on them.

5.5 Summary

The preliminary interviews with the two experienced expert professionals demonstrated not only a positive view of the usefulness and attitude on the research area, but also assisted in the formulation of methodology for the proposed research. It also highlighted the declining standard of ethics in the industry and identified critical changes needed for education, systems and work procedure and legislation; and identified leadership and the organisational roles as common factors affecting ethics in any industry. Most importantly, it has validated the research area for the researcher to develop the study further in order to commence on the literature review.

The pilot interviews with the 11 respondents successfully provided justification of issues and solutions identified from the literature review. They have also supplemented and enhanced the framework for the questionnaire, with current important ethical issues and addressed key solutions relevant to improve ethics in the construction industry in Malaysia. Some of the ethical issues highlighted were procurement and construction issues. The factors to improve ethics put forward were considered relevant and the respondents highlighted some key factors: individual, professional training, industry, system and procedure in the industry in particular the procurement and construction factors, and legislative enforcement. Hence, combined with literature review in Chapter 3, the main outcome of the interviews is the development of a sound foundation for a conceptual framework for this research. In addition, the relevance and justification of

the research area and topics were confirmed by the pilot interviews; hence, in conformity with the initial preliminary interview results.

In summary, this chapter has justified the purpose of the preliminary and pilot interviews with participation from experts and key representatives from industry players where their perceptions on the subject matter of this research were considered. It is crucial that their views and comments as industry input are examined and embraced in order to achieve the aim and objectives of the research, and more significantly, to be accepted and recognised by the construction industry in Malaysia. This chapter has also assisted to agree and modify the secondary data from the literature review and introduced new issues and suggestions from the industry, which enhance and contribute towards the design and composition of the questionnaire which will be discussed in the following Chapter 6.

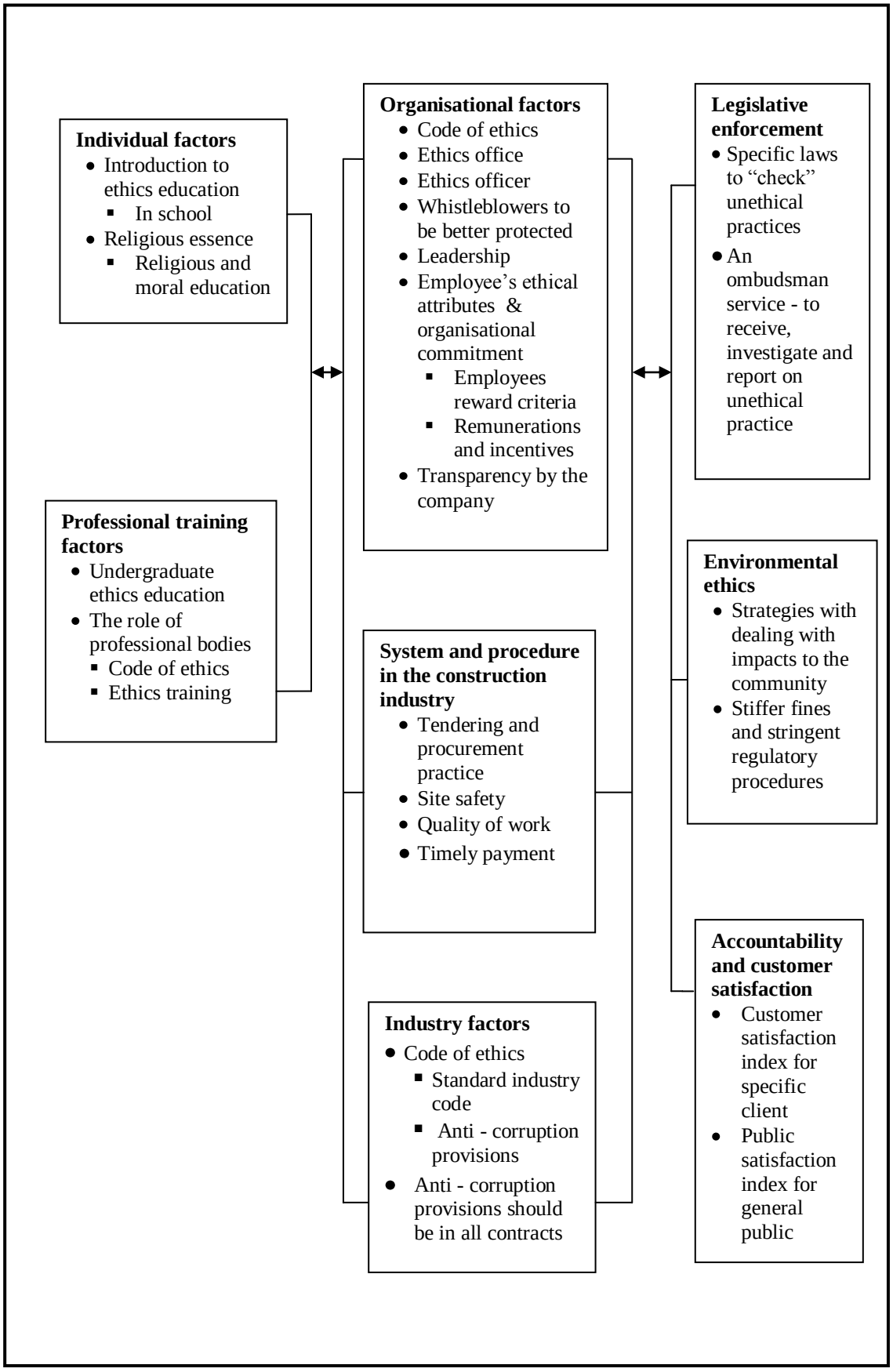

Figure 5.1: A conceptual framework of factors to improve ethics in the construction industry

Table 5.10: Reference for the components and sub-components in the framework of factors to improve ethics in the construction industry

No.	Components	Sub-components	Reference
1.	Individual factors	-	Abuznaid (2009), Fox (1999), Fox and Skitmore (2003), Gibbons (1991), IIM (2004), Lawton (2005), Orme and Ashton (2003), Sharp (1994), Stajkovic and Luthans, 1997; Stead *et al*. (1990)
		Introduction to ethics education	Abuznaid (2009), Bishop(1992), Fuchs and Hofkirchner (2005), Lawton (2005), Sharp (1994)
		Religious essence	Abuznaid (2009), Endress (1998), Fuchs and Hofkirchner (2003), Lawton (2005), Lewis (2001), Sharp (1994), Pramanaik (1994), Rizk (2008), Stead *et al*. (1990).
2.	Professional training factors	-	IIM (2004), Lawton (2005), Stead *et al*., (1990)
		Undergraduate ethics education	Bishop (1992), Bucciarelli (2008), Carlson and Burke (1998), Chan and Chan (2002), Egbu (2004), Eynon *et al*. (1997), FMI/CMAA (2004), Gautschi and Jones (1998), Herkert (2000), HKEDC (2003), Robertson (1987), Self and Ellison (1998), Sims and Sims (1991), Vee and Skitmore (2003).
		Role of professional bodies:	
		Code of ethics	Bergenhenegouwen (1996), Grimshaw (2001), IIM (2004), Peppas (2003), Small and Dickie (1999), Tucker *et al*. (1999), Uff (2003), Webster (1991).
		Ethics training	FMI/CMAA (2004), Rick (2005), Suen *et al*. (2007), Vee and Skitmore (2003).
3.	Organisational factors	-	Abuznaid (2009), Firestein (2006), Gibbons (1991), IIM (2004), Langlois and Lapointe (2010), Lawton (2005), Orme and Ashton (2003), Sharp (1994), Petrick and Quinn (2001), Stajkovic and Luthans (1997), Stead *et al*.(1990).
		Code of ethics	Abuznaid (2009), Adams *et al*. (2001), Ford and Richardson (1994), Frankel (1989), IIM (2004), Kaptein (2002), McDonald (2009), Ofori *et al*. (2004), Orme and Ashton (2003), Sharp (1994), Pater and Van Gils (2003), Rizk (2008), Somers (2001),Stajkovic and Luthans (1997),Stead *et al*. (1990), Svensson and Wood (2004), Svensson *et al*. (2009a), Valentine and Barnett (2002), Wotruba *et al*. (2001).
		Ethics office	Appelbaum *et al*. (2009), Delaney and Sockell (1992), Fox and Skitmore (2003), Leclair (1998), Mortensen *et al*. (1989), Rahman (1996), Rasberry (2000), Svensson *et al*. (2009b).
		Ethics officer	Svensson *et al*. (2009a), Svensson *et al*. (2009c), Tran (2008), Wood *et al*. (2004), Yuspeh (1999.
		Whistleblowing	Cherrington and Cherrington (1995), Cleland (1995), Hersh (2002), Johnson (1999), Near and Miceli (1995), Svensson *et al*. (2009c), Tsahuridu and Vandekerckhove (2008), Wood and Callaghan (2003).
		Leadership	Abuznaid (2009), Aupperle and Dunphy (2001), Avolio and Gardner (2005), Barnard (1938), Brown *et al*.(2005), Dunphy (2001), Ford and Randolf (1992), Fryer (1997), Gay (2004), Greece (2002), IIM (2004), Lawton (2005), May *et al*. (2003), Northouse (2001), Orme and Ashton (2003), Sharp (1994), Peterson (2004), Rosenbach and Taylor (1998), Sims (2000), Soutar *et al*. (1994), Stead *et al*. (1990), Strang (2005), Suen *et al*. (2007), Toor and Ofori (2008), Trevino *et al*. (2000, 2003)

Table 5.10: Reference for the components and sub-components in the framework of factors to improve ethics in the construction industry (continued)			
No.	**Components**	**Sub-components**	**Reference**
3.	Organisational factors	Employee's ethical attributes and organisational commitment	Desjardins (2009), Doost(1997), Fraedrich (1992), Gay (2004), Harrington (1991), Koh and Boo (2004), Laczniak and Murphy (1991), Lawton (2005),Loo (2002), MacKenzie *et al.* (1998), Mannheim *et al*. (1997), Morden (2004), Mortensen *et al.* (1989), Townley (1994), Pettinger (2007), Rahman (1996), Rick (2005), Rizk (2008), Schiebel and Pochtrager (2003), Strang (2005), Svenson *et al.* (2009c),Velasquez (2009).
		Transparency by the company	Craddden (2005), Gray (2007), Orme and Ashton (2003), Small and Dickie (1999), Yadong (2007)
4.	Industry factors	-	IIM (2004), Orme and Ashton (2003), Stajkovic and Luthans (1997)
		Code of ethics:	
		Standard industry code for all	IIM (2004), Kang *et al*. (2004), Mason (2010), Ofori *et al*. (2004), Orme and Ashton (2003), Rick (2005), Uff (2005), Thornton (2004), Uff (2003),
		Anti-corruption provisions	ENR (2005), Stansbury and Stansbury (2005).
5.	System and procedure in the industry	-	Egan (1998), IIM (2004), Orme and Ashton (2003), Stead *et al*. (1990).
		Tendering and procurement practice	Construction Procurement Guidance (2000), Datta (2000), Egan Report (1998), GCCG (1999), Holt and Rowe (2000), House of Common (2001), James and Frank (1992), Kamardeen (2009),Latham (1994), Levene Report (1995), Lian (2005), Master Builder Magazine (1997), MND (2005), Nguyen *et al*. (2004), Oyegoke *et al.* (2009), Palalani (2000), Palaneeswaran *et al*. (2003), Rahman *et al*. (2001),Rubin *et al*. (2005), Rubin *et al*. (2005),Smallwood (2000), Warne (2002).
		Site safety	Blockley (1995), Bomel (2001), Chinda *et al.* (2008),contractjournal.com (2006), Davies and Tomasin (1999), Gambatese *et al*. (2005), Garza (1988), Ho and Zeta (2004), Huang and Hinze (2006a,b), Levitt and Samelson (1993), Marsh *et al.* (1995),McAfee and Winn (1989), Ministry of Manpower, Singapore (2005),Molenaar *et al*. (2002), Nishgaki (1994) Peters (1991), Smallwood (2000), Wood (2006).
		Quality of work	Abdel-Razek (1998), Abdul Rahman *et al.* (2011), Cleland (1995), Datta (2000), Ofori *et al*. (2004), Palalani (2000), Smallwood (2000).
		Timely payment	Brand *et al*. (2011), Carmichael *et al*. (2010), Hui *et al.* (2011), ICTD (1992), The Star (2011a), Touran *et al.* (2004).
6.	Environmental ethics	-	Du Plessis (2007),Garrod and Chadwick (1996)
		Strategies with dealing with impacts to the community	Glass and Simmonds (2007), Hadi (2001), Moodley (1999), Nguyen *et al*. (2004), Walker (2000), Yeo (1995).
		Environmental policies - stiffer fines and stringent regulatory procedures	CIRIA (2005), DTI (2000), IIM (2004), Mason (2010), Ofori (2000a), Shakantu *et al*. 2000), Smith (1997).

Table 5.10: Reference for the components and sub-components in the framework of factors to improve ethics in the construction industry (continued)			
No.	**Components**	**Sub-components**	**Reference**
7.	Legislative enforcement	-	Fox (1999), IIM (2004), Latham (1994), Lawton (2005)..
		Specific laws to "check" unethical practices	FMI/CMAA (2004), Fox and Skitmore (2003), IIM (2004), Lawton (2005), Mason (2010), Miodonski (2004), Rick (2005),Stajkovic and Luthans (1997).
		An ombudsman service - to receive, investigate and report on unethical practice	Clevenger *et al*. (1996), Hui *et al*. (2011), IIM (2004),
8.	Accountability and customer satisfaction	-	Egan (1998), Kang *et al*. (2004), Lawton (2005), Pederson, 2007), Rasberry (2000), Stewart (1984), Velayutham and Perera (2004).
		- Customer satisfaction index for specific client - Public satisfaction index for general public	Busby (1999), GCCG (1999), Holt and Rowe (2000), Velayutham and Perera (2004)

CHAPTER 6

BACKGROUND OF QUESTIONNAIRE AND THE SURVEY

6.1 Introduction

This chapter presents the background of the questionnaire design and the survey for data collection which is Phase 3 of the research process. Following literature review and pilot interviews in Phase 2 of the research process, questions were designed for the questionnaire survey. After that, a pilot questionnaire survey was conducted, analysed and the questionnaire was subsequently improved. A questionnaire survey was then sent to a sample of industry players selected from the target population for data collection.

6.2 Background of questionnaire design

6.2.1 Objectives

The questionnaire was used to gather primary, relevant and current data from the industry in order to support and validate data obtained from literature review and pilot interviews with the eleven respondents. Questionnaires are most useful as a data collection method especially when it involves a large number of respondents in many locations (Sekaran, 2003 and Denscombe, 2003). This approach has made an important contribution to this research through the retrieval of information and studying the perception from players in the industry.

6.2.2 Constructing the questionnaire

The questionnaire was developed as an initial part of the survey research. The construction of the questions for questionnaire was carried out through two main channels: literature review and information gathered through the pilot interviews.

The first stage in developing specific questions, which progressed concurrently with the literature review, involved the creation and identification of relevant categories and any sub-categories on the subject of the research. This was then populated with particular problems and suggested solutions. Documenting the problem areas helped to focus the research on possible methods of resolution of particular ethics concepts and issues to prevent digression from the subject. Each category and sub-categories were added and amended until all information had been identified and investigated to allow the writing of the questions to begin. The questions were either i) developed from literature review ii) modified from questionnaires of previous similar researches, iii) developed from pilot interviews, or iv) developed by the researcher/author herself. Table 6.1 in Appendix 1 shows the source and reference for each question in the questionnaire.

The questionnaire is a nine page document consisting of 139 statements or questions and divided into four parts: Part A, B, C and D. The first page of the questionnaire is the general information of the questionnaire containing i) the objectives of the study for which the questionnaire survey was conducted, ii) definition of terms, iii) declaration of confidentiality, and, iv) instructions for answering the questionnaire. The subsequent Part A contains questions regarding demographic and career profile information of respondents of the survey.

Part B is divided into Part B1 and Part B2; whereby, Part B1 intends to establish understanding of the importance of ethics: of the individual, the construction professional and of the employee in an organisation; and Part B2 intends to determine the ethical standards: of the construction professional himself, the organisation and the industry. The main intention of Part B is to establish the ethical background in the industry.

Part C contains questions to identify ethical issues that occur in the construction industry in Malaysia. It is grouped into five components: i) pre - contract issues (for example, tendering practice), ii) construction issues (for example, site safety), iii) post - contract issues (defective work), vi) environmental issues and v) other issues (for example; harassment issues). This approach of categorisation is practical and useful, since it follows the different stages of a project and also related issues on a project. Part C also includes an investigation on the enforcement issue and the effects of unethical practice to the construction industry in Malaysia. A vital criterion considered for this part of the questionnaire is that since is it a sensitive topic, the respondents were not asked directly to admit to perceived ethical wrong doing, but were asked if they had witnessed / been a victim of unethical activity (Lam, 2004) but as in the wordings of the introduction to Part C of the questionnaire: "*Below are ethical issues that may occur in the construction industry in Malaysia. Please answer based on your experience working in the construction industry"*.

Part D contains questions on factors to improve ethics in the industry. This section of the survey intends determine factors to improve ethics in the construction industry. It is grouped into eight components. They are i) individual factors, ii) professional training factors, iii) organisational factors, iv) industry factors, v) system and procedure in the industry, vi) environmental ethics, vii) legislative enforcement; and viii) accountability and customer satisfaction.

It was necessary to arrange the parts of the questionnaire in the most appropriate order. Demographic and career profiles (Part A) were placed at the beginning, followed by questions to establish the ethical background with regards to understanding of the importance of ethics and the standard of ethics in the industry (Part B). Questions on

ethical issues that may occur in the industry (Part C) were introduced consequently, to avoid discomfort since they were predominantly concerned with negative practices. Factors to improve ethics in the industry were placed at the end of the questionnaire, which were in a positive note requiring little comprehension, and would provide light relief. The order of questions within sections was determined so as to familiarise the respondents with certain subject areas before moving onto ones that are more complex.

All questions use the Likert 5 - point scale: 1- strongly agree, 2 - agree, 3 - neither agree or disagree, 4 - disagree and 5 - strongly disagree in accordance to Fellows and Liu (2008, p. 171) throughout Parts B, C and D of the questionnaire. Previous researchers used Likert-type scale predominantly in their questionnaires, as it is the most effective method, which will tap into individual's perceptions, and assist to ease and speed responses from respondents. According to Kelly and Hunter (2003), Likert scale is the most widely used method of scaling in social sciences researches since it is a typical attitude scale that measures the degree of agreement or disagreement, and allowing scale scores to be formulated for the respondents and conclusions reached for each common set of statements.

After the construction of the questionnaire was completed, it was then sent for a pilot survey. This process is discussed in the next section.

6.3 Background of pilot survey

6.3.1 Objectives

The next stage of the research is pre-testing the developed questionnaire as a pilot survey. According to Fellows and Liu (2008), all questionnaires should be piloted initially and completed by a small sample of respondents. A pilot test of a questionnaire

is a procedure in which a researcher makes changes in an instrument based on feedback from a small number of individuals who complete and evaluate the instrument (Creswell, 2005). The objectives of piloting are to test whether the questions are intelligible, easy to answer, unambiguous etc, and, through feedback from these respondents, there will be an opportunity to improve the questionnaire, fill in the gaps and determine the time required for, and ease of, completing the exercise (Fellows and Liu, 2008). Pilot testing the questions also determines that the individuals in the sample are capable of completing the survey and that they can understand the questions (Creswell, 2005, and Sekaran, 2003).

Pre-testing the developed questionnaire as a pilot survey was particularly important in this research to assess feedback to the questions. The main objectives are to:

- obtain comments and suggestions to improve the questionnaire by way of:
    - confirming the selected questions,
    - adding any omitted questions, and
    - checking for errors, clarity of questions and instructions, relevance of questions and content and structure of questionnaire; and,
- assess anticipated response towards the research before the actual survey for data analysis and results.

6.3.2 Methodology, scope and limitations

The pilot survey was conducted with a small number of respondents. A total of 24 respondents randomly selected from the population of industry players were approached to secure their approval and willingness to participate in the pilot survey. All of them agreed to participate. Table 6.2 outlines the background of the respondents from various organisations in the industry and their professional disciplines.

Table 6.2: Background of pilot survey respondents

Type of organisation	Professional discipline / (Number of respondents)
Public clients: • Federal government • Statutory body • State development corporation	• Architecture (3) • Civil engineering (3) • Mechanical engineering (2)
Private client: • Developer	• Civil engineering (1)
Consultants: • Representing each type of professional disciplines	• Architect (2) • Quantity surveyor (2) • Project management (2) • Civil and structural engineering (2) • Mechanical engineering (2) • Electrical engineering (1)
Contractors:	• Civil engineering (2) • Quantity surveying (2)
Total no of respondents	**24**

The criteria for respondents' selection were:

- they represent the 'hands on' players which can fairly replicate the state of current affairs in the industry; and
- each has extensive background in a variety of project settings, contract types and work locations with at least ten years experience.

For the purposes of referencing, coded marked questionnaires were adopted for distribution to the respondents for the pilot survey. However, feedback from the respondents recommended that for justification of strict confidentiality and due to the nature of this research on ethics, this should not be the circumstances when the actual survey is carried out.

The research process continues with developing an improved questionnaire after the pilot survey. The pilot survey provided feedback on both the design and content of the questionnaire. Comments and suggestions regarding style and structure of the

questionnaire and the covering letter were incorporated. Several modifications were made to the questions and content and structure of the questionnaire based on the findings and suggestions from the pilot survey.

The following section will discuss the reliability test for the pilot survey and modifications to the questionnaire there on.

6.3.3 Pilot survey analysis: reliability of measures

A particular feature of piloting is that it should be followed through with initial analysis, production of results, etc. so that the data provision and use are checked thoroughly (Fellows and Liu, 2008). The goal of this research is to have measures or observations that are reliable. The reliability of a measure indicates the extent to which it is without bias and hence ensures consistent measurement across time and across the various items in the instrument (Sekaran, 2003). The Cronbach's coefficient alpha (α) was used which was suitable for multi-point scaled items (Sekaran, 2003). If the items are scored as continuous variables (e.g., strongly agree to strongly disagree), the alpha provides a coefficient to estimate consistency of scores on an instrument (Creswell, 2005). The closer the alpha is to 1.00, the greater the internal consistency of items in the instruments being assessed (George and Mallery, 2003). Table 6.3 shows the rule of thumb that applies to most situations.

Table 6.3: Cronbach's coefficient alpha (α) rule of thumb
(George and Mallery, 2003, p. 231)

Cronbach's coefficient alpha (α)	**Reliability**
$\alpha > .9$	Excellent
$\alpha > .8$	Good
$\alpha > .7$	Acceptable
$\alpha > .6$	Questionable
$\alpha > .5$	Poor
$\alpha < .5$	Unacceptable

The results of the pilot survey measured for reliability according to major sections in the questionnaire are shown in Table 6.4.

Table 6.4: Cronbach's coefficient alpha (α) for pilot survey

Division of parts according to questionnaire		**No. of items (questions)**	**(α)**
Part B	Ethical background of the construction professional, organisation and the industry	27	0.7404
Part C	Ethical issues	49	0.9707
Part D	Factors to improve ethics	44	0.9257

The results of the reliability test showed Cronbach's coefficient alpha (α) equals to 0.7404 (acceptable), 0.9707 (excellent) and 0.9257 (excellent) respectively for Parts B, C and D. This implies that the measures used in this study are consistent and reliable. Hence, no significant changes were made to the questionnaire that was used for the pilot survey. However, based on suggestions and comments from respondents in the pilot survey, the modifications made were rewording of statements in the questions that were too general or ambiguous. These improvements were made on the wording and clarity of six questions to improve understanding and readability of the questions.

The questionnaire was redrafted, and feedback from one of the respondents involved in the pilot survey, who was asked to validate and provide comments on the redrafted questionnaire, was positive. This improved questionnaire assisted to generate meaningful feedback from respondents for data collection and analysis purposes when the actual survey was conducted during the next stage of the research.

The final improved questionnaire is a nine page questionnaire consisting of 139 questions as shown in Appendix 2. This is the questionnaire used for the survey. The following section will discuss the questionnaire survey.

6.4 Background of questionnaire survey

6.4.1 Methodology, scope and limitations

The next step of the research is the administration of collection of data through the questionnaire survey. The population for the questionnaire survey were industry players in the states of Federal Territory of Kuala Lumpur and Selangor, Malaysia. The population frame for the study is as follows: 1) public clients - federal agencies, state corporation, city and local authority and statutory bodies, 2) private clients - developers, 3) consultants - architects, quantity surveyors and engineers, and 4) contractors. Since the subject matter of the research is ethics, it was necessary to separate the clients into public and private clients as the project objectives of these two types of clients normally differ. Private clients are often profit oriented as compared to public clients and this may have an effect on the research results.

The background of the population frame for the survey in terms of the organisation set-up and type of work involved is described in Table 6.5. The questionnaire survey with the public and private clients, consultants and contractors will represent the overall perception of major players on the research of ethics in the industry. By having different types of respondents from different industry players during the primary data collection, a good comparison of data can be achieved, avoiding bias. Previous related studies of ethics in the construction industry have also adopted a similar methodology of questionnaire survey for collection of data. In the USA, FMI/CMAA (2004) reports the findings of a survey of ethical practices of clients, architects, engineers, construction managers, contractors and sub-contractors in the construction industry. Liu *et al.* (2004) studied the ethical climate and code of ethics in public government departments, consultant surveying firms, and development and contracting companies in Hong Kong. Fan and Fox (2005) investigated ethical issues amongst managers, architects, surveyors

and engineers in Hong Kong. In South Africa, Pearl, *et al.* (2005) explored the perceptions of architects, quantity surveyors, engineers and contractors regarding ethical standards and ethical issues. In Australia, Vee and Skitmore (2003) investigated ethical issues surrounding construction industry activities from project managers, architects and building contractors.

Table 6.5: Background of population frame for questionnaire survey

1. Public clients: i. The Public Works Department (PWD): ▪ The largest single organisation in the country involved in design, construction and maintenance for government - funded projects. ▪ They have the largest professional set - up comprising of architects; quantity surveyors; civil, mechanical and electrical engineers. ▪ Major works are infrastructure and facilities for the public including federal roads, highways, bridges, schools, mosques, hospitals and clinics, and government offices and quarters. ▪ Their main services are technical consultancy, project management, and maintenance management. These services are supported by three main sectors: infrastructure, building and specialised engineering (available at www.jkr.gov.my). ii. State Corporation, city and local authority: ▪ They are responsible for housing schemes, recreation centres and sites of cultural and historic interest. ▪ The departments include planning, technical, operations and maintenance. iii. Statutory bodies: ▪ For example, a university with an established reputation as a centre of academic learning or research institutes. ▪ The university or research institutes normally have a Development Department which is responsible for the construction of projects within the confines of the university or its branches nearby or at other sites.
2. Private clients: ▪ Developers. ▪ Normally responsible for new townships or expanding existing ones.
3. Consultants ▪ Consultant firms registered with Board of Architects Malaysia, Board of Engineers Malaysia and Board of Quantity Surveyors Malaysia.
4. Contractors ▪ Contractor organisations registered with CIDB Malaysia under G7 to G4 categories.

A consultation meeting with two professional statisticians from the Department of Statistics, Industrial Production and Construction Statistics Division, Putrajaya, Malaysia was conducted to verify the target population used for this study. The two statisticians are involved in the annual 'Survey of Construction Industries for Quarterly Construction Survey' for the purposes of Gross Domestic Product (GDP) and the

Economic Census for government fiscal report. The population for this survey are industry players in the Federal Territory of Kuala Lumpur and Selangor. This is justifiable since these two states represent almost 70% of construction work carried out in Malaysia. In addition, as adopted by them, contractors registered under G3 to G1 categories with CIDB which have a value of work done of less than RM 500,000 per year are considered insignificant to be included as population for statistical purposes. Furthermore, their offices address as registered with the CIDB Directory are mostly non-existent, leading to impracticalities to include them since they were unreachable. In conclusion, the criteria for population and sample depend on the objectives of the survey, budget, economic capabilities and practicability of the research.

The next step of the study is distributing the questionnaires. A total of 1,000 questionnaire surveys were sent out. The self-administered delivery was employed in this study to deliver the questionnaires in order to maximise the response rate. The targeted respondents from the organisations were from various levels of seniority, including directors, project managers and project team members from senior management, middle management and junior level personnel, as adopted by Egbu (2004). Coded marked questionnaires were not adopted during distribution of the survey to provide strict confidentiality to the respondents due the nature of this research.

The justifications for the self-administered delivery in administering the survey are as follows.

- During the pilot interviews, concerns were raised by the respondents on the anticipated response for the survey. This was due to the "sensitive" nature of the study. It was recommended that the researcher adopt a more approachable method, that is, face-to-face delivery of the questionnaire survey including a

brief overview to the prospective respondents on the importance of the research and its contribution to the industry.

- This method was adopted by Zarkada and Skitmore (2000) in their study on "decisions with moral content: collusion" in the Australian construction industry. According to Fan *et al*. (2001a) in their study on ethical behaviours of quantity surveyors, self-administered questionnaires were the most expedient way to gather information from representatives of the relevant groups.

The close attention to this part of research in motivating respondents' participation led to the achievement of a useable response rate of 33%. This percentage is not comparable to other surveys carried out in the same manner; for example, in a study of codes of ethics best practice in the Swedish public sector carried out by Svensson and Wood (2004), the percentage response was 83%. However, in view of the sensitivity of the questionnaire, particularly on the ethical background and ethical issues investigation (Parts B and C), it is considered acceptable, since, as compared to postal questionnaires, the normal useable response rate is also usually low, between 25-35% (Fellows and Liu, 2008).

Nevertheless, there were some expected difficulties experienced by the researcher when delivering the questionnaires directly. There were quite a number of occasions where she was ridiculed by prospective respondents for researching the topic of ethics. It was seen, by many, as doubting the integrity of their professionalism as practitioners in the industry. Another hesitation is that they did not want to participate in a "philosophical" survey. However, without returning to the values and aspirations underpinning a specific practice, how may progress occur? (Arvy and Renz, 1992) Negative comments made by the prospective respondents include: "*This is how we normally work - our*

culture", "*Is ethics relevant in this industry*?", "*Are you from the Anti Corruption Unit*", "*Who do you think you are? We have been in the industry for so long; you can't make a difference*", and, "*I dare you to bring the recommendations to the Prime Minister*". After explaining the relevance of the research, on a few occasions up to one hour, the researcher normally managed to convince the prospective respondent to participate in the questionnaire. However, in most of these cases, the questionnaires were never returned. In one occasion, the prospective respondent was quite upset with the current ethical scenario of the industry and was on a number of occasions a victim of unethical practices; however, he was not willing to participate, citing "*nothing can change*". Nevertheless, there were also constructive comments, "*Finally, somebody is attempting to do something about the ethics in the industry*" - from a professional who is over 55 years old and retiring soon from the industry, and, "*Very good research topic - it's going to be difficult, but will be meaningful*". All these negative and positive comments suggest that there exist ethical problems in the industry. It also suggests the challenges, but, more importantly prospects for improvement of ethics in the industry, which further fuels the necessity for this research.

6.5 Summary

Questionnaire design is most important as it will affect the response rate, the reliability and validity of data collection in order to meet the objectives of the research. Literature review (in Chapters 2 and 3) and pilot interviews (in Chapter 5) as discussed previously have contributed towards the development of careful design of individual questions in the questionnaire. In addition to this, the researcher has also developed several questions and modified questions used in previous questionnaire surveys. The order and flow of the questions were also taken into consideration for a clear layout of the questionnaire form.

In order to assess the validity and reliability of the developed questionnaire, it was pilot tested to a group of respondents, similar to the population that was being used in the survey. The results from the pilot survey were tested for reliability using Cronbach's coefficient alpha (α). Following the results of this analysis and feedback comments from the respondents, necessary amendments were made to the questionnaire for a final and improved questionnaire for survey.

The administration of the questionnaire survey was then executed to a sample from the population frame. The analysis and discussion of results for the questionnaire survey is described in the following chapter.

CHAPTER 7

DATA ANALYSIS AND DISCUSSION OF RESULTS

7.1 Introduction

This chapter continues with Phase 3 of the research process. This follows the questionnaire survey, which consist of relevant and related questions identified from secondary data and the pilot interviews. This chapter will cover the empirical evaluation, where after data collection; data analysis is then carried out. It describes the questionnaire survey analysis and discusses the results of the survey.

7.2 Questionnaire survey analysis

7.2.1 Questionnaire survey data

Out of the total 1,000 questionnaires sent, 341 were returned. Of these, 12 questionnaires that were not substantially completed either/or in Part B, C and D of the questionnaire which forms the major part of the study were deemed unusable and discarded. Thus, 329 were usable, representing a 33% usable response rate. The questionnaires were coded by an ascending numbering system as they were returned, from number 1 to 329 to facilitate computer analysis. Data from the 329 questionnaires were checked and analysed.

The quantitative data from the questionnaires were analysed using the SPSS (Statistical Package for the Social Sciences) software. During the course of data entry, there were six respondents who had not answered several questions, which caused gaps in the data file. The ‘missing values’ are on the average, four unanswered questions per respondent. This could either be due to genuinely missing answering or simply refusing to answer. George and Mallery (2003), the authors of “SPSS for Windows - Step by Step, A

Simple Guide and Reference", suggest that to the greatest extent possible, deal with missing values during the data-coding phase rather than relying on SPSS-missing-value defaults. The frequent procedure is to replace missing values with the mean score of all other subjects for that variable, as adopted by the researcher. Although replacing missing values by these techniques can sometimes bias the results, a small number of replacements have little influence on the outcome of the analysis. An often-used rule of thumb suggests that it acceptable to replace up to 15% of data by the mean of the distribution with little damage to the resulting outcomes (George and Mallery, 2003).

7.2.2 Method of analysis

Analysis is carried out on the data obtained from the questionnaire survey. The statistical tests performed are test of reliability, frequency analysis, analysis of means and analysis of variance (ANOVA). The analysis is carried out in four main parts in accordance with the objectives of the research. These four parts are Part A, B, C and D in the questionnaire. Table 7.1 shows the questionnaire parts and analysis performed for each of them.

Table 7.1: The questionnaire parts and analysis performed

Questionnaire : Parts		**Analysis**
Part A	Background of respondents: Demography and career profile.	Frequency
Part B	Ethical background of construction professional, organisation and industry B1: Understanding the importance of ethics B2: Standards of ethics	1. Test of reliability 2. Descriptive statistics of mean scores 3. Analysis of variance - One way ANOVA
Part C	Ethical issues	1. Test of reliability 2. Descriptive statistics of mean scores 3. Analysis of variance - One way ANOVA
Part D	Factors to improve ethics	1. Test of reliability 2. Descriptive statistics of mean scores 3. Analysis of variance - One way ANOVA

For Part A, the demographic data were analysed to provide frequencies for different demographic types, to identify the magnitude of characteristics of the respondents.

For Parts B, C and D, the first analysis is the test of reliability. The use of statements in all these parts to measure perceptions of respondents requires that these statements be consistent or reliable. In the reliability testing technique, this consistency is manifested in Cronbach's coefficient alpha (α) value. If the Cronbach's coefficient alpha (α) is high, the statements are consistent (reliable) and vice versa. The second analysis is the descriptive statistics. Mean ratings compare the magnitude of variables in terms of attitudes, beliefs, opinions or practices and useful for describing a large number of populations (Creswell, 2005). The analysis of means is employed to identify: i) the level of understanding the importance of ethics and standards of ethics (Part B); ii) the occurrence of ethical issues, enforcement issue and effects of unethical practice to the industry (Part C); and iii) importance of factors to improve ethics in the industry (Part D). Consequently, ranking of means is used to identify significant ethical issues and factors to improve ethics in the industry. The third analysis is the One-way analyses of variance - ANOVA. One - way Anova could tell if there are significant differences within any of the comparisons of groups (George and Mallery, 2003). ANOVA tests were performed to identify any significant difference between Part B (understanding the importance of ethics and standards of ethics), C (ethical issues) and D (factors to improve ethics) against appropriate and relevant demography profiles of the respondents.

7.3 Part A: Background of respondents

7.3.1 Introduction

This section covers the analysis of data and discussion on the respondents' demography and career profiles as in Part A of the questionnaire. The objective of this analysis is to investigate the background of the respondents in order to validate their reliability on the outcome of research results and objectives.

7.3.2 Demography and career profile

The data for demography and career profile of the respondents are shown Table 7.2. The demographic data were analysed to provide frequencies for different demographic profiles. They are age (A1), sex (A2), education level (A3), professional discipline (A4), registration with relevant professional board (A5) and other relevant professional bodies (A6), position in organisation (A7), type of organisation (A8), years of working experience in the construction industry (A9) and of type of work experience in the construction industry (A10).

The majority of respondents are between 30 to 39 years of age (38.9%), followed by those between 20 to 29 years (29.8%), 40 to 49 years (24%) and 50 years and above (7.3%). This suggests that the respondents represent a distribution of a mixed group of age maturity. The proportion of male respondents (69.6%) is higher than the female (30.4%) which suggests that the industry predominantly consist of male professionals, which is acceptable considering the nature of work in the industry.

With regards to highest education level (A3), most of them have a bachelor degree education (68.1%), some have post-graduate degrees - Master degree (16.4%) and a few have doctorate (2%); which total up to 85.1%. This suggests that the majority of

respondents have received undergraduate or higher education which represents good reliability for the results of the survey. The remaining respondents are certificate holders (1.2%), diploma (13.4%) and professional diploma (0.3%).

Quantity surveying (33.7%) predominated among the professional discipline (A4) of respondents, followed closely by civil engineering (32.8 %). The other professional disciplines are architecture (10%), mechanical engineering (9.7%), electrical engineering (7.6%), building surveying (1.2%) and *others* (4.9%). This shows that the majority of respondents are trained in quantity surveying and civil engineering. Considering that the quantity surveyors are normally involved in contractual matters throughout the life of the project, and the civil engineers are normally involved in the project management of projects at site, they give a fair representative for the research on ethics in the industry.

The respondents' registrations with their relevant professional boards (A5) are as follows: Board of Engineers Malaysia (43.8%), Board of Quantity Surveyors Malaysia (14.6%), Board of Architect Malaysia (6.4%) and *others* (1.2%). 66% of the respondents are not registered with any of their relevant professional board. This suggests a lax attitude with regards to their professional entity and is unhealthy for the industry as these professional boards are the governing bodies in Malaysia which manage professional status for individuals to practice their professions. With regards to other professional bodies (A6) that support professionalism, 16.1% of the respondents are registered with the Institution of Surveyors Malaysia, 29.5% are registered with the Institution of Engineers Malaysia, 6.7% with the Malaysian Association of Architects, 2.7% with *other* professional bodies, and 45% are not registered with any of the other professional bodies.

Table 7.2: Demographic data of respondents

Item	Demographic type	Description	Frequency	Percentage (%)
A1	Age	20 - 29 years	98	29.8
		30 - 39 years	128	38.9
		40 - 49 years	79	24.0
		50 years and above	24	7.3
A2	Sex	Male	229	69.6
		Female	100	30.4
A3	Education Level	Certificate	4	1.2
		Diploma	44	13.4
		Professional Diploma	1	0.3
		Bachelor degree	224	68.1
		Master degree	54	16.4
		Doctorate	2	0.6
A4	Professional discipline	Architecture	33	10.0
		Quantity surveying	111	33.7
		Building surveying	4	1.2
		Civil engineering	108	32.8
		Mechanical engineering	32	9.7
		Electrical engineering	25	7.6
		Others, please specify	16	4.9
A5	Registration with relevant professional board	Board of Quantity Surveyors Malaysia	48	14.6
		Board of Engineers Malaysia	144	43.8
		Board of Architect Malaysia	21	6.4
		Others, please specify	4	1.2
		Not registered	112	66.0
A6	Registration with other relevant professional bodies	Institution of Surveyors Malaysia	53	16.1
		Institution of Engineers Malaysia	97	29.5
		Malaysian Association of Architects	22	6.7
		Others, please specify	9	2.7
		Not registered	148	45
A7	Position in organisation	Executive	58	17.6
		Senior management	85	25.8
		Middle management	112	34.0
		Junior level personnel	74	22.5
A8	Type of organisation	Public client	94	28.6
		Private client	65	19.8
		Consultant	100	30.4
		Contractor	70	21.3
A9	Years of working experience in the construction industry	less than 2 years	28	8.5
		2 - 5 years	82	24.9
		6 - 10 years	69	21.0
		11 - 15 years	69	21.0
		16 - 20 years	28	8.5
		more than 20 years	53	16.1
A10	Type of work experience	Building Works	198	60.2
		Mechanical and electrical works	46	14.0
		Roads and/or bridges	23	7.0
		Other civil works (example: tunnels, dams)	24	7.3
		Other infrastructure works (examples: sewerage, water reticulation, telephone or electrical infrastructure)	38	11.6

With regards to position in organisation (A7) of the respondents, 17.6% are at the executive level, 25.8% are senior management, 34.8% are middle management and 22.5% are junior level personnel. Executive respondents comprised directors and partners, senior management comprised managing directors, middle management comprised project managers and general managers, and junior level personnel comprised technical assistants. The results show that the majority of respondents are senior and middle management (total = 60.6%), which further adds reliability to the survey results, since they are normally quite informed about the industry.

The respondents also represent a fair distribution of the four (4) types of organisations (A8); that is, consultants (30.4%), public clients (28.6%), contractors (21.3%) and private clients (19.8%). This provides credibility for the survey results and research objectives, since the "voice" on ethics is heard from main industry participants.

The respondents' years of working experience in the industry (A9) ranges from: more than 20 years (16.1%); 16 to 20 years (8.5%); 11 to 15 years (21%) and 6 to 10 years (21%). The results show that these respondents have had wide exposure in the construction industry, which suggest good reliability towards their perceptions in the questionnaire survey. The remaining respondents who are considered juniors in the construction industry have 2 to 5 years (24.9%) and less than 2 years (8.5%) working experience.

The respondents were involved in building works (60.2%), mechanical and electrical works (14%), roads and bridges (7 %), *other* civil works, for example, tunnels and dams (7.3%), other infrastructure works; for example, sewerage, water reticulation and telephone and electrical infrastructure (11.6%). These types of work experiences (A10)

of the respondents encompass a grouping of the "construction works" in "construction industry" as defined in Section 2 of the Construction Industry Development Board Act 1994 (CIDB, 1994) which provides one of the most comprehensive definitions of the term "construction works". The respondents' work experience provides a wide - ranging scope of work, making the data collected reflective of the industry's activities.

There were also respondents in the industry that represented themselves as "others" in the following demography profiles: professional discipline (A4), registration with relevant professional board (A5), registration with other relevant professional bodies (A6) and type of work experience (A10). These data are shown in Table 7.3. Except for type of organisation, this table *will only* highlight the response of "others", and does not include other demographic profiles since they have been discussed earlier in the respective sections above.

Table 7.3: Respondents with the response of "Others, please specify….."

Respondent No.	Type of organisation (A8)	Professional Discipline (A4)	Registration with the relevant board (A5)	Registration other relevant professional bodies (A6)
16	Private client	Housing, Building and Planning (calls himself Building engineer)	-	-
33	Private client	Mining engineering	Board of Planners	Malaysian Institute of Planners
34	Public client	Urban planning	Board of Planners	Malaysian Institute of Planners
36	Contractor	Urban regional planning	Board of Planners	Malaysian Institute of Planners
42	Contractor	Town planning	Board of Planners	Malaysian Institute of Planners
95	Contractor	Building management	-	Malaysian Institute of Management
98	Contractor	Chemical and process engineering	-	-
113	Private client	-	-	Institute of Materials Malaysia
116	Consultant	Geotechnical engineering	-	-
142	Private client	Business	-	-
164	Contractor	Town planning	-	-
165	Contractor	Urban Planning	-	-
214	Consultant	-	-	Institute of Value Management Malaysia
300	Public client	-	-	Road Engineering Association of Malaysia (REAM)
301	Contractor	-	-	American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
307	Contractor	Construction management	-	-
309	Contractor	Mathematics and economics	Board of Accountant	Malaysian Institute of Accountant
311	Contractor	Chemical engineering	-	-
312	Contractor	Construction management	-	-
315	Contractor	Interior design	-	-
				Type of work, which best describes your specialised field or most experienced (A10)
270	Consultant	-	-	Other civil works - piping design for oil and gas industry (upstream and downstream)

Table 7.3 shows that that construction industry consists of not only professionals trained in the normal fields of construction and engineering which are: architecture, quantity surveying, civil, mechanical and electrical engineering but, it also comprises of other different disciplines. For example, on the "others" response for professional discipline (A4), Respondents number 36, 42, 164 and 165 from the contractors' organisation, have professional disciplines in either urban or town planning. The table also shows their "others" response for registration with relevant professional bodies (A5 and A6); for example, Respondents number 36 and 42 are registered with the Board of Planners and Malaysian Institute of Planners. There is even a respondent (Respondent number 309 - a contractor) who has professional training in mathematics and economics and is registered with the Board of Accountant and Malaysian Institute of Accountant.

For example, on "others" response for registration with relevant professional institution (A6), Respondents 113, 214, 300 and 301 are also registered with Institute of Materials Malaysia, Institute of Value Management Malaysia, Road Engineering Association of Malaysia (REAM) and American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). This shows that besides registering with the professional bodies concerned with the construction entity, for example, the engineers with Board of Engineers Malaysia, the respondents are also registered with other relevant bodies particular to their specialism or interest.

With regards to "others" response with type of work experiences (A10), Respondent 270 added his work description in other civil works - piping design for oil and gas industry (upstream and downstream). This shows that the respondents' scope of work is varied, which include work that is defined as "construction works" under the

Construction Industry Development Act 1994 (CIDB, 1994) (See Glossary of terms and abbreviations).

7.3.3 Summary of Part A: Demography and career profile

The demographic and career profiles of the respondents with respect to age (A1), sex (A2), highest education level (A3), professional discipline (A4), registration with relevant professional board (A5) and other professional bodies (A6), position in organisation (A7), type of organisation (A8), years of working experience in the construction industry (A9) and type of work experience (A10) show that the background of the respondents in the questionnaire survey is representative of the Malaysian construction industry environment in which the research was conducted. It also shows that the respondents have a role in the industry.

7.4 Part B: Ethical background of the individual, construction professional, organisation and industry

7.4.1 Introduction

This section covers Part B of the questionnaire. It is the analysis and discussion of results with regards to the ethical background of the construction industry based on the demographic data. The objective of this analysis is to provide for the initial inquiry on ethics in the industry. It is divided into two main components: B1 - to establish understanding of the importance of ethics; and B2 - to determine standard of ethics.

The first analysis is the test of reliability for the two components. The second analysis is descriptive statistics of mean scores on perceptions of respondents on the statements in these two components. The third analysis is the One - way ANOVA. This analysis is to discover if respondents from the different demographic profiles differ significantly from each other on the ethical background inquiry. This is important as demographic profiles

such as the respondents' years of working experience may generate different results on the understanding of importance of ethics and standard of ethics.

7.4.2 Test of reliability

There are 27 statements in Part B of the analysis. The number of statements and the results of reliability tests for each component are shown in Table 7.4.1. The Cronbach's coefficient alpha values are 0.748 (B1: understanding the importance of ethics) and 0.778 (B2: standard of ethics.). This implies that the various statements reliably and consistently measure the perceptions of the respondents on these two components as "acceptable" ($\alpha > .7$) (Refer to Table 6.3: Cronbach's coefficient alpha (α) rule of thumb).

Table 7.4.1: Cronbach's coefficient alpha (α) for Part B

Statement No.	**No of Components**	**Components**	**No of statements**	**(α)**
B1a - B1c; - B8	1	B1: Understanding the importance of ethics	10	0.748
B9a - B9f	2	B2: Standards of ethics	17	0.778
		Total number of statements	27	

7.4.3 Descriptive analysis

The following analysis presents the perceptions of the respondents on the statements in the two components on ethical background. As described earlier in Chapter 6, all statements use the Likert 5 - point scale; 1- strongly agree, 2 - agree, 3 - neither agree or disagree, 4 - disagree, and 5 - strongly disagree.

7.4.3.1 Part B1: Understanding the importance of ethics

The first inquiry on the ethical background in the industry is to establish the understanding of the importance of ethics of the respondents in their capacities as an

individual, construction professional and an employee in an organisation. It is divided into three sub-components as in Table 7.4.2.

Table 7.4.2: Part B1 - Understanding the importance of ethics

Statement No.	Sub - components
B1a - B1c	Ingredients to uphold ethics
B2 - B5	Professional institutions' code of ethics
B6 - B8	Organisations' code of ethics

The first component intends to establish understanding of the importance of ethics of an individual and construction professional, on the ingredients to uphold ethics (statements B1a - B1b). The second component intends to establish the same objective, but, of a construction professional, on his understanding of the importance of ethics sanctioned through professional institutions code of ethics (statements B2 - B5), and, of employee in an organisation (third component) on his understanding of the importance of ethics sanctioned through respondents' own organisation's code of ethics (statements B6 -B8). The analysis of these sub-components are dealt firstly one by one, and followed by a summary analysis of this component.

7.4.3.2 Ingredients to uphold ethics

Table 7.4.3 presents the means, median and standard deviations (SD) scores on the ingredients to uphold ethics, by each statement arranged in ascending order of size, which is the respondents' declining agreeability; and summary on all statements.

Table 7.4.3: Ingredients to uphold ethics

	Statement	Rank	Mean	Median	S.D
B1	The ingredients to uphold ethics are:				
B1b	Obligation to the 'duty of care' in professional liability	1	1.72	2.00	0.644
B1a	Self - regulation to maintain high ethics	2	1.73	2.00	0.740
B1c	Following the code of professional ethics or conduct	3	1.75	2.00	0.660
	All statements		1.74		

By individual statements, on average, the respondents agree with all the statements. As construction professionals, the respondents agree the most with "obligation to the duty of care in professional liability" (B1b, mean = 1.72) and agree the least with "following the code of professional ethics or conduct" (B1c, mean = 1.72). The results also suggest that the respondents being individuals, understand that self - regulation is also necessary to maintain high ethics (B1a, mean = 1.73). Considering all statements together, the mean score of 1.74 implies that on average, the respondents agree with the three ingredients to uphold ethics. The results suggest that the respondents as individuals and construction professionals have a relatively good understanding of the importance of ethics in their professions.

7.4.3.3 Understanding the importance of ethics sanctioned through professional institutions' code of ethics

Table 7.4.4 presents the means, median and standard deviations (SD) scores on understanding the importance of ethics sanctioned through professional institutions' code of ethics.

Table 7.4.4: Understanding the importance of ethics sanctioned through professional institutions' code of ethics

	Statement	Rank	Mean	Median	S.D
B4	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions can address and provide a working guideline for ethical problems of the professionals.	1	2.01	2.00	0.705
B2	I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions	2	2.08	2.00	0.618
B3	I understand the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions to uphold ethical standards.	3	2.09	2.00	0.654
B5	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions are effectively enforced.	4	2.74	3.00	0.888
	All statements		2.23		

By individual statements, on average, the respondents understand the importance of ethics sanctioned through professional institutions' code of ethics. They agree the most with "byelaws, regulations and rules of ethics or conduct published by professional institutions can address and provide a working guideline for ethical problems of the professionals" (B4, mean = 2.01). They agree the least with "byelaws, regulations and rules of ethics or conduct published by professional institutions are effectively enforced" (B5, mean = 2.74), which suggest that, they would like the institutions to play a more pro - active role in the enforcement of code of ethics amongst professional members. The results also indicate that respondents in their capacities as construction professionals are, i) aware of the existence of "professional institutions' byelaws, regulations and rules of ethics or conduct (B2: mean = 2.08) and ii) understand its role in upholding ethical standards (B3: mean = 2.09). Considering all statements together, the mean score of 2.23 implies that on average, the results suggest that the respondents as construction professionals have a relatively good understanding of the importance of ethics through the professional institutions code of ethics.

7.4.3.4 Understanding the importance of ethics sanctioned through organisations' code of ethics

Table 7.4.5 presents the means, median and standard deviations (SD) scores on the understanding of the importance of ethics sanctioned through organisations' code of ethics. By individual statements, on average, the respondents understand the importance of ethics sanctioned through their own organisation's code of ethics. They agree the most and "understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation" (B7, mean = 2.24). They agree the least with "the General Guidelines for Ethics, or Code of Ethics or Conduct published in my company are effectively enforced" (B8, mean = 2.60), which indicate that the respondents would

like their own organisations to play a more pro - active role in the enforcement of their code of ethics amongst employees.

Table 7.4.5: Understanding the importance of ethics sanctioned through organisations' code of ethics

	Statement	Rank	Mean	Median	S.D
B7	I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation	1	2.24	2.00	0.726
B6	I am aware of the existence of a written and formal General Guideline for Ethics, or Code of Ethics or Conduct in my organisation	2	2.35	2.00	0.732
B8	The General Guidelines for Ethics, or Code of Ethics or Conduct published in my company are effectively enforced	3	2.60	3.00	0.723
	All statements		2.40		

Considering all statements together, the mean score of 2.40 implies that on average, the results suggest that the respondents as employees in an organisation have a relatively good understanding of the importance of ethics sanctioned through their own organisation's code of ethics.

7.4.3.5 Summary: Understanding the importance of ethics

Table 7.4.6 presents the summary mean scores for all the sub-components in understanding the importance of ethics by the respondents.

Table 7.4.6: Summary mean score - Understanding the importance of ethics

No.	Statement	Mean
	Sub-components	
B1a - B1c	Ingredients to uphold ethics	1.74
B2 - B5	Professional institutions' code of ethics	2.23
B6 - B8	Organisations' code of ethics	2.40
	All statements	2.12

By all statements in the sub-components, the results show that respondents understand the importance ethics; as investigated through the ingredients to uphold ethics (mean =

1.74); followed by those sanctioned through professional institutions' code of ethics (mean 2.23); and, those sanctioned through organisations' code of ethics (mean = 2.40). On the necessary ingredients to uphold ethics, the respondents' perceptions as an individual by "self - regulation to maintain high ethics"; and, as a construction professional on "the obligation to the 'duty of care' in professional liability" and "following the code of professional ethics or conduct" indicated that the respondents' understanding of the importance of ethics is relatively good.

The results also suggest that the respondents as construction professionals, and also as employees, understand the importance of code of ethics, sanctioned through professional institutions and their own organisations. This is revealed from the results of the statements in the questionnaire which indicate that they are aware of the presence of the code of ethics, understand it, and appreciate the code of ethics' roles in upholding ethical standard and its enforcement.

In conclusion, considering all statements in all sub-components together, the mean score of 2.12 implies that on average, the respondents understand the importance of ethics. This indicates a healthy ethical background of the respondents in their capacities as individuals, construction professionals and employees of organisations who are essentially construction participants in the construction industry.

7.4.3.6 Part B2: Standard of ethics

The second inquiry on the ethical background in the industry is to determine standard of ethics of the construction professional, the organisation and the industry itself. It is divided into four sub-components as in Table 7.4.7. The first and second components intend to determine the standard of ethics of the construction professional, which is

investigated by his perception on the criteria for project performance (statements B9a - B9f) and ethical dilemmas and decision - making during work (ethical issues of right or wrong) (statements 10a - 10c). The third component intends to determine the standard of ethics of the organisation (statements B11 - B16) and finally, the standard of ethics of the industry itself (fourth component) (statement B17). The analysis of these sub-components are dealt firstly one by one, and followed by a summary analysis of this component.

Table 7.4.7: Part B2: Standard of ethics

Statement No.	**Sub-components**
B9a - B9f	Criteria for project performance: the construction professional
B10a - 10d	Ethical dilemma and decision making: the construction professional
B11 - B16	The organisation
B17	The industry

7.4.3.7 Criteria for project performance

Table 7.4.8 presents the means, median and standard deviations (SD) scores on the criteria for project performance by each statement arranged in ascending order of size which is the respondents' declining agreeability.

Table 7.4.8: Criteria for project performance

	Statement	**Rank**	**Mean**	**Median**	**S.D**
B9	Criteria for project performance:				
B9c	It was completed according to specifications	1	1.78	2.00	0.759
B9d	It was completed to the client's satisfaction	2	1.81	2.00	0.760
B9b	It was completed within time	3	1.89	2.00	0.894
B9a	It was completed within budget	4	1.90	2.00	0.853
B9e	General public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)	5	2.22	2.00	0.842
B9f	It was completed by upholding ethical principles	5	2.22	2.00	0.781

In order to determine standard of ethics of the respondents, the first analysis is the perception of the respondents on their criteria for project performance, categorised into six (6) categories; where the element of ethics is introduced. They are: "it was completed : a) according to specifications, b) to the client's satisfaction, c) within time, d) within budget, e) general public satisfaction affected by the project whether during or after construction and, f) by upholding ethical principles."

By individual statements, on average, the respondents agree with all the statements. The criteria for project performance which is the most agreeable among the respondents is: it is completed according to "specifications" (B9c: mean = 1.78), followed by "client satisfaction" (B9d: mean = 1.81), "within time" (B9b: mean = 1.89), and "within budget" (B9a: mean = 1.90). The results indicate that the respondents who in their capacities as construction professionals regard the above criterions for project performance as foremost important, since these criterions are their obligations in the contract.

On the other hand, the notion of public satisfaction as a criterion for project performance is the least agreeable; "general public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)" (B9e: mean = 2.22). This result is similar to when ethics is considered as a criterion for project performance; "it was completed by upholding ethical principles" which was also considered the least agreeable (B9f: mean = 2.22). This suggests that the respondents are also agreeable on public satisfaction as a criterion for project performance, which reflects their responsibility on public accountability. However, a more meaningful result indicates that they accepted ethics as a criterion for project performance; a novel finding for this research, which suggest that their standard

of ethics is relatively good. Nevertheless, overall, the respondents, in their capacities as construction professionals, consider the project management and client criterions; that is, specification, time, budget and client satisfaction as more important criterions for project performance than upholding ethical principles.

7.4.3.8 Ethical dilemma and decision - making

Table 7.4.9 presents the means, median and standard deviations (SD) scores on the ethical dilemma and decision-making investigation.

Table 7.4.9: Ethical dilemma and decision - making

	Statement	Rank	Mean	Median	S.D
B10	The importance of the following parties "when faced with ethical dilemmas and decision - making during work (ethical issues of right or wrong)"				
B10c	The interest of my client	1	1.96	2.00	0.684
B10b	The interest of company/organisation	2	1.99	2.00	0.711
B10d	The interest of the general public (i.e. social obligation and accountability)	3	2.11	2.00	0.769
B10a	My own interest	4	2.96	3.00	1.029

In order to determine standard of ethics of the respondents, the next analysis is the perception of the respondents, on the importance of parties who have interest on the project, in circumstances when the respondents face ethical dilemmas and decision - making during work (ethical issues of right or wrong). The parties who have/or may have an interest on the project are, a) the respondents' themselves, b) the company or organisation, c) the client and d) general public with regards to social obligation and accountability.

By individual statements, on average, the respondents agree with all the statements. "The interest of my client" (B10c: mean = 1.96) is the most agreeable among the respondents when faced with ethical dilemmas and decision - making during work, followed by "the interest of company/organisation" (B10b: mean = 1.99). The results

indicate that the respondents in their capacities as construction professionals have regarded these two parties who have the main interest in the project as primary importance. This is acceptable, since as professionals, their main responsibility is towards their clients first, and then their organisation. On the other hand, the interest of the general public is second least agreeable; "the interest of the general public" (B10d: mean = 2.11), followed by the least agreeable which is the interest of the respondents themselves; "my own interest" (B10a: mean = 2.96).

In summary, evidence from the results indicates that the respondents have placed the interest of clients as their main priority when they are faced with ethical dilemmas and decision - making during work, and instead placed their own interest as their least concern. This result suggests that their standard of ethics is relatively good which reflects a healthy environment on the ethical background of construction professionals in Malaysia.

7.4.3.9 Ethics of the organisation

The following analysis is the perception of respondents on five statements (B11 - B16) on ethical management of organisations, to determine the standard of ethics of their respective organisations. Table 7.4.10 presents the means, median and standard deviations (SD) scores on the ethics of the organisation.

By individual statements, on average, the respondents agree with all the statements. It is encouraging that, among all the statements, the most agreeable from the respondents is "my company considers ethical practice as an important criteria when meeting and achieving their goals and objectives (B11: mean = 2.00); followed by "my company has a reputation in the market that customers can trust our promises" (B14: mean = 2.07);

and “my top executives frequently refer to the importance of ethics in making this company successful” (B12: mean = 2.18). These statements focus on the organisational ethics setting and the results suggest that the organisations have a relatively good standard of ethics; right from the organisations’ objectives (B11), which is reflected in the customers’ trust (B14) and championed by their leadership (B12).

Table 7.4.10: Ethics of the organisation

No.	Statement	Rank	Mean	Median	S.D
B11	My company considers ethical practice as an important criterion when meeting and achieving their goals and objectives.	1	2.00	2.00	0.720
B14	My company has a reputation in the market that customers can trust our promises.	2	2.07	2.00	0.703
B12	My top executives frequently refer to the importance of ethics in making this company successful.	3	2.18	2.00	0.793
B16	My company’s best employees stay here because it is a good place to work.	4	2.39	2.00	0.876
B13	In my company, management “walks its talks”. Our culture is such that executives model what they preach.	5	2.43	2.00	0.759
B15	My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	6	2.69	3.00	1.037
	All statements		2.29		

Nevertheless, the respondents are not quite enthusiastic on the behaviour of leaders, “in my company, management “walks its talks” - our culture is such that executives, model what they preach” (B13: mean = 2.43), which the second least agreeable statement. The results also indicate the respondents’ or employees’ commitment towards their organisation: “my company’s best employees stay here because it is a good place to work” (B16: mean = 2.39). This may also suggest that the respondents or employees are satisfied with the ethical setting of the organisations.

The least agreeable statement concerns “my company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints” (B15: mean = 2.69). This may suggest that

the “ethics hot-line” mechanism of an “ethics office” might be new in organisations in Malaysia; however it may exist in an informal way for respondents/employees to voice their concerns on unethical practices within the organisations.

Considering all statements together, the mean score of 2.29 implies that on average, the respondents agree with the positive statements on the ethical setting of the organisation. In summary this result indicates that the employees of construction organisations surveyed suggest that the standards of ethics of their organisations are relatively good. This reflects a healthy environment of ethical background within construction organisations in Malaysia.

7.4.3.10 Ethics of the industry

The following analysis is the perception of respondents on the statement: “I perceive that the overall ethical standard of the construction industry in Malaysia is **high**” (B17). Table 7.4.11 presents the mean and percentage scores on the statement to determine the standard of ethics of the industry.

Table 7.4.11: Ethics of the industry

	Statement	**Mean**	**Strongly Agree**	**Agree**	**Neither agree or disagree**	**Disagree**	**Strongly disagree**
	Sub-component 4: The industry		**%**				
B17	I perceive that the overall ethical standard of the construction industry in Malaysia is high.	3.42	1.2	25.2	15.5	46.5	11.6
			Total = 26.4		15.5	Total = **58.1**	

The mean of 3.42 indicates that the respondents are quite undecided when expressing their perception on the standard of ethics of the industry. However, further analysis on the percentage results show that the total “disagree and strongly agree” is higher (58.1%) than “strongly agree and agree” (26.4%), with the remaining, uncertain

(15.5%). This suggests that the respondents who are construction professionals and employees of construction organisations perceive that the overall standard of ethics of the construction industry in Malaysia is relatively low. It seems that what has been said by numerous reports of unethical practices and issues on the state of ethics of the industry is now confirmed. This reflects a dismal environment of ethical background within the construction industry in Malaysia. The result of this study is similar to a survey carried out by Abdul Rahman *et al* (2011), where all respondents agreed that the ethical standard in the Malaysian construction industry is considered low.

7.4.3.11 Summary: Standard of ethics

The results have shown that the respondents consider that alongside the project management criteria of specifications, time, budget and client satisfaction; another important criterion in project performance is "upholding ethics" (mean = 2.22). With regards to situations of ethical dilemmas and decision - making during work, the results show that the respondents have ranked the interest of clients first (mean = 1.96) before other parties that have an interest in the project; i.e., the company and general public; and, ranked their interest last (mean = 2.96). Hence, this suggests a relatively good standard of ethics of the respondents in their capacities as construction professionals.

The next analysis revealed that the ethical standards of construction organisations of the respondents are relatively good. This is shown from the agreeable results of the statements in the questionnaire on the ethical background of their organisations (average mean = 2.29). However, the final analysis on the ethical standard of the construction industry in Malaysia shows that it is relatively low. This is shown from the higher percentage of disagreeability (58%) on the inquiry statement of 'high' ethical standard of the industry.

In summary, evidence from the results suggests that standard of ethics of the respondents and their organisations are relatively good. This suggests a good foundation of ethical background of the construction professionals and construction organisations. However, this is not mirrored in the overall standard of ethics for the industry. Therefore, a tangible framework is needed in order to improve ethics within the construction industry; thus, reinforcing the aim of this research.

7.4.4 One - way ANOVA analysis

7.4.4.1 Introduction

This section will cover the One - way ANOVA analysis for Part B of the questionnaire on the ethical background in the construction industry. The objective of the analysis is to investigate if there is sufficient evidence to infer that respondents from the demography profiles differed significantly from each other on the two components of i) B1: understanding the importance of ethics; and ii) B2: standards of ethics. Further mean scores were analysed for perceptions on these two components where there are significant differences between the demography profiles.

One-way ANOVA analysis is conducted between the sub-components (dependent variables) and demography profile (independent variables) as in Table 7.4.12. For the purposes of discussion of analysis, only the results of the One Way ANOVA test that has a significant difference: p value < 0.05 (George and Maller, 2003) are described further.

Table 7.4.12: Dependent and independent variables

Component No. 1 **Part B1 - Understanding the importance of ethics**			
Statement No.	**Dependent variables: Components**	**Independent variables**	**Categories for independent variables**
	Sub - components		
B1a - B1c	Ingredients to uphold ethics of a construction professional	**A4**: Professional discipline **A9**: Years of working experience in the construction industry	**A4**: Professional discipline 1. Architecture 2. Quantity surveying 3. Building surveying 5. Civil engineering 6. Mechanical engineering 7. Electrical engineering 8. Others **A7**: Position in organisation 1. Executive 2. Senior management 3. Middle management 4. Junior level personnel **A8**: Type of organisation 1. Public client 2. Private client 3. Consultant 4. Contractor **A9**: Years of working experience in the construction industry 1. less than 2 years 2. 2 - 5 years 3. 6 - 10 years 4. 11 - 15 years 5. 16 - 20 years 6. more than 20 years
B2 - B5	Professional institution's code of ethics	**A4**: Professional discipline **A9**: Years of working experience in the construction industry	
B6 - B8	Organisation's code of ethics	**A7**: Position in organisation **A9**: Years of working experience in the construction industry	
Component No. 2 **Part B2 - Standards of ethics**			
	Sub - components		
B9e and B9f	Criteria for project performance:	**A4:** Professional discipline **A9**: Years of working experience in the construction industry	
B10a - 10d	Ethical dilemma and decision making:	**A4**: Professional discipline **A9**: Years of working experience in the construction industry	
B11 - B16	The organisation	**A7**: Position in organisation **A8**: Type of organisation	
B17	The industry	**A8**: Type of organisation **A9**: Years of working experience in the construction industry	

7.4.4.2 One - way ANOVA analysis: Part B1 - Understanding the importance of ethics

This section will cover the One - way ANOVA analysis of data for Part B1: understanding the importance of ethics. The dependent variables are categorised into three sub-components as Table 7.4.13. The analysis of these sub-components is dealt with one by one.

Table 7.4.13: Part B1 - Understanding the importance of ethics

Statement No.	Sub - components
B1a - B1c	Ingredients to uphold ethics of a construction professional
B2 - B5	Understanding importance of ethics sanctioned through professional institutions' code of ethics
B6 - B8	Understanding importance of ethics sanctioned through organisations' code of ethics

7.4.4.3 Ingredients to uphold ethics

Table 7.4.14 presents the statements on ingredients to uphold ethics (dependent variables) and demography profile (independent variables).

Table 7.4.14: Ingredients to uphold ethics (dependent variables) and demography profile (independent variables)

No.	Statement	Independent variables
B1	Ingredients to uphold ethics:	A4: Professional discipline A9: Years of working experience in the construction industry
B1a	Self - regulation to maintain high ethics	
B1b	Obligation to the 'duty of care' in professional liability	
B1c	Following the code of professional ethics or conduct	

The objective of this analysis is to see if there if sufficient evidence to infer that the perceptions of respondents from the demography profiles of professional discipline (A4) and years of working experience in the construction industry (A9) differed significantly on the ingredients to uphold ethics. These two demographic profiles are relevant in this analysis for the respondents in their capacity as individuals and construction professionals.

With regards to professional discipline, the results of One Way ANOVA test show no significant difference between the ingredients to uphold ethics against professional discipline: $p > 0.05$. This indicate that respondents from all professional disciplines; whether architecture, quantity surveying, building surveying, civil engineering,

mechanical engineering, electrical engineering and others have similar perceptions on the ingredients to uphold ethics of a construction, which are: i) self - regulation to maintain high ethics (B1a), ii) obligation to the 'duty of care' in professional liability (B1b), and iii) following the code of professional ethics or conduct (B1c).

With regards to years of working experience, the results of One-Way ANOVA test from Table 7.4.15 show significant difference: $p < 0.05$ for ingredient B1a "self - regulation to maintain high ethics" to uphold ethics: $p = 0.027$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of respondents with experience of 6 - 10 years and more than 20 years ($p = 0.009$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with more than 20 years of experience (mean = 1.47) have the highest perception on "self - regulation to maintain high ethics" and those with 6 - 10 years have the lowest (mean = 1.93). This suggests that individuals with more experience are more mature in their thoughts and actions and can better manage themselves in ethics.

The results of One-Way ANOVA test from Table 7.4.15 show significant difference: $p < 0.05$ for ingredient B1b "obligation to the 'duty of care' in professional liability" to uphold ethics: $p = 0.016$. From the Tukey test analysis, the results show a slight significant difference; for the pairs of respondents with experience of less than 2 years and more than 20 years ($p = 0.058$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with more than 20 years of experience (mean = 1.55) have the highest perception on "obligation to the 'duty of care' in professional liability" and those less than 2 years have the lowest (mean = 1.96). This suggests that construction

professionals with more experience have better obligation towards their professional duties and liabilities.

The results of One-Way ANOVA test from Table 7.4.15 show significant difference: $p < 0.05$ for ingredient B1c: "following the code of professional ethics or conduct" to uphold ethics: $p = 0.006$. From the Tukey test analysis, the results show significant difference; for the pairs of respondents with experience of less than 2 years with other three categories: i) 2 - 5 years ($p = 0.029$), ii) 11 - 15 years ($p = 0.032$) and iii) more than 20 years ($p = 0.01$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with experience of more than 20 years (mean = 1.57) have the highest perception on "following the code of professional ethics or conduct*"* and those less than 2 years have the lowest (mean = 2.18). The other categories that show higher perception and significant difference than with those with experience of less than 2 years are: i) 2 - 5 years (mean = 1.74) and ii) 11 - 15 years (mean = 1.74). This suggests that construction professionals with more experience tend to abide more to code of professional ethics or conduct in order to uphold ethics than those with less experience.

Table 7.4.15: One-Way ANOVA test results: Ingredients to uphold ethics against years of working experience

ANOVA		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
B1A	Between Groups	6.837	5	1.367	2.560	**.027**
	Within Groups	172.543	323	.534		
	Total	179.380	328			
B1B	Between Groups	5.705	5	1.141	2.832	.016
	Within Groups	130.124	323	.403		
	Total	135.830	328			
B1C	Between Groups	7.001	5	1.400	3.324	**.006**
	Within Groups	136.056	323	.421		
	Total	143.058	328			

Table 7.4.15 (continued)

Multiple Comparisons: Tukey HSD

B1	**Ingredients to uphold ethics**	**(I) Years of experience**	**(J) Years of experience**	**Significance**
B1a	Self - regulation to maintain high ethics	**6 - 10 years**	less than 2 years	.651
			2 - 5 years	.640
			11 - 15 years	.795
			16 - 20 years	.370
			more than 20 years	**.009**
B1b	Obligation to the 'duty of care' in professional liability	**less than 2 years**	2 - 5 years	.950
			6 - 10 years	.739
			11 - 15 years	.198
			16 - 20 years	.191
			more than 20 years	**.058**
B1c	Following the code of professional ethics or conduct	**less than 2 years**	**2 - 5 years**	**.029**
			6 - 10 years	.056
			11 - 15 years	**.032**
			16 - 20 years	.083
			more than 20 years	**.001**

Descriptives

	Years of experience	**Mean**	**Standard deviation**
B1a	less than 2 years	1.68	.612
	2 - 5 years	1.74	.682
	6 - 10 years	**1.93**	.734
	11 - 15 years	1.77	.843
	16 - 20 years	1.61	.497
	more than 20 years	**1.47**	.799
B1b	less than 2 years	**1.96**	.637
	2 - 5 years	1.84	.598
	6 - 10 years	1.77	.645
	11 - 15 years	1.64	.641
	16 - 20 years	1.57	.504
	more than 20 years	**1.55**	.722
B1c	less than 2 years	**2.18**	.772
	2 - 5 years	**1.74**	.644
	6 - 10 years	1.77	.731
	11 - 15 years	**1.74**	.610
	16 - 20 years	1.71	.460
	more than 20 years	**1.57**	.605

7.4.4.4 Understanding the importance of ethics sanctioned through professional institutions' code of ethics

Table 7.4.16 presents the statements on understanding the importance of ethics sanctioned through professional institutions' code of ethics (dependent variables) and demography profile (independent variables).

Table 7.4.16: Understanding the importance of ethics sanctioned through professional institutions' code of ethics (dependent variables) and demography profile (independent variables)

No.	Statement	Independent variables
B2	I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions.	A4: Professional discipline A9: Years of working experience in the construction industry
B3	I understand the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions to uphold ethical standards.	
B4	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions can address and provide a working guideline for ethical problems of the professionals.	
B5	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions are effectively enforced.	

The objective of this analysis is to see if there is if sufficient evidence to infer that the perceptions of respondents from the demography profiles of professional discipline (A4) and years of working experience in the construction industry (A9) differed significantly on understanding the importance of ethics sanctioned through professional institution's code of ethics. These two demographic profiles are relevant in this analysis for the respondents in their capacity as construction professionals.

With regards to professional discipline of the respondents, the results of One Way ANOVA test show no significant difference between "understanding the importance of ethics sanctioned through professional institutions' code of ethics" against professional discipline: $p > 0.05$. This indicate that respondents from all professional disciplines; whether architecture, quantity surveying, building surveying, civil engineering, mechanical engineering, electrical engineering, and others have similar perception on "understanding the importance of ethics sanctioned through professional institutions' code of ethics". Hence, respondents from different professional disciplines have similar

perception on the "Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions" in terms of i) awareness of their existence (B2), ii) understanding its role in upholding ethical standards (B3), iii) they provide a working guideline for ethical problems of the professionals (B4), and iv) they are effectively enforced (B5).

With regards to years of working experience of the respondents, the results of One-Way ANOVA test from Table 7.4.17 show significant difference: $p < 0.05$ for statement B2: "I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions" : $p = 0.006$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of respondents with experience of more than 20 years with i) less than 2 years ($p = 0.012$) and 2 - 5 years ($p = 0.017$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with more than 20 years of experience (mean = 1.85) have the highest perception on "I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions" and have significant difference of perception with those with less than 2 years (mean = 2.32) and 2 - 5 years (mean 2.20). Hence, this suggests that construction professionals with more experience are most aware of the existence of the professional institutions' code of ethics, which is understandable considering their length of exposure in their profession.

Table 7.4.17: One-Way ANOVA test results: Understanding the importance of ethics sanctioned through professional institutions' code of ethics against years of working experience

ANOVA

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
B2	Between Groups	6.069	5	1.214	3.293	**.006**
	Within Groups	119.032	323	.369		
	Total	125.100	328			

Table 7.4.17 (continued)

Multiple Comparisons: Tukey HSD

	Understanding the importance of ethics sanctioned through professional institutions' code of ethics	**(I) Years of experience**	**(J) Years of experience**	**Significance**
B2	I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions	**more than 20 years**	less than 2 years	**.012**
			2 - 5 years	**.017**
			6 - 10 years	.207
			11 - 15 years	.750
			16 - 20 years	.776

Descriptives

	Years of experience	**Mean**	**Standard deviation**
B2	less than 2 years	**2.32**	.612
	2 - 5 years	**2.20**	.637
	6 - 10 years	2.10	.645
	11 - 15 years	2.00	.594
	16 - 20 years	2.04	.508
	more than 20 years	**1.85**	.568

7.4.4.5 Understanding the importance of ethics sanctioned through organisations' code of ethics

Table 7.4.18 presents the statements on understanding the importance of ethics sanctioned through organisations' code of ethics (dependent variables) and demography profile (independent variables).

Table 7.4.18: Understanding the importance of ethics sanctioned through organisations' code of ethics (dependent variables) and demography profile (independent variables)

No.	**Statement**	**Independent variables**
B6	I am aware of the existence of a written and formal General Guideline for Ethics, or Code of Ethics or Conduct in my organisation.	A7: Position in organisation A9: Years of working experience in the construction industry
B7	I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation.	
B8	The General Guidelines for Ethics, or Code of Ethics or Conduct published in my company are effectively enforced.	

The objective of this analysis is to see if there is sufficient evidence to infer that the perceptions of respondents from the demography profiles of position in organisation (A8) and years of working experience in the construction industry (A10) differed

significantly on understanding the importance of ethics sanctioned through organisations' code of ethics. These two demographic profiles are relevant in this analysis for the respondents in their capacity as employees of organisations.

With regards to position in the organisation of the respondents, the results of One Way ANOVA test show no significant difference between "understanding the importance of ethics sanctioned through organisations' code of ethics": $p > 0.05$. This indicates respondents from all levels of position in organisation: executive, senior management, middle management and junior level personnel have similar perception on "understanding the importance of ethics sanctioned through organisations' code of ethics". Hence, respondents from different positions in their organisations have similar perception on the "General Guideline for Ethics, or Code of Ethics or Conduct in my (their) organisation", in terms of: i) awareness of their existence (B6), ii) understanding it (B7) and, iii) they are effectively enforced (B8).

With regards to years of working experience of the respondents, the results of One-Way ANOVA test from Table 7.4.19 show significant difference: $p < 0.05$ for statement B7: "I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation" : $p = 0.043$. From the Tukey test analysis, the results show slight significant difference: $p < 0.05$, for the pairs of respondents with experience of 2 - 5 years and more than 20 years ($p = 0.059$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with more than 20 years of experience (mean = 2.06) have the highest perception on "I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation" and have the highest significant difference of perception with those from 2 - 5 years which is also the lowest (mean = 2.43). This

suggests that employees with more experience are inclined to understand their organisation's code of ethics better than those with less experience may be because they are normally more exposed to the organisational settings.

Table 7.4.19: One-Way ANOVA test results: Understanding the importance of ethics sanctioned through organisations' code of ethics against years of working experience

ANOVA		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
B7	Between Groups	5.995	5	1.199	2.324	**.043**
	Within Groups	151.182	293	.516		
	Total	157.177	298			

Multiple Comparisons: Tukey HSD

	Understanding the importance of ethics sanctioned through organisations' code of ethics	**(I) Years of experience**	**(J) Years of experience**	**Significance**
B7	I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation	**2 - 5 years**	less than 2 years	1.000
			6 - 10 years	.386
			11 - 15 years	.166
			16 - 20 years	.741
			more than 20 years	**.059**

Descriptives

	Years of experience	**Mean**	**Standard deviation**
B7	less than 2 years	2.42	.758
	2 - 5 years	**2.43**	.718
	6 - 10 years	2.20	.775
	11 - 15 years	2.14	.669
	16 - 20 years	2.19	.602
	more than 20 years	**2.06**	.727

7.4.4.6 One - way ANOVA analysis: Part B2 - Standard of ethics

This section will cover the One - way ANOVA analysis of data for Part B2: standard of ethics. The dependent variables are categorised into four sub-components as in Table 7.4.20. The analysis of these sub-components is dealt one by one.

Table 7.4.20: Part B2 - Standard of ethics

Statement No.	**Sub - components**
B9a - B9f	Criteria for project performance: The professional person
B10a - 10d	Ethical dilemma and decision making: The professional person
B11 - B16	The organisation
B17	The industry

7.4.4.7 Criteria for project performance

Table 7.4.21 presents the statements on criteria for project performance (dependent variables) and demography profile (independent variables).

Table 7.4.21: Criteria for project performance (dependent variables) and demography profile (independent variables)

No.	Statement	Independent variables
B9	Criteria for project performance:	A4: Professional discipline A9: Years of working experience in the construction industry
B9e	General public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)	
B9f	It was completed by upholding ethical principles	

The objective of this analysis is to see if there is sufficient evidence to infer that the perception of respondents from the demography profiles of professional discipline (A4) and years of working experience in the construction industry (A9) differed significantly on the criteria for project performance. The two demographic profiles are relevant in this analysis for the respondents in their capacity as construction professionals. For the objectives of the research, this analysis is on the two criteria for project performance of "general public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)" and "it was completed by upholding ethical principles".

With regards to the criteria for project performance of "general public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue) (B9e) against professional discipline of the respondents, the results of One Way ANOVA test show no significant difference: $p > 0.05$. This indicates that respondents from all professional disciplines; whether architecture, quantity surveying, building surveying, civil engineering, mechanical

engineering, electrical engineering and others have similar perception on general public satisfaction and regard it as a criterion for project performance.

With regards to the criteria for project performance of "it was completed by upholding ethical principles" (B9f) against professional discipline of the respondents, the results of One-Way ANOVA test from Table 7.4.22 show significant difference: $p < 0.05$: $p = 0.02$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of respondents from the professional discipline of mechanical engineering with quantity surveying ($p = 0.00$) and civil engineering ($p = 0.029$). From the descriptive analysis, as compared with others, respondents from the professional discipline of mechanical engineering (mean = 1.72) have the highest perception on the criteria of project performance of "it was completed by upholding ethical principles" and have significant difference of perception with those from the quantity surveying (mean = 2.41) and civil engineering (mean 2.20) professions. This suggests that mechanical engineers are more inclined than the other professions in upholding ethical principles as criteria for project performance, which is quite commendable for them.

Table 7.4.22: One-Way ANOVA test results: Criteria for project performance against professional discipline

ANOVA		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
B9f	Between Groups	12.729	6	2.121	3.643	**.002**
	Within Groups	187.515	322	.582		
	Total	200.243	328			

Multiple Comparisons: Tukey HSD

	Criteria for project performance	**(I) Professional discipline**	**(J) Professional discipline**	**Significance**
B9f	It was completed by upholding ethical principles	**Mechanical engineering**	Architecture	.086
			Quantity surveying	**.000**
			Building surveying	.846
			Civil engineering	**.029**
			Electrical engineering	.697
			Others	.260
			Electrical engineering	.697
			Others	.260

Table 7.4.22 (continued)

Descriptives

	Professional discipline	Mean	Standard deviation
B9f	Architecture	2.24	.792
	Quantity surveying	**2.41**	.755
	Building surveying	2.25	.957
	Civil engineering	**2.20**	.770
	Mechanical engineering	**1.72**	.729
	Electrical engineering	2.04	.790
	Others	2.25	.683

With regards to the criteria for project performance of "general public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue) (B9e) and "it was completed by upholding ethical principles" (B9f) against years of working experience in the construction industry, the results of One Way ANOVA test show no significant difference: $p = > 0.05$. This indicates that respondents from all range of years of working experience, starting from less than 2, to more than 20 years in the construction industry have similar perceptions on these two criterions for project performance. This result is encouraging as it shows that the respondents, irrespective of the number of experience from the least to the most, consider public satisfaction and upholding ethical principles as criterions for project performance.

7.4.4.8 Ethical dilemma and decision - making

Table 7.4.23 presents the statements on ethical dilemma and decision-making (dependent variables) and demography profile (independent variables). The objective of this analysis is to see if there is sufficient evidence to infer that the perceptions of respondents from the demography profiles of professional discipline (A4) and years of working experience in the construction industry (A9) differed significantly on the importance of parties who have interest on the project, in circumstances when the respondents face ethical dilemmas and decision - making during work (ethical issues of

right or wrong). The two demographic profiles are relevant in this analysis for the respondents in their capacity as construction professionals.

Table 7.4.23: Ethical dilemma and decision-making (dependent variables) and demography profile (independent variables)

No.	Statement	Independent variables
B10	The importance of the following parties "when faced with ethical dilemmas and decision - making during work (ethical issues of right or wrong)"	A4: Professional discipline A9: Years of working experience in the construction industry
B10a	My own interest	
B10b	The interest of company/organisation	
B10c	The interest of my client	
B10d	The interest of the general public (i.e. social obligation and accountability)	

With regards to ethical dilemma and decision - making against professional discipline, the results of One Way ANOVA test show no significant difference: $p > 0.05$. This indicates that respondents from all professional disciplines; whether architecture, quantity surveying, building surveying, civil engineering, mechanical engineering, electrical engineering and others have similar perceptions on the importance of parties who may have interest on the project, that is: i) their own interest, ii) the interest of company/organisation, iii) the interest of their client and iv) the interest of the general public (i.e. social obligation and accountability); in circumstances when the respondents face ethical dilemmas and decision - making during work (ethical issues of right or wrong). This result is assuring as it shows that the respondents, irrespective of their professional background, consider the importance of all parties who may have interest in the project in circumstances of ethical dilemmas and decision-making.

With regards to ethical dilemma and decision - making against years of working experience, the results of One Way ANOVA test show no significant difference: $p > 0.05$. This indicates that respondents from all range of years of working experience,

starting from less than 2, to more than 20 years in the construction industry have similar perceptions on the importance of parties who may have interest on the project that is: i) their own interest, ii) the interest of company/organisation, iii) the interest of their client and iv) the interest of the general public (i.e. social obligation and accountability); in circumstances when the respondents face ethical dilemmas and decision - making during work (ethical issues of right or wrong). This result is also assuring as it shows that the respondents, irrespective of the number of experience from the least to the most, consider the importance of all parties who may have interest in the project in circumstances of ethical dilemmas and decision-making.

7.4.4.9 Ethics of the organisation

Table 7.4.24 presents the statements on ethics of the organisation (dependent variables) and demography profile (independent variables).

Table 7.4.24: Ethics of the organisation (dependent variables) and demography profile (independent variables)

	Statement	**Independent variables**
B11	My company considers ethical practice as an important criterion when meeting and achieving their goals and objectives.	A7: Position in organisation A8: Type of organisation
B12	My top executives frequently refer to the importance of ethics in making this company successful.	
B13	In my company, management "walks its talks". Our culture is such that executives, model what they preach.	
B14	My company has a reputation in the market that customers can trust our promises.	
B15	My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	
B16	My company's best employees stay here because it is a good place to work.	

The objective of this analysis is to see if there if sufficient evidence to infer that the perception of respondents from the demography profiles of position in organisation (A8) and type of organisation (A9) differed significantly on the standard of ethics of organisations as in statements B11 - B16. The two demographic profiles are relevant in this analysis for the respondents in their capacities as employees in organisations.

With regards to position in organisation, the results of One-Way ANOVA test from Table 7.4.25 show significant difference: $p < 0.05$ for statement B11: "My company considers ethical practice as an important criteria when meeting and achieving their goals and objectives" $p = 0.043$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of respondents from middle management and junior level ($p = 0.042$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, junior level personnel respondents (mean = 2.20) have the lowest perception on the statement "My company considers ethical practice as an important criteria when meeting and achieving their goals and objectives", and have the most significant difference of perception with those from middle management (mean = 1.92). This suggests that employees from junior level personnel consider the standard of ethics at a lower level than the rest and, especially with middle management. This may be because of the junior personnel's less exposure to the organisation's business and perceive its practices to have lower ethics than the rest.

Table 7.4.25: One-Way ANOVA test results: Ethics of the organisation against position in organisation

ANOVA

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
B11	Between Groups	4.207	3	1.402	2.749	**.043**
	Within Groups	165.793	325	.510		
	Total	170.000	328			

Table 7.4.25 (continued)

Multiple Comparisons: Tukey HSD

	Ethics of the organisation	**(I) Position in organisation**	**(J) Position in organisation**	**Significance**
B11	My company considers ethical practice as an important criteria when meeting and achieving their goals and objectives	Middle management	Executive	1.000
			Senior management	.909
			Junior level personnel	**.042**

Descriptives

	Position in organisation	**Mean**	**Standard deviation**
B11	Executive	1.91	.801
	Senior management	1.99	.681
	Middle management	**1.92**	.686
	Junior level personnel	**2.20**	.721

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.4.26 show significant difference: $p < 0.05$ for statement B15: "My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints": $p = 0.000$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of respondents from public and i) private client ($p = 0.000$), ii) consultant ($p = 0.000$) and iii) contractor ($p = 0.000$), the other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, public clients (mean = 2.11) have the highest perception on an "ethics hotline" and have a significant difference of perception with the private clients (mean = 2.86), consultants (mean = 3.00) and contractors (mean = 2.86). This suggests that public clients have a higher standard of ethics as compared to other organisations, since they are most inclined in having an "ethics hot - line" mechanism, akin to an "ethics office", as a way for employees to voice their concerns on unethical practices within the organisations. This may be because public clients have to be more accountable to the public since all their projects are government funded; hence, an "ethics hot - line" is necessary for the public to voice their complaints on unethical activities within a public client.

Table 7.4.26: One-Way ANOVA test results: Ethics of the organisation against type of organisation

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
B15	Between Groups	45.492	3	15.164	16.040	**.000**
	Within Groups	307.261	325	.945		
	Total	352.754	328			

Multiple Comparisons: Tukey HSD

	Ethics of the organisation	(I)Type of organisation	(J) Type of organisation	Significance
B15	My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	Public client	Private client	**.000**
			Consultant	**.000**
			Contractor	**.000**

Descriptives

	Type of organisation	Mean	Standard deviation
B15	Public client	2.11	.809
	Private client	2.86	1.102
	Consultant	3.00	.899
	Contractor	2.86	1.133

7.4.4.10 Ethics of the industry

Table 7.4.27 presents the statement on ethics of the industry (dependent variables) and demography profile (independent variables).

Table 7.4.27: Ethics of the industry (dependent variables) and demography profile (independent variables)

No.	Statement	Independent variables
B17	I perceive that the overall present ethical standard of the construction industry in Malaysia is high.	A8: Type of organisation A9: Years of working experience in the construction industry

The objective of this analysis is to see if there is sufficient evidence to infer that the perception of respondents from the demography profiles of type of organisation (A9) and years of working experience in the construction industry (A10) differed significantly on the standard of ethics of the industry. The two demographic profiles are relevant in this analysis for the respondents in their capacity as employees in construction organisations and they are also construction professionals in the industry.

With regards to the standard of ethics of the industry against types of organisation, the results of One-Way ANOVA show no significant difference: $p > 0.05$ for the statement: "I perceive that, the overall present ethical standard of the construction industry in Malaysia is high". This indicates that respondents from all types of organisations: public clients, private clients, consultants and contractors have similar perceptions on the standard of ethics in the industry.

The results of the descriptive analysis from Table 7.4.28 suggest that the different types organisations are quite undecided (mean range: 3.27 - 3.64) when expressing their perception on the standard of ethics of the industry. Even though it does indicate that the consultants' perception of the standard of ethics is the lowest as compared (mean = 3.64) with others, with highest from the public clients (mean = 3.27). Further analysis of the percentage results shows that the "total disagree and strongly agree" for consultants is highest (36.1%), and the contractors is lowest (18.3%) for "I perceive that the overall present ethical standard of the construction industry in Malaysia is high". This may be because consultants are normally involved in a construction project starting from the design, tender process and supervision of the project, making them more exposed to unethical practices in a project, but, as for contractors, they may have the attitude of "this is how the industry is".

Table 7.4.28: Descriptive analysis: Ethics of the industry against type of organisation

	Type of organisation	**Mean**	**Strongly Agree**	**Agree**	**Neither agree or disagree**	**Disagree**	**Strongly disagree**
B17	Public client	**3.27**	37.9		23.5	25.7	
	Private client	3.45	19.5		19.6	19.9	
	Consultant	**3.64**	20.7		25.5	**36.1**	
	Contractor	3.29	21.8		31.4	**18.3**	

With regards to the standard of ethics of the industry against years of working experience, the results of One Way ANOVA test show no significant difference: $p > 0.05$. This indicates that respondents from all range of years of working experience in the construction industry; less than 2 years, 2 - 5 years, 6 -10 years, 11 - 15 years, 16 - 20 years and more then 20 years, have similar perceptions on the standard of ethics in the industry.

From Table 7.4.29, the results of the descriptive analysis suggest that the respondents with different years of working experience are quite undecided (mean range: 3.21 - 3.54) when expressing their perceptions on the standard of ethics of the industry, even though it does indicate that those with 11-15 years of experience have the lowest perception on the standard of ethics as compared with others (mean = 3.54), and the highest from those with more that 20 years (mean = 3.21).

Table 7.4.29: Descriptive analysis: Ethics of the industry against years of experience

	Years of experience	**Mean**	**Strongly Agree**	**Agree**	**Neither agree or disagree**	**Disagree**	**Strongly disagree**
B17	less than 2 years	3.25	9.2		11.8	7.3	
	2 - 5 years	3.48	20.7		**35.3**	**24.1**	
	6 - 10 years	3.48	19.5		19.6	22.0	
	11 - 15 years	**3.54**	19.5		13.7	23.6	
	16 - 20 years	3.39	9.2		5.9	8.9	
	more than 20 years	**3.21**	**21.8**		13.7	14.1	

From Table 7.4.29, further analysis of the percentage results shows that “strongly agree and agree” is highest for the respondents with experience of more than 20 years (21.8%); “total disagree and strongly disagree” is highest for the respondents with experience of 2 - 5 years (24.1%); with “uncertain” also highest for respondents with 2 - 5 years (35.8%). This suggests that the respondents in the industry who are still “green” in the industry consider the standard of ethics of the construction industry in Malaysia to

be low as compared with the mature ones. This could be due to less exposure and experience in the industry which sets their perception on the standard of ethics in the industry.

7.4.4.11 Summary of One - way ANOVA analysis: Part B

One - way ANOVA analysis: Part B is carried out between the components of understanding the importance of ethics, and standards of ethics against demography profiles. The above discussion detailed the significant difference or no significant difference between the dependent variables in these two components against demography profiles.

Table 7.4.30 shows the summary of the results of one - way ANOVA for Part B.

Table 7.4.30: Summary of One - way ANOVA analysis - Part B

Statement No.	Component No.	Dependent variables: Components /Statements	Independent variables	Significant difference / No significant difference
B1a - B1c; - B8	1	**PART B1: UNDERSTANDING THE IMPORTANCE OF ETHICS**		
		Sub - components		
B1a - B1c		**Ingredients to uphold ethics of a construction professional**	A4: Professional discipline	**No significant difference**
B1a		Self - regulation to maintain high ethics	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 6 - 10 years and more than 20 years
B1c		Obligation to the 'duty of care' in professional liability	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of less than 2 years and more than 20 years
B1c		Following the code of professional ethics or conduct	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of less than 2 years with: i) 2 - 5 years ii) 11 - 15 years; and iii) more than 20 years
B2 - B5		**Professional institution's code of ethics**	A4: Professional discipline	**No significant difference**
B2		I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of more than 20 years with i) less than 2 years and 2 - 5 years
B6 - B8		**Organisation's code of ethics**	A7: Position in organisation	**No significant difference**
B7		I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 2 - 5 years and more than 20 years

Table 7.4.30: Summary of One - way ANOVA analysis - Part B (continued)				
Statement No.	**Component No.**	**Dependent variables: Components /Statements**	**Independent variables**	**Significant difference / No significant difference**
	2	**PART B2: STANDARDS OF ETHICS**		
		Sub - components		
B9e and B9f		**Criteria for project performance**		
B9e		General public satisfaction affected by the project whether during or after construction	A4: Professional discipline	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
B9f		It was completed by upholding ethical principles	A4: Professional discipline	**Significant difference** Respondents from mechanical engineering professions with i) quantity surveying and ii) civil engineering
			A9: Years of working experience in the construction industry	**No significant difference**
B10a - 10d		**Ethical dilemma and decision making**	A4: Professional discipline	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
B11 - B16		**The organisation**		
B11		My company considers ethical practice as an important criteria when meeting and achieving their goals and objectives	A7: Position in organisation	**Significant difference** Respondents from middle management with junior level
B15		My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	A8: Type of organisation	**Significant difference** Respondents from public clients with i) private clients, ii) consultant and iii) contractor
B17		**The industry** I perceive that the overall present ethical standard of the construction industry in Malaysia is high	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**

7.5 Part C: Ethical issues

7.5.1 Introduction

This section covers the analysis of data and its discussion on ethical issues that occur in the construction industry in Malaysia as in Part C of the questionnaire. The objective of the analysis is to determine the perception of the respondents on the occurrence of ethical issues. The issues are grouped into five components: i) pre - contract issues, ii) construction issues, iii) post - contract issues, vi) environmental issues and v) other issues. The analysis also includes enforcement issue and effects of unethical practice to the construction industry in Malaysia.

The first analysis is the test of reliability for all five components. The second analysis is the descriptive statistics of mean scores on perceptions of respondents on the statements in the five components of ethical issues. Further analysis of the mean scores is carried out on the overall mean for each component, and, overall ranking of all the ethical issues in the components.

The third analysis is the One - way ANOVA. This analysis is to discover if respondents from different demographic profiles; from different types of organisations in the industry, and years of working experience, differ significantly from each other on the ethical issues investigation. This is important as different demographic profiles may generate different results on the occurrence of ethical issues since different types of organisations may perceive issues according to their different objectives on the outcome of projects; and years of working experience indicate their exposure on the probability and intensity of occurrence of ethical issues in the industry.

7.5.2 Test of reliability

There are 49 statements on ethical issues in Part C of the analysis. The number of statements and the results of reliability tests of each component are shown in Table 7.5.1. The Cronbach's coefficient alpha values are 0.897 (pre-contract issues); 0.960 (construction issues); 0.925 (post-contract issues); 0.936 (environmental issues); and 0.712 (other issues). This implies that the various statements reliably and consistently measure the perceptions of the respondents on the five components, ranging from "excellent" ($\alpha > .9$), "good" ($\alpha > .8$) to "acceptable" ($\alpha > .7$). As for enforcement and effects of unethical practice to the construction industry, the Cronbach's coefficient alpha values are 0.861 ($\alpha > .8$: good) and 0.794 ($\alpha > .7$: acceptable) which implies that the various statements reliably and consistently measure the perceptions of the respondents. (Refer to Table 6.3: Cronbach's coefficient alpha (α) rule of thumb).

Table 7.5.1: Cronbach's coefficient alpha (α) for Part C

Statement No.	Component No.	Components	No of statements	(α)
C1 - C15	1	Pre-contract issues	15	0.897
C16 - C41	2	Construction issues	25	0.960
C49 - C50	3	Post contract issues	2	0.925
C42 - C46	4	Environmental issues	5	0.936
C39 and C47	5	Other issues	2	0.712
Total no. of statements on ethical issues			**49**	
C48a - C48d	-	Enforcement	4	0.861
C51a - C51e	-	Effects of unethical practice to the construction industry	5	0.794
Total no. of statements			**58**	

7.5.3 Descriptive analysis

The following analysis will present the perceptions of the respondents on the statements in the four components on ethical issues. As described earlier in Chapter 6, all

statements use the Likert 5 - point scale; 1- strongly agree, 2 - agree, 3 - neither agree or disagree, 4 - disagree and 5 - strongly disagree.

7.5.3.1 Pre-contract issues

Pre-contract issues are divided into four sub-components as in Table 7.5.2. The analysis of these sub-components are dealt firstly one by one, and followed by a summary analysis of the pre-contract issues component.

Table 7.5.2: Pre-contract issues

Statement No.	Sub-components
C1 - C5	Tendering practice
C6 - C7	Confidentiality
C8 - C9	Pricing of tender sum
C10 - C15	Tender evaluation

7.5.3.2 Tendering practice

Table 7.5.3 presents the means, median and standard deviations (SD) scores on tendering practice issues, by each statement arranged in ascending order of size, which is the respondents declining agreeability; and summary on all statements.

Table 7.5.3: Mean score on tendering practice issues

No.	Statement	Rank	Mean	Median	S.D
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	1	2.60	2.00	1.086
C4	Lobbying to secure contract	2	2.61	2.00	1.232
C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	3	2.82	3.00	1.169
C5	Commissions to secure contract	4	2.85	3.00	1.210
C3	"Ali Baba" tendering practice	5	2.88	3.00	1.288
	All statements		2.75		

By individual statements, the respondents agree with all the tendering practice issues. "Tenderers overstating their qualifications, experience and capabilities to secure contract" (C2) is the most agreeable (mean = 2.60), and "Ali Baba" tendering practice

(C3) is the least agreeable (mean = 2.88). An elusive approach to investigate issues on inducements, bribery and corruption is also agreeable: "lobbying to secure contract" (C4: mean = 2.61) and "commissions to secure contract" (C5, mean = 2.85). This suggests that inducements, bribery and corruption do occur when parties desire to secure a contract. A court case involving an inducement to secure contract was recently reported in the media (The Star, 2012, p. 10 Nation). In this case, the husband of a former senior officer in a development project south of Malaysia was found guilty of soliciting and accepting more than RM1.6million from a contractor as an inducement to secure him a contract to build a boarding school as part of the development project.

Besides this, the issue of "tendering at a low price (which does not reflect the true project cost) (mean = 2.82) in order to secure contract" (C1) is also agreeable. Tendering a low price may indicate that the tenderer's main purpose is only to secure a contract, but he may lack technical and financial capability necessary for the project. This may lead to inferior quality product and workmanship which will ultimately affect the completed project.

Considering all statements together, the mean score of 2.75 implies that on average, the respondents agree that ethical issues on tendering practice occur in the industry.

7.5.3.3 C**onfidentiality**

Table 7.5.4 presents the means, median and standard deviations (SD) scores on confidentiality issues.

Table 7.5.4: Mean score on confidentiality issues

No.	Statement	Rank	Mean	Median	S.D
C6	Tenderers' names and prices not confidential to other tenderers	1	3.24	3.00	1.156
C7	Tender estimate not confidential to tenderers	2	3.33	3.00	1.208
	All statements		3.28		

By individual statements, the respondents are undecided with the confidentiality issues. The mean scores of the issues of "tenderers' names and prices not confidential to other tenderers" (C6) and "tender estimate not confidential to tenderers" (C7) are 3.24 and 3.33 respectively. There could be explanations for this indecisiveness. It may suggest that; firstly, the respondents perceive that these issues do exist, but, they have not experienced it themselves, or secondly, it does exist, but, they may not want to reveal it. Considering both statements together, the mean score of 3.28 implies that on average, the respondents are undecided whether ethical issues on confidentiality occur in the industry. Nevertheless, confidentiality as to the names and tender prices of the tenderers, and especially tender estimate, is crucial for a fair tendering and selection process amongst the bidders for a project.

A recent media report highlighted a court case concerning information leak regarding the consultant's estimate of a prestigious project in the south Peninsula Malaysia which was to be tendered out (The Star, 2011b, p. 2 Nation). A former senior president of the client's company leaked this information to a bidder informing him to place a bid between a certain range within the consultant's estimate and the bidder finally won the project. The officer was fined RM20,000 by the High Court under the Companies Act 1965, for abusing his position when he leaked information about the tender estimate of the construction project This case showed that ethical issues on confidentiality of tender estimate do occur, even though the questionnaire survey revealed different results.

7.5.3.4 Pricing of tender sum

Table 7.5.5 presents the means, median and standard deviations (SD) scores on pricing of tender sum issues.

Table 7.5.5: Mean score on pricing of tender sum issues

	Statement	Rank	Mean	Median	S.D
C9	Frequent front-loading of tender sum - high cost in initial construction works, e.g. earthwork	1	2.76	3.00	0.859
C8	Frequent front-loading of tender sum - high cost in preliminaries.	2	2.85	3.00	0.934
	All statements		2.80		

By individual statements, the respondents agree with both the pricing of tender sum issues. Frequent front-loading of tender sum in "high cost in initial construction works, e.g. earthwork" (C9) is more agreeable (mean = 2.76) than the issue of "high cost in preliminaries" (C8 - mean = 2.85). This suggests that tenderers tend to front-load their tender sum as an approach to obtain the initial fund for the project, which may not be proportionate and realistic as compared with the other work sections. Considering both statements together, the mean score of 2.80 implies that on average, the respondents agree that ethical issues on frequent front-loading of tender sum occur in the industry.

7.5.3.5 Tender evaluation

Table 7.5.6 presents the means, median and standard deviations (SD) scores on tender evaluation issues. By individual statements, the respondents agree with the tender evaluation issues of insider trading (C15); awarding contract based on the company's (C12) and political interest (C11) and lowest tender price (C10). "Company interest in contract award" is the most agreeable (mean = 2.80), and "insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (C15) is the least agreeable (mean = 2.98). Among the agreeable issues above, it is appalling that there exists political interest in contract awards, which suggests that there

may be unfairness among other eligible and suitable tenderers in contract awards. Another issue is the "lowest tender syndrome in contract award", which may result in unsatisfactory project performance, as also discussed in the issue of "tendering at a low price" in section 7.5.3.2 above.

Table 7.5.6: Mean score on tender evaluation issues

No.	Statement	Rank	Mean	Median	S.D
C12	Company interest in contract award	1	2.80	3.00	1.089
C11	Political interest in contract award	2	2.83	3.00	1.326
C10	Contract awarded based on lowest tender price.	3	2.87	3.00	1.155
C15	Insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price).	4	2.98	3.00	0.992
C14	Community interest (e.g. neighbours and public) in contract award.	5	3.05	3.00	1.002
C13	Personal interest in contract award.	6	3.19	3.00	1.125
	All statements		2.95		

With regards to other tender evaluation issues, the results show that by individual statements, the respondents are undecided about awarding contracts based on the community interest (e.g. neighbours and public) (C14, mean = 3.05) and personal interest (C13, mean = 3.19). Nevertheless, it is optimistic especially on the issue of personal interest in contract awards, where the results do not indicate that respondents agree to this. As participants in the industry, they must uphold their professional ethics by not having any interest in contract awards. Instead they should be accountable to their clients and customers.

Considering all statements together, the mean score of 2.95 implies that on average, the respondents agree that ethical issues on tender evaluation occur in the industry.

7.5.3.6 Summary: Pre-contract issues

Table 7.5.7 presents the means, median and standard deviations (SD) scores on all the statements in the sub-components in pre-contract issues, arranged in ascending order of size, which is the respondents' declining agreeability; and summary of all statements in the component of pre-contract issues.

Table 7.5.7: Summary: Mean score on pre-contract issues

No.	Statement	Rank	Mean
	1. Pre-contract issues: Sub-components		
C1 - C5	Tendering practice	1	2.75
C8 - C9	Tender sum	2	2.80
C10 - C15	Evaluation of tender	3	2.95
C6 - C7	Confidentiality	4	3.28
	All statements		2.91

By all the statements on four sub-components, the respondents agree with all the ethical issues. The results show that the respondents agree the most on the issues under the sub-component "tendering practice" (mean = 2.75); followed by "tender sum" (mean = 2.80) and the least agreeable on evaluation of tender (mean = 2.95) Nevertheless, it can be concluded that there appears to be not much variation in respondents' perceptions between the various sub-components ((mean range = 2.75 - 2.95). Hence, all these three sub-components of pre-contact issues are ethical issues that occur in the industry. The results also show that the respondents are undecided on the sub-component of "confidentiality" as an ethical issue that occurs in the industry. This has been further discussed in section 7.5.3.3. In conclusion, considering all statements in all sub-components together, the mean score of 2.91 implies that on average, the respondents agree that ethical issues occur during the pre-contract stage of construction projects.

7.5.3.7 Construction issues

The second component of construction issues is divided into six sub-components as in Table 7.5.8. The analysis of these sub-components is dealt firstly one by one, and followed by a summary analysis of the construction issues component.

Table 7.5.8: Construction issues

Statement No.	Sub-components
C16 - C23	Site safety
C24 - C27	Quality of work
C28 - C29	Technical competency
C30 - C32	Payment
C33 - C38	Claims for work done
C40 - C41	Workers

7.5.3.8 Site safety

Table 7.5.9 presents the means, median and standard deviations (SD) scores on site safety issues.

Table 7.5.9: Mean score on site safety issues

No.	Statement	Rank	Mean	Median	S.D
C23	Lack of safety officer	1	2.73	2.00	1.183
C17	Inadequate protection from debris and hazardous material	2	2.84	2.00	1.197
C18	Improper location and storage of material	3	2.87	3.00	1.163
C19	Improper installation and usage of temporary works (e.g. scaffolding)	4	2.94	3.00	1.201
C22	Unqualified safety officer	5	2.95	3.00	1.196
C16	Disregard for safety during construction and/or demolition works	6	3.00	3.00	1.215
C20	Inadequate perimeter hoarding at site	7	3.02	3.00	1.103
C21	Improper installation and usage of construction machinery	8	3.06	3.00	1.128
	All statements		**2.93**		

By individual statements, the respondents agree with the site safety issues of: lack of safety officer (C23), inadequate protection from debris and hazardous material (C17), improper location and storage of material (C18), improper installation and usage of temporary works (e.g. scaffolding) (C19) and unqualified safety officer (C22). “Lack of

safety officer" is the most agreeable (mean = 2.73) and "unqualified safety officer is the least agreeable (mean = 2.98). Essentially, the results show the respondents' agreement on two main ethical issues on site safety that occur in the industry; namely, safety officer (C23 ad C22) and material handling at site (C17 and C18). With regards to other site safety issues, the results show that by individual statements, the respondents are undecided about "disregard for safety during construction and/or demolition works" (C16, mean = 3.00), "inadequate perimeter hoarding at site" (C20, mean = 3.02) and "improper installation and usage of construction machinery (C21, mean = 3.06)". Since all these three issues are quite common at the site, it could be that the respondents felt that it is normal and accepted practice; hence, they are undecided whether they are ethical issues or not.

Considering all statements together, the mean score of 2.93 implies that on average, the respondents agree that ethical issues on site safety occur in the industry.

7.5.3.9 Quality of work

Table 7.5.10 presents the means, median and standard deviations (SD) scores on quality of work issues.

Table 7.5.10: Mean score on quality of work issues

No.	Statement	Rank	Mean	Median	S.D
C24	Poor quality of work due to low contract amount	1	2.44	2.00	1.119
C25	Non compliance to specification - poor quality of material in general	2	2.64	2.00	1.105
C26	Poor workmanship in general	3	2.65	2.00	1.043
C27	Cutting corners because of time pressures	4	2.66	2.00	1.126
	All statements		2.60		

By individual statements, the respondents agree with all the quality of work issues. "Poor quality of work due to low contract amount" is the most agreeable (mean = 2. 44). This may be a consequent to the previous results on the pre-contract ethical issues;

that is, “tendering at a low price in order to secure contract” (C1) and “contract awarded based on lowest tender price” (C10). A low contract sum may affect project performance in various ways, and sacrificing quality of work is one of them. The respondents also agreed on the issues of “non compliance to specification due to poor quality of material” (C25) and “poor workmanship in general” (C26), with “cutting corners because of time pressures” the least agreeable (mean = 2.66). Considering all statements together, the mean score of 2.60 implies that on average, the respondents agree that ethical issues on quality of work occur in the industry.

7.5.3.10 Technical competency

Table 7.5.11 presents the means, median and standard deviations (SD) scores on technical competency issues.

Table 7.5.11: Mean score on technical competency issues

No.	Statement	Rank	Mean	Median	S.D
C29	Not competent to handle the job	1	2.80	3.00	0.984
C28	Inadequate construction techniques	2	2.82	3.00	0.992
	All statements		2.81		

By individual statements, the respondents agree with both the technical competency issues of “not competent to handle the job” (mean = 2.80) and “inadequate construction techniques” (mean = 2.82). Considering both statements together, the mean score of 2.81 implies that on average, the respondents agree that ethical issues on technical competency occur in the industry. This suggests that the basic criterion of technical competency for construction projects is not to an acceptable standard. Therefore, alongside ethics training, the education curriculum at the undergraduate level and on the job training should also focus on technical competency.

7.5.3.11 Payment

Table 7.5.12 presents the means, median and standard deviations (SD) scores on payment issues.

Table 7.5.12: Mean score on payment issues

No.	Statement	Rank	Mean	Median	S.D
C32	"Pay when paid" (back to back payment) affecting sub-contractors`	1	2.36	2.00	1.039
C31	Delayed payment to consultant and/or contractor	2	2.61	2.00	1.102
C30	Non-payment to consultant and/or contractor	3	2.95	3.00	1.139
	All statements		2.64		

By individual statements, the respondents agree with all the payment issues. "Pay when paid" (back to back payment) affecting sub-contractors" is the most agreeable (mean = 2.36). This is quite expected as "pay when paid" has constantly been an issue for the subcontractors; when they are not paid by the main contractors, even when the latter has been paid by the clients for the work done by the former. The respondents also agreed on the issue of "delayed payment to consultant and/or contractor" (C31), with "non-payment to consultant and/or contractor" the least agreeable (mean = 2.95). Considering all statements together, the mean score of 2.64 implies that on average, the respondents agree that ethical issues on payment occur in the industry.

7.5.3.12 Claims for work done

Table 7.5.13 presents the means, median and standard deviations (SD) scores on issues on claims on work done. By individual statements, the respondents agree with all the claims for work done issues. The majority of the issues relate to money claims by the contractor; that is, progress claims, variation works, loss and expense and extension of time claims (which will ultimately involve money), with the exception of, "abandoning work due to poor project management and cost control" which also relates to money matters. Issues in claims for variation are divided into two: i) "inflated claims for

variation works due to low contract sum" (C37), and ii) "unreasonable costs for variation works".

Table 7.5.13: Mean score on issues on claims for work done

No.	Statement	Rank	Mean	Median	S.D
C33	Inflating completed work percentages in progress claims	1	2.60	2.00	0.919
C38	Abandoning work due to poor project management and cost control	2	2.63	2.00	1.026
C37	Inflated claims for variation works due to low contract sum	3	2.66	2.00	1.033
C36	Inflated claims for loss and expense and damages	4	2.73	3.00	0.995
C34	Unreasonable costs for variation works	5	2.74	2.00	1.034
C35	Unreasonable claims for extension of time	6	2.75	2.00	1.055
	All statements		2.69		

"Inflating completed work percentages in progress claims" is the most agreeable issue in claims on work done (mean = 2.60). Contractors normally tend to inflate their progress claims as progress payments are their monthly income. This is to provide for their borrowing finance, workers, materials, rental of equipment, other operating costs and not forgetting their profit margin. On the other hand, the least agreeable issue is "unreasonable claims for extension of time" (mean = 2.75). Considering all statements together, the mean score of 2.69 implies that on average, the respondents agree that ethical issues on claims for work done occur in the industry.

7.5.3.13 Issues of workers

Table 7.5.14 presents the means, median and standard deviations (SD) scores on issues of workers.

Table 7.5.14: Mean score on issues of workers

No.	Statement	Rank	Mean	Median	S.D
C41	The ethics of workers have a negative influence on the overall ethical standard	1	2.48	2.00	0.994
C40	Employing illegal workers	2	2.70	2.00	1.127
	All statements		2.59		

By individual statements, the respondents agree with both the issues of workers. “The ethics of workers have a negative influence on the overall ethical standard” is more agreeable (mean = 2.48) than the issue of “employing illegal workers” (mean = 2.70). The results suggest that workers can also contribute to a lower overall ethical of the industry. Besides that, it also confirms the occurrence of employment of illegal workers in the industry. Considering both statements together, the mean score of 2.59 implies that, on average the respondents agree that ethical issues of workers occur in the industry.

7.5.3.14 Summary: Construction issues

Table 7.5.15 presents the means, median and standard deviations (SD) scores on all the statements in the sub-components in construction issues, arranged in ascending order of size, which is the respondents’ declining agreeability; and summary of all statements in the component of construction issues.

Table 7.5.15: Summary: mean score on construction issues

No.	Statement	Rank	Mean
	2. Construction issues: Sub-components		
C40 - C41	Workers	1	2.59
C24 - C27	Quality of work	2	2.60
C30 - C32	Payment	3	2.64
C33 - C38	Claims for work done	4	2.69
C28 - C29	Technical competency	5	2.81
C16 - C23	Site safety	6	2.93
	All statements		2.75

By all the statements in all six sub-components of construction issues, the respondents agree and acknowledge that these ethical issues occur in the industry. The results show that respondents agree the most on the issues under the sub-component “issues of workers (mean = 2.59); followed by “quality of work (mean = 2.60), payment (mean = 2.64), claims for work done (mean = 2.69), technical competency (mean = 2.81) and the least agreeable, site safety (mean = 2.93). Nevertheless, it can be concluded that there

appears to be not much variation in respondents' perceptions between the various sub-components (mean range = 2.59 - 2.93). In conclusion, considering all statements in all sub-components together, the mean score of 2.75 implies that on average, the respondents agree that ethical issues occur during the construction stage of projects.

7.5.3.15 Post - contract issues

Table 7.5.16 presents the means, median and standard deviations (SD) scores on the third component of post - contract stage of defective works issues.

Table 7.5.16: Mean score on post - contract issues

No.	Statement	Rank	Mean	Median	S.D
C50	Poor workmanship in general	1	2.41	2.00	0.943
C49	Non compliance to specification - poor quality of material in general	2	2.48	2.00	0.947
	All statements		2.44		

By individual statements, the respondents agree with both the issues of defective works. "Poor workmanship in general" is more agreeable (mean = 2.41) than the issue of "non compliance to specification - poor quality of material in general" (mean = 2.48), even though the difference in perception on both issues is quite minimal. Considering both statements together, the mean score of 2.44 implies that on average, the respondents agree that ethical issues on post - contract work on defective works occur in the industry. The results show that defective works which include poor workmanship and poor quality of material is quite common in the industry. This could be a consequent to the previous results, on the occurrence of ethical issues in quality of work during construction stage; namely, "non compliance to specification due to poor quality of material" (C25) and "poor workmanship in general (C26) as discussed in 7.5.3.9.

7.5.3.16 Environmental issues

Table 7.5.17 presents the means, median and standard deviations (SD) scores on the fourth component of issues: the environmental issues.

Table 7.5.17: Mean score on environmental issues

No.	Statement	Rank	Mean	Median	S.D
C43	Lack of proper protection against soil erosion	1	2.55	2.00	1.008
C46	Dumping of building debris illegally	2	2.63	2.00	1.167
C44	Unnecessary clearing of trees or shrubs	3	2.67	2.00	1.030
C45	Unnecessary cutting of ground earth	4	2.70	2.00	1.060
C42	Contamination of soil (e.g., due to spread of harmful substances during construction)	5	2.76	3.00	0.995
	All statements		2.66		

By individual statements, the respondents agree with all the environmental issues. The issues are diverse and include soil erosion, dumping of building debris illegally, unnecessary clearing of trees or shrubs, unnecessary cutting of ground earth and contamination of soil. “Lack of proper protection against soil erosion” is the most agreeable issue (mean = 2.55) and “contamination of soil (e.g., due to spread of harmful substances during construction)” the least agreeable issue (mean = 2.76). Considering all statements together, the mean score of 2.66 implies that on average, the respondents agree that ethical issues in environment occur in the industry. The results also show that construction projects can affect the environment in many different ways as the industry, and, unlike other industries can directly change the environment.

7.5.3.17 Other issues

Table 7.5.18 presents the means, median and standard deviations (SD) scores on other issues. The fifth component of ethical issues is categorised as other issues which include i) harassment issue, and ii) respect for others. Discussion of analysis of these components is dealt with together in this section.

Table 7.5.18: Mean score on other issues

	Statement	Rank	Mean	Median	S.D
	Harassment issue				
C39	Situations where a party is made responsible for another party's error or negligence	1	2.77	3.00	0.969
	Respect for others				
C47	Disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works	2	2.87	3.00	1.054
	All statements		2.82		

By individual statements, the respondents agree with both issues. The "harassment issue" is more agreeable (mean = 2.77) than the issue of "respect for others" (mean = 2.87). Considering both statements together, the mean score of 2.82 implies that on average, the respondents agree that other ethical issues relating to a project occur in the industry. The issue of "respect for others" is "disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works" (C47), was narrated by Respondent 9 from the pilot interview, a senior manager with Construction Industry Development Board (CIDB) (see Table 5.8, Chapter 5), where, the villagers in a remote village in Sarawak, East Malaysia experienced this issue regarding a construction project that affected their heritage area. With regards to the "harassment issues", these situations may occur during the stages of pre-contract, construction or post contract of a project. For example, when a client makes change requirements on his project during the construction stage, the consultants may need to produce new drawings and specifications; hence, affecting the contractor's work progress and management at site. As a consequence, the parties involved may "harass" each other in "situations where a party is made responsible for another party's error or negligence" (C39), in order to complete the project.

7.5.3.18 Summary: Components of ethical issues

Table 7.5.19 presents the mean scores for all the components in ethical issues, arranged in ascending order of size, which is the respondents' declining agreeability.

Table 7.5.19: Summary mean score: Components of ethical issues

Statements	Component No.	Components	Rank	Mean
C49 - C50	3	Post contract	1	2.44
C42 - C46	4	Environmental issues	2	2.66
C16 - C41	2	Construction	3	2.75
C39, C47	5	Other issues	4	2.82
C1 - C15	1	Pre-contract	5	2.91

Considering each component of pre-contract, construction, post contract, environmental and other issues, the respondents agree that they are ethical issues that occur in the industry (mean range = 2.44 - 2.91). Post contract issues are most agreeable (mean = 2.44), followed by environmental issues (mean = 2.66), construction (mean = 2.75), other issues (mean = 2.82) and the least agreeable, pre-contract issues (mean = 2.91).

The results indicate that post contract issues (rank 1) on defective works, which is poor workmanship and poor quality of material are the most occurring ethical issues in the industry. On the other hand, pre-contract issues (rank 5) which include tendering practice, confidentiality, front-loading of tender sum and tender evaluation are the least occurring ethical issues in the industry. From the researcher's observation, the results suggest that issues that can be seen by the "naked eye"; for example, defective works during post - contract issues are quite easily identified by the respondents, than, for example, "political interest in contract award" (C11) in tender evaluation; or "commissions or compensation to secure contract" (C5) in tendering practice during the pre-contract stage which are quite indistinct.

7.5.3.19 Overall ranking of ethical issues

Table 7.5.20 in Appendix 3 presents the overall ranking and mean scores on all the 49 ethical issues investigated. It also shows their categorisation according to the components and sub-components in the different stages of a project. The results show that 42 ethical issues occur in the industry, with the remaining seven issues having a mean range of 3.00 to 3.33 (neither agree nor disagree). Table 7.5.21 presents the five most occurring ethical issues.

Table 7.5.21: Five most occurring ethical issues

The means are arranged in ascending order of size; which is the respondents' declining agreeability.					
Component/ sub-component	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation (S.D.)**
Construction - payment	C32	"Pay when paid" (back to back payment) affecting sub-contractors	1	2.36	1.039
Post contract - defective works	C50	Poor workmanship in general	2	2.41	0.943
Construction - quality of work	C24	Poor quality of work due to low contract amount	3	2.44	1.119
Post contract - defective works	C49	Non compliance to specification- poor quality of material in general	4	2.48	0.947
Construction - workers	C41	The ethics of workers have a negative influence on the overall ethical standard	5	2.48	0.994

From Table 7.5.21, on the five most occurring ethical issues, the results show that "pay when paid" (back to back payment) affecting sub-contractors" during construction stage is the most occurring ethical issue (rank 1, mean = 2.36); followed by "poor workmanship in general" of defective works during post contract stage (rank 2, mean = 2.41); "poor quality of work due to low contract amount" during construction stage (rank 3, mean = 2.44); "non compliance to specification - poor quality of material in general" during post contract stage (rank 4, mean = 2.48, S.D = 0.947); and "the ethics of workers have a negative influence on the overall ethical standard" (rank 5, mean = 2.48, S.D = 0.994). The results show that quality issues are most frequent occurring

(ranked 2, 3 and 4), which suggest that quality issues are serious. It also implies that it is not considered as an important criterion in the completion of projects.

The results also show that ethical issues with regards to payment to sub-contractors are the most frequent. It is appropriate that the government has initiated the Construction Industry Payment and Adjudication Act (CIPAA) which is still in the process of becoming law. It is aimed at guaranteeing the security of payment and protects the rights of not only the sub-contractors, but includes suppliers and other stakeholders, where any dispute over delayed and non-payment of fees or for work done can be resolved through adjudication.

Table 7.5.22 presents the five least occurring ethical issues.

Table 7.5.22: Five least occurring ethical issues

The means are arranged in descending order of size; which is the respondents' increasing agreeability.					
Component/ sub-component	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation (S.D.)**
Pre-contract - tender evaluation	C15	Insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price)	42	2.98	0.992
Construction - site safety	C22	Unqualified safety officer	41	2.95	1.196
Construction - payment	C30	Non-payment to consultant and/or contractor	40	2.95	1.139
Construction - site safety	C19	Improper installation and usage of temporary works (e.g. scaffolding)	39	2.94	1.201
Pre-contract - tendering practice	C3	"Ali Baba" tendering practice	38	2.88	1.288

From Table 7.5.22, on the five least occurring ethical issues, the results show that "insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways*" during pre-contract is the least occurring ethical

issue (rank 42: mean =2.98). “Insider trading” is confidential only to the insider;, hence, as the results suggest, this ethical issue is not known or widespread to other participants in the project. “Site safety issues of “unqualified safety officer” during construction stage (ranked 41: mean = 2.95, S.D. = 1.196), “improper installation and usage of temporary works (e.g. scaffolding) during construction stage” (rank 39: mean = 2.94) are also among the five least occurring issue; an indication that safety issues may be given more concern at construction sites.

Other least occurring ethical issue is “non-payment to consultant and/or contractor” during construction stage (rank 40: mean = 2.95, S.D. = 1.139). This result suggests that payments to these two parties are less problematic than payment to sub-contractors as we have seen before. This may be because payments are normally directly made to them by the clients as compared with the sub-contractors. The issue of “Ali Baba” tendering practice during pre-contract stage is ranked 38 (mean = 2.88). As this result suggests, the practice of “borrowing names” in order to secure a contract occurs less which is encouraging, as this practice does not give justice to the clients and to other bidders as well.

7.5.3.20 Enforcement issue

Table 7.5.23 presents the means, median and standard deviations (SD) scores on the enforcement issue of participants in the industry, arranged in ascending order of size, which is the respondents’ declining agreeability. By individual statements, the respondents agree that all parties, which are: the government, industry associations, professional institutions and their own organisations lack effective reporting procedures and enforcement for unethical practices. However, the most agreeable is on the

Government (mean = 2.46) and the least agreeable is on the own organisation (mean = 2.67).

Table 7.5.23: Mean score on enforcement issue

No.	Statement	Rank	Mean	Median	S.D
C48	The following parties lack effective reporting procedures and enforcement for unethical practices:				
C48d	Government	1	2.46	2.00	0.910
C48c	Industry associations (e.g. Contractor's Association)	2	2.48	2.00	0.815
C48b	Professional institutions	3	2.60	3.00	0.846
C48a	Own organisation	4	2.67	3.00	0.895
	All statements		2.55		

Considering all statements together, the mean score of 2.55 implies that on average, the respondents agree that there exist enforcement issues in the industry with regards to the lack of effective reporting procedures and enforcement for unethical practices by the relevant parties. The results also show that the government, as the legislative body and principal in the enforcement issue should play a more pro-active role to overcome or lessen it. Nevertheless, other parties should also play a role; in particular, industry associations, e.g., the association for contractors - Master Builders Association Malaysia (MBAM), and professional institutions; e.g., Board of Quantity Surveyors Malaysia, where effective reporting procedures and enforcement for unethical practices are also lacking, and should be improved for their respective members.

7.5.3.21 Effects of unethical practice in the construction industry

Table 7.5.24 presents the means, median and standard deviations (SD) scores on effects of unethical practice in the construction industry, arranged in ascending order of size, which is the respondents' declining agreeability. By individual statements, the respondents agree with all the effects of unethical practice in the industry. However, the most agreeable effect is that "they give the industry a bad image" (mean = 1.95) and the least agreeable is the effect it has on the "interest of young generation into industry

(mean = 2.40). Considering all statements together, the mean score of 2.15 implies that on average, the respondents agree that unethical practice in the industry is affecting everyone concerned. The effect is broad, from "giving the industry a bad image"; "the cost of getting our projects built"; "trust between project participants - which affects business"; "the long term performance of unethical party". Finally, a wake-up call is necessary for educationists, professional institutions, the industry and government as unethical practice is also affecting the "interest of young generation into industry".

Table 7.5.24: Mean score on effects of unethical practice in the construction industry

No.	Statement	Rank	Mean	Median	S.D
C51	The effects of unethical practice are:				
C51e	They give the industry a bad image	1	1.95	2.00	0.767
C51a	The cost of getting our projects built	2	2.07	2.00	0.703
C51b	Trust between project participants - which affects business	3	2.15	2.00	0.685
C51c	The long term performance of unethical party	4	2.18	2.00	0.767
C51d	Interest of young generation into industry	5	2.40	2.00	0.847
	All statements		2.15		

7.5.4 One - way ANOVA analysis

7.5.4.1 Introduction

This section will cover the One - way ANOVA analysis for Part C of the questionnaire on the ethical issues that occur in the construction industry in Malaysia. The objective of the analysis is to investigate if there is sufficient evidence to infer that respondents from two demography profiles differed significantly from each other on the five components of ethical issues. Further mean scores were analysed for the demography profiles, to determine their different perceptions on ethical issues which are significantly different. The analysis also includes enforcement issue and effects of unethical practice to the construction industry in Malaysia.

One - way ANOVA analysis is conducted between the five components of ethical issues, which are pre-contract, construction, post-contract, environmental and other issues; and two demography profiles of the respondents: type of organisation and years of working experience in the industry. As for type of organisation, this demography profile is relevant, as for example, clients and contractors may have significant difference in perceptions on issues in tendering practice or late payment. As for years of working experience, significant difference in perceptions on ethical issues may arise due to the respondents' duration of exposure to the industry, and likelihood of the occurrence of certain issues during his working years.

One-way ANOVA analysis is conducted between ethical issues (dependent variables) and demography profiles (independent variables) as in Table 7.5.25. For the purposes of discussion of analysis, only the results of the One Way ANOVA test that has a significant difference: p value < 0.05 (George and Maller, 2003) are described further.

Table 7.5.25: Dependent and independent variables

Statement No.	**Component No.**	**Dependent variables: Components**	**Independent variables**	**Categories for independent variables**
C1 - C15	1	Pre-contract issues	**A8**: Type of organisation **A9**: Years of working experience in the construction industry	**A8**: Type of organisation 1. Public client 2. Private client 3. Consultant 4. Contractor **A9**: Years of working experience in the construction industry 1. less than 2 years 2. 2 - 5 years 3. 6 - 10 years 4. 11 - 15 years 5. 16 - 20 years 6. more than 20 years
C16 - C41	2	Construction issues		
C49 - C50	3	Post contract issues		
C42 - C46	4	Environmental issues		
C39 & C47	5	Other issues		
C48a - 48d	-	Enforcement issue		
C51a - C51e	-	Effects of unethical practice		

7.5.4.2 Pre - contract issues

Pre-contract issues are divided into four sub-components as in Table 7.5.26. The analysis of these sub-components is dealt one by one.

Table 7.5.26: Pre-contract issues

Statement No.	Sub-components
C1 - C5	Tendering practice
C6 - C7	Confidentiality
C8 - C9	Tender sum
C10 - C15	Tender evaluation

7.5.4.3 Tendering practice

Table 7.5.27 presents the tendering practice issues.

Table 7.5.27: Tendering practice issues

No.	Statements
C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract
C3	"Ali Baba" tendering practice
C4	Lobbying to secure contract
C5	Commissions to secure contract

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.5.28 show significant difference: $p < 0.05$ for issue C1: "tendering at a low price (which does not reflect the true project cost) in order to secure contract": $p = 0.025$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of private client and contractor ($p = 0.019$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, private clients (mean = 2.45) have a higher perception on the issue "tendering at a low price (which does not reflect the true project cost) in order to secure contract" than those from the contractor organisations (mean = 3.03).

The results of One-Way ANOVA test from Table 7.5.28 show significant difference: $p < 0.05$ for issue C2: "tenderers overstating their qualifications, experience and capabilities to secure contract": $p = 0.032$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of private client and contractor ($p = 0.023$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, private clients (mean = 2.35) have a higher perception on the issue "tendering at a low price (which does not reflect the true project cost) in order to secure contract" " than those from the contractor organisations (mean = 2.89).

The results of One-Way ANOVA test from Table 7.5.28 show significant difference: $p < 0.05$ for issue C3: "Ali Baba tendering practice": $p = 0.023$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of private client and contractor ($p = 0.016$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, private clients (mean = 2.60) have a higher perception on the issue "Ali Baba tendering practice" than those from the contractor organisations (mean = 3.26).

It is summarised that compared with other organisations, private clients have the highest level of perception than those from the contractor organisations for the three ethical issues discussed above. This suggests that these issues are experienced the most by private clients; and, as for the contractors it is expected that their level of perception is the lowest, as these issues concern their tendering practice.

The results of One Way ANOVA test show no significant difference between the other tendering practice issues; C4: "lobbying to secure contract" and C5: "commissions or compensation to secure contract" against type of organisation: $p > 0.05$. This shows that

respondents from all types of organisations; whether public clients, private clients, consultant and contractors have similar perceptions on these ethical issues.

Table 7.5.28: One-Way ANOVA test results: Tendering practice issues against type of organisation

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
C1	Between Groups	12.729	3	4.243	3.165	**0.025**
	Within Groups	435.691	325	1.341		
	Total	448.419	328			
C2	Between Groups	10.325	3	3.442	2.969	**0.032**
	Within Groups	376.715	325	1.159		
	Total	387.040	328			
C3	Between Groups	15.686	3	5.229	3.214	**0.023**
	Within Groups	528.691	325	1.627		
	Total	544.377	328			

Multiple Comparisons: Tukey HSD

	Tendering practice issues	(I) Type of Organisation	(J) Type of Organisation	Significance
C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	**Private client**	Public client	0.080
			Consultant	0.128
			Contractor	**0.019**
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	**Private client**	Public client	0.770
			Consultant	0.374
			Contractor	**0.023**
C3	"Ali Baba" tendering practice	**Private client**	Public client	0.771
			Consultant	0.514
			Contractor	**0.016**

Descriptive

	Type of organisation	Mean	Standard deviation
C1	Public client	2.89	1.159
	Private client	**2.45**	1.061
	Consultant	2.85	1.175
	Contractor	**3.03**	1.215
C2	Public client	2.52	1.013
	Private client	**2.35**	.926
	Consultant	2.63	1.186
	Contractor	**2.89**	1.123
C3	Public client	2.80	1.258
	Private client	**2.60**	1.235
	Consultant	2.88	1.289
	Contractor	**3.26**	1.315

With regards to years of working experience, the results of One-Way ANOVA test from Table 7.5.29 show significant difference: $p < 0.05$ for issue C2: "tenderers overstating their qualifications, experience and capabilities to secure contract": $p = 0.011$. From the

Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of respondents with experience of 2 - 5 years with other two categories; i) 6- 10 years ($p = 0.026$), ii) 11 - 15 years ($p = 0.043$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with experience of 2 - 5 years (mean = 2.90) have the lowest perception on statement C2. The other categories that show higher perception and significant difference than with those with experience of 2 - 5 years are: i) 6 - 10 years (lowest mean = 2.36) and ii) 11 - 15 years (mean = 2.39). This suggests that construction professionals with the middle range of years of experience (6-10, 11-15 years) are more agreeable about the occurrence of the issue "tenderers overstating their qualifications, experience and capabilities to secure contract".

The results of One-Way ANOVA test from Table 7.5.29 show significant difference: $p < 0.05$ for issue C4: "lobbying to secure contract": $p = 0.038$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of respondents with experience of 2 - 5 years and 11 - 15 years ($p = 0.038$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with others, respondents with experience of 2 - 5 years (mean = 2.87) have the lowest perception on statement C4, and those from 11-15 years have the highest (mean = 2.28). This suggests that construction professionals with the middle range of years of experience (11 -15 years) are most agreeable about the occurrence of issue "lobbying to secure contract".

Table 7.5.29

One-Way ANOVA test results: Tendering practice issues against years of working experience

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
C2	Between Groups	17.401	5	3.480	3.041	**.011**
	Within Groups	369.638	323	1.144		
	Total	387.040	328			
C4	Between Groups	17.752	5	3.550	2.388	**.038**
	Within Groups	480.224	323	1.487		
	Total	497.976	328			

Multiple Comparisons: Tukey HSD

	Tendering practice issues	(I) Years of experience	(J) Years of experience	Significance
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	**2 - 5 years**	less than 2 years	.621
			6 - 10 years	**.026**
			11 - 15 years	**.043**
			16 - 20 years	.422
			more than 20 years	.997
C4	Lobbying to secure contract	**2 - 5 years**	less than 2 years	1.000
			6 - 10 years	.467
			11 - 15 years	**.038**
			16 - 20 years	.574
			more than 20 years	1.000

Descriptives

	Years of experience	Mean	Standard deviation
C2	less than 2 years	2.54	1.036
	2 - 5 years	**2.90**	1.073
	6 - 10 years	**2.36**	.985
	11 - 15 years	**2.39**	1.153
	16 - 20 years	2.46	1.071
	more than 20 years	2.81	1.075
C4	less than 2 years	2.79	1.067
	2 - 5 years	**2.87**	1.284
	6 - 10 years	2.51	1.184
	11 - 15 years	**2.28**	1.199
	16 - 20 years	2.43	1.168
	more than 20 years	2.81	1.287

The results of One Way ANOVA test show no significant difference between the other tendering practice issues; C1: "Tendering at a low price (which does not reflect the true project cost) in order to secure contract", C3: "Ali Baba" tendering practice" and C5: "commissions or compensation to secure contract" against years of experience: $p > 0.05$. Thus, it shows that respondents from all range of years of working experience

(from less than 2 years to more than 20 years) have a similar perception on these ethical issues.

7.5.4.4 Confidentiality and pricing of tender sum

Table 7.5.30 presents the confidentiality and pricing of tender sum issues.

Table 7.5.30: Confidentiality and pricing of tender sum issues

No.	Statement
	Confidentiality
C6	Tenderers' names and prices not confidential to other tenderers
C7	Tender estimate not confidential to tenderers
	Pricing of tender sum
C8	Frequent front-loading of tender sum - high cost in preliminaries.
C9	Frequent front-loading of tender sum - high cost in initial construction works, e.g. earthworks.

The results of One Way ANOVA test show no significant difference between the issues of "confidentiality" (C6 - C7) and "pricing of tender sum" (C8 - C9) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all range of years of experience, from less than 2 years and to more than 20 years, have similar perceptions on the pre-contract ethical issues of confidentiality of tenderers' name and prices, and the tender estimate; and frequent front-loading of tender sum.

7.5.4.5 Tender evaluation

Table 7.5.31 presents the tender evaluation issues.

Table 7.5.31: Tender evaluation issues

No.	Statement
C10	Contract awarded based on lowest tender price
C11	Political interest in contract award
C12	Company interest in contract award
C13	Personal interest in contract award
C14	Community interest (e.g. neighbours and public) in contract award.
C15	Insider trading i.e. *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price)

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.5.32 show significant difference: $p < 0.05$ for issue C10: "contract awarded based on lowest tender price": $p = 0.003$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of public and private client ($p = 0.002$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with other organisations, private clients (mean = 2.45) have the highest perception on the issue "contract awarded based on lowest tender price" and the public client has the lowest (mean = 3.10). This result indicates that private clients tend to award contracts based on the lowest price, which is quite expected since their main objective is a higher profit margin for their business venture. As compared to public clients, whose main objective is public satisfaction, the result indicates their vigilance in awarding contract based on lowest price, since it might not necessarily mean satisfactory performance of the project.

The results of One-Way ANOVA test from Table 7.5.32 show significant difference: $p < 0.05$, for the issue of C12: "company interest in contract award": $p = 0.010$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of public client and contractor ($p = 0.032$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with other organisations, public clients (mean = 3.10) have the lowest perception on the issue "company interest in contract award" and the contractors; the highest (mean = 2.63). This result is quite expected as the public clients' main objective is public accountability; hence, their interest should not play a part in any contract award. As compared to contractors, it is accepted that they would put their interest first in any contract awards as they are business oriented.

Except for issues C10 and C12, the results of One Way ANOVA test show no significant difference between the other tender evaluation issues against types of organisation: $p > 0.05$. This shows that respondents from all types of organisations; whether public clients, private clients, consultants and contractors have similar perceptions on the issues of political interest (C11), personal interest (C13) and community interest (C14) in contract awards; and insider trading issues (C15).

Table 7.5.32: One-Way ANOVA test results: Tender evaluation issues against type of organisation

ANOVA

		Sum of Squares	df	Mean Square	F	Significance
C10	Between Groups	18.223	3	6.074	4.710	**0.003**
	Within Groups	419.157	325	1.290		
	Total	437.380	328			
C12	Between Groups	13.334	3	4.445	3.848	**0.010**
	Within Groups	375.426	325	1.155		
	Total	388.760	328			

Multiple Comparisons: Tukey HSD

	Tender evaluation issues	(I) Type of Organisation	(J) Type of Organisation	Significance
C10	Contract awarded based on lowest tender price	**Public client**	**Private client**	**0.002**
			Consultant	0.326
			Contractor	0.849
C12	Company interest in contract award	**Public client**	Private client	0.018
			Consultant	0.174
			Contractor	**0.032**

Descriptive

	Type of organisation	Mean	Standard deviation
C10	Public client	**3.12**	1.096
	Private client	**2.45**	1.076
	Consultant	2.84	1.170
	Contractor	2.97	1.191
C12	Public client	**3.10**	1.192
	Private client	2.58	1.029
	Consultant	2.78	1.050
	Contractor	**2.63**	.981

With regards to years of working experience, the results of One Way ANOVA test show no significant difference for the issues of tender evaluation: $p > 0.05$. Thus, it shows that respondents from all range of years of working experience, from less than 2 years to

more than 20 years, have similar perceptions on ethical issues of contract awarded based on lowest tender price (C10); political interest (C11), company interest (C12), personal interest (C13) and community interest (C14)in contract awards; and insider trading (C15).

7.5.4.6 Construction issues

The second component in construction issues are divided into six sub-components as in Table 7.5.33. The analysis of these sub-components is dealt one by one.

Table 7.5.33: Construction issues

Statement No.	Sub-components
C16 - C23	Site safety
C24 - C27	Quality of work
C28 - C29	Technical competency
C30 - C32	Payment
C33 - C38	Claims for work done
C40 - C41	Issues of workers

7.5.4.7 Site safety, technical competency, claims for work done and workers

Table 7.5.34 presents the issues of site safety, technical competency, claims for work done and workers. The results of One Way ANOVA test show no significant difference between the issues listed in “site safety” (statements C16 - C23), technical competency (statements C28 - C29), “claims for work done” (statements C 33- C38) and “workers” (statements C40 - C41) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultant and contractors; and all range of years of experience, from less than 2 years to more than 20 years; have similar perceptions on these pre-contract ethical issues.

Table 7.5.34: Issues of site safety, technical competency, claims for work done and workers

No.	Statement
	Site safety
C16	Disregard for safety during construction and/or demolition works
C17	Inadequate protection from debris and hazardous material
C18	Improper location and storage of material
C19	Improper installation and usage of temporary works (e.g. scaffolding)
C20	Inadequate perimeter hoarding at site
C21	Improper installation and usage of construction machinery
C22	Unqualified safety officer
C23	Lack of safety officer
	Technical competency
C28	Inadequate construction techniques
C29	Not competent to handle the job
	Claims for work done
C33	Inflating completed work percentages in progress claims
C34	Unreasonable costs for variation works
C35	Unreasonable claims for extension of time
C36	Inflated claims for loss and expense and damages
C37	Inflated claims for variation works due to contract amount which is low
C38	Abandoning work due to poor project management and cost control
	Workers
C40	Employing illegal workers
C41	The ethics of workers has a negative influence on the overall ethical standard

7.5.4.8 Quality of work

Table 7.5.35 presents the quality of work issues.

Table 7.5.35: Quality of work issues

No.	Statement
C24	Poor quality of work due to low contract amount
C25	Non compliance to specification - poor quality of material in general
C26	Poor workmanship in general
C27	Cutting corners because of time pressures

With regards to type of organisation, the results of One Way ANOVA test show no significant difference between the issues in quality of work (statements C24 - C27) against type of organisation: $p > 0.05$. This shows that respondents from all types of organisations; whether public clients, private clients and consultants, have similar perceptions on these pre-contract issues.

With regards to years of working experience, the results of One-Way ANOVA test from Table 7.5.36 show significant difference: $p < 0.05$ for issue C27: "cutting corners because of time pressures": $p = 0.040$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of respondents with experience of 6- 10 years and more than 20 years ($p = 0.021$). From the descriptive analysis, as compared with others, respondents with experience of 6 - 10 years (mean = 2.45) have the highest perception on statement C27 than those with more than 20 years (mean = 3.09), who are undecided and also the lowest. This suggests that construction professionals from the middle range of years of experience (6 -10 years) are most agreeable about the occurrence of the the issue "cutting corners because of time pressures", which normally impairs the quality of finished work. It is strange that the most experienced respondents (more than 20 years) are undecided about this issue, as it is expected that they would identify whether this issue occurs or not.

Table 7.5.36: One-Way ANOVA test results: Quality of work issues against years of working experience

ANOVA

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
C2	Between Groups	14.661	5	2.932	2.363	**.040**
	Within Groups	400.889	323	1.241		
	Total	415.550	328			

Multiple Comparisons: Tukey HSD

	Quality if work issues	**(I) Years of experience**	**(J) Years of experience**	**Significance**
C27	Cutting corners because of time pressures	**6 - 10 years**	less than 2 years	.670
			2 - 5 years	.951
			11 - 15 years	.983
			16 - 20 years	.997
			more than 20 years	**.021**

Descriptives

	Years of experience	**Mean**	**Standard deviation**
C27	less than 2 years	2.82	1.219
	2 - 5 years	2.61	1.051
	6 - 10 years	**2.45**	1.022
	11 - 15 years	2.58	1.193
	16 - 20 years	2.57	1.069
	more than 20 years	**3.09**	1.181

Except for issue C27, the results of One Way ANOVA test show no significant difference between the other quality of work issues against years of working experience: $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the issues of quality: i) poor quality of work due to low contract amount (C24), ii) non compliance to specification - poor quality of material in general, and iii) poor workmanship in general (C26).

7.5.4.9 Payment

Table 7.5.37 presents the payment issues.

Table 7.5.37: Payment issues

No.	Statement
C30	Non-payment to consultant and/or contractor
C31	Delayed payment to consultant and/or contractor
C32	"Pay when paid" (back to back payment) affecting sub-contractors`

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.5.38 show significant difference: $p < 0.05$ for issue C31: "delayed payment to consultant and/or contractor": $p = 0.028$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of public client and contractor ($p = 0.039$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with other organisations, public clients (mean = 2.86) have the lowest perception on the issue "delayed payment to consultant and/or contractor", and the contractors; the highest (mean = 2.40). The contractors' perception on late payments is quite usual since they are very much dependable on payments for work done. As for public clients, the result indicates that they perceive this issue to be less acute, as they need to follow procedures with regards to time deadlines on payment.

Table 7.5.38

One-Way ANOVA test results: Payment issues against type of organisation

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
C31	Between Groups	11.023	3	3.674	3.084	**0.028**
	Within Groups	387.178	325	1.191		
	Total	398.201	328			

Multiple Comparisons: Tukey HSD

	Payment	(I) Type of Organisation	(J) Type of Organisation	Significance
C31	Delayed payment to consultant and/or contractor	**Public client**	Private client	0.720
			Consultant	0.073
			Contractor	**0.039**

Descriptive

	Type of organisation	Mean	Standard deviation
C31	Public client	**2.86**	1.103
	Private client	2.68	1.133
	Consultant	2.48	1.068
	Contractor	**2.40**	1.069

With regards to years of working experience, the results of One Way ANOVA test show no significant difference against payment issues (statements C30 - C32): $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the issues of payment: i) non - payment to consultant and/or contractor (C30), ii) delayed payment to consultant and/or contractor (C31), and iii) "pay when paid" (back to back payment) affecting sub-contractors (C32).

7.5.4.10 Post - contract issues

Table 7.5.39 presents the post-contract issues.

Table 7.5.39: Post-contract issues

No.	Statement
C49	Non compliance to specification- poor quality of material in general
C50	Poor workmanship in general

The results of One Way ANOVA test show no significant difference between the issues in post - contract stage of defective works (statements C49 and C50) against type of

organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultant and contractors; and all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the issues: i) non compliance to specification- poor quality of material in general (C49), and ii) poor workmanship in general (C50).

7.5.4.11 Environmental issues

Table 7.5.40 presents the environmental issues.

Table 7.5.40: Environmental issues

No.	Statement
C42	Contamination of soil (e.g., due to spread of harmful substances during construction)
C43	Lack of proper protection against soil erosion
C44	Unnecessary clearing of trees or shrubs
C45	Unnecessary cutting of ground earth
C46	Dumping of building debris illegally

The results of One Way ANOVA test show no significant difference between the environmental issues (statements C42 - C46) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultant and contractors; and all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the varied environmental issues: contamination of soil (C42), soil erosion (C43), unnecessary clearing of trees or shrubs (C44), unnecessary cutting of ground earth (C45) and dumping of building debris illegally (C46).

7.5.4.12 Other issues

Table 7.5.41 presents other issues.

Table 7.5.41: Other issues

No.	Statement
	Harassment issue
C39	Situations where a party is made responsible for another party's error or negligence
	Respect for others
C47	Disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works

With regards to type of organisation, the results of One Way ANOVA test show no significant difference between the other issues (statements C39 and C47) against type of organisation: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultant and contractors have similar perceptions on the issues of harassment and respect for others.

With regards to years of working experience, the results of One-Way ANOVA test from Table 7.5.42 show significant difference: $p < 0.05$ for issue C27: "situations where a party is made responsible for another party's error or negligence": $p = 0.042$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of respondents with experience of 11 - 15 years with those of more than 20 years ($p = 0.013$). From the descriptive analysis, as compared to others, respondents with experience of 11 -15 years (mean = 2.55) have the highest perception on statement C27 than those with more than 20 years (mean = 3.13), who are undecided and also the lowest. This suggests that construction professionals from the middle range of years of experience (11 -15 years) are most agreeable about the occurrence of issue "situations where a party is made responsible for another party's error or negligence", which may affect trust between the parties, and eventually the performance of the project. Again, the most experienced respondents (more than 20 years) are undecided about this issue,

as it is expected that they would identify whether this issue occur, or not (which is similar to results on quality of work: statement C27).

Except for issue C39, the results of One Way ANOVA test show no significant difference between the other issue: respect for others (C47): $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the issue "disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works".

Table 7.5.42: One-Way ANOVA test results: Other issues against years of working experience

ANOVA

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
C39	Between Groups	10.759	5	2.152	2.339	**.042**
	Within Groups	297.144	323	.920		
	Total	307.903	328			

Multiple Comparisons: Tukey HSD

	Other issues: Harassment	**(I) Years of experience**	**(J) Years of experience**	**Significance**
C39	Situations where a party is made responsible for another party's error or negligence	**11 - 15 years**	less than 2 years	.711
			2 - 5 years	.890
			6 - 10 years	.858
			16 - 20 years	.884
			more than 20 years	**.013**

Descriptives

	Years of experience	**Mean**	**Standard deviation**
C39	less than 2 years	2.86	.756
	2 - 5 years	2.72	.933
	6 - 10 years	2.74	.934
	11 - 15 years	**2.55**	1.008
	16 - 20 years	2.79	.917
	more than 20 years	**3.13**	1.075

7.5.4.13 Enforcement issue

Table 7.5.43 presents the enforcement issue of participants in the industry.

Table 7.5.43: Enforcement issue

No.	Statement
C48	The following parties, lack effective reporting procedures and enforcement for unethical practices:
C48a	Own organisation
C48b	Professional institutions
C48c	Industry association (e.g. Contractor's Association)
C48d	Government

The results of One Way ANOVA test show no significant difference between enforcement issues (statements C48a - C48d) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultant and contractors; and all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the parties; that is, the government, industry associations, professional institutions and their own organisations lack effective reporting procedures and enforcement for unethical practices.

7.5.4.14 Effects of unethical practice in the construction industry

Table 7.5.44 presents the effects of unethical practice in the construction industry.

Table 7.5.44: Effects of unethical practice in the construction industry

No.	Statement
C51	The effects of unethical practice are:
C51a	The cost of getting our projects built
C51b	Trust between project participants; which affects business
C51c	The long term performance of unethical party
C51d	Interest of young generation into industry
C51e	They give the industry a bad image

The results of One Way ANOVA test show no significant difference between the effects of unethical practice (statements C51a - C51e) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of

organisations, whether public clients, private clients, consultant and contractors; and all range of years of working experience (from less than 2 years to more than 20 years), have similar perceptions on the effects of unethical practice. The effects are: “the cost of getting our projects built” (C51a); “trust between project participants; which affects business” (C51b); “the long term performance of unethical party” (C51c); “interest of young generation into industry” (C51d) and finally “giving the industry a bad image” (C51e).

7.4.4.15 Summary of One - way ANOVA analysis: Part C

One - way ANOVA analysis: Part C is carried out between the five components of ethical issues, enforcement issue, and effects of unethical practice against the two demography profiles: type of organisation and years of working experience in the construction industry. The above discussion detailed the significant difference or no significant difference between the dependent variables in these components against the demography profiles.

Table 7.5.45 shows the summary of the one - way ANOVA analysis between the said components against demography profile.

Table 7.5.45: Summary of One - way ANOVA analysis: Part C

Statement No.	Component No.	Dependent variables: Components /Statements	Independent variables	Significant difference/ No significant difference
C1 - C15	**1**	**PRE-CONTRACT ISSUES**		
		Sub - components		
C1 - C5		**Tendering practice**		
C1		Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	A8: Type of organisation	**Significant difference** Respondents from private clients and contractors
C2		Tenderers overstating their qualifications, experience and capabilities to secure contract	A8: Type of organisation	**Significant difference** Respondents from private clients and contractors
			A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 2 – 5 years with i) 6 - 10 years and ii) 11 - 15 years.
C3		"Ali Baba" tendering practice	A8: Type of organisation	**Significant difference** Respondents from private clients and contractors
C4		Lobbying to secure contract	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 2 - 5 years and 11 - 15 years.
C6 - C7		**Confidentiality**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C8 - C9		**Tender sum**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C10 - C15		**Tender evaluation**	A9: Years of working experience in the construction industry	**No significant difference**
C10		Contract awarded based on lowest tender price	A8: Type of organisation	**Significant difference** Respondents from public clients and private clients
C12		Company interest in contract award	A8: Type of organisation	**Significant difference** Respondents from public clients and contractors

Table 7.5.45: Summary of One - way ANOVA analysis - Part C (continued)				
Statement No.	**Component No.**	**Dependent variables: Components /Statements**	**Independent variables**	**Significant difference/ No significant difference**
C16 - C41	**2**	**CONSTRUCTION ISSUES**		
		Sub - components		
C16 - C23		**Site safety**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C24 - C27		**Quality of work**	A8: Type of organisation	**No significant difference**
C27		Cutting corners because of time pressures	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 6- 10 years and more than 20 years.
C28 - C29		**Technical competency**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C30 - C32		**Payment**		
C31		Delayed payment to consultant and/or contractor	A8: Type of organisation	**Significant difference:** Respondents from public clients and contractors
			A9: Years of working experience in the construction industry	**No significant difference**
C33 - C38		**Work done**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C40 - C41		**Issue of workers**	A8: Type of organisation	**No significant difference**
			A8: Years of working experience in the construction industry	**No significant difference**
C49 & - C50	**3**	**POST - CONTRACT ISSUES**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**

Table 7.5.45: Summary of One - way ANOVA analysis - Part C (continued)				
Statement No.	**Component No.**	**Dependent variables: Components /Statements**	**Independent variables**	**Significant difference/ No significant difference**
C42 - C46	**4**	**ENVIRONMENTAL ISSUES**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C39 & C47	**5**	**OTHER ISSUES**	A8: Type of organisation	**No significant difference**
C39		Situations where a party is made responsible for another party's error or negligence	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 11 - 15 years and more than 20 years.
C48a - C48d		**ENFORCEMENT ISSUE**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
C51a - C51e		**EFFECTS OF UNETHICAL PRACTICE**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**

7.6 Part D: Factors to improve ethics in the construction industry

7.6.1 Introduction

This section covers the analysis of data and its discussion on factors to improve ethics in the construction industry in Malaysia as in Part D of the questionnaire. The objective of the analysis is to determine the perception of the respondents on the factors to improve ethics. The factors are grouped into eight components. They are i) individual factors, ii) professional training factors, iii) organisational factors, iv) industry factors, v) system and procedure in the industry, vi) environmental ethics, vii) legislative enforcement; and viii) accountability and customer satisfaction.

The first analysis is the test of reliability for all eight components. The second analysis is descriptive statistics of mean scores on perceptions of respondents on the statements in the eight components of factors to improve ethics. Further analysis of the mean scores is carried out on the overall mean for each component, and, overall ranking of all the factors in the components.

The third analysis is the One - way ANOVA. This analysis is to discover if respondents from different demographic profiles; from different types of organisations in the industry, and years of working experience, differ significantly from each other on the factors to improve ethics in the industry. This is important as different demographic profiles may generate different results on the factors investigated, due to their organisations' roles as industry players; and years of working experience may have an effect on their perception on the more significant factors to improve ethics.

7.6.2 Test of reliability

There are 44 statements on factors to improve ethics in Part D of the analysis. The number of statements and the results of reliability tests of each component are shown in Table 7.6.1. The Cronbach's coefficient alpha values range from 0.731 to 0.861, which implies that the statements reliably and consistently measure the perceptions of the respondents on the eight components; from "acceptable" ($\alpha > .7$) to "good" ($\alpha > .8$) (refer to Table 6.3: Cronbach's coefficient alpha (α) rule of thumb).

Table 7.6.1: Cronbach's coefficient alpha (α) for Part D

Statement No.	Component No.	Components	No of statements	(α)
D1 - D2	1	Individual factors	2	0.740
D3 - D5	2	Professional training factors	3	0.752
D6, D10-D15a,b	3	Organisational factors	8	0.744
D7 - D9	4	Industry factors	3	0.813
D16 - D36	5	System and procedure in the construction industry	21	0.861
D37 - D39	6	Environmental ethics	3	0.731
D40 - D41	7	Legislative enforcement	2	0.841
D42 - D43	8	Accountability and customer satisfaction	2	0.861
		Total no. of statements	**44**	

Note: There are altogether 44 factors to improve ethics, since factor D15 is made up of two factors: D15a and D15b.

7.6.3 Descriptive analysis

The following analysis will present the perceptions of the respondents on the factors in the eight components to improve ethics in the industry. As described earlier in Chapter 6 all statements use the Likert 5 - point scale; 1- strongly agree, 2 - agree, 3 - neither agree or disagree, 4 - disagree and 5 - strongly disagree.

7.6.3.1 Individual factors

Table 7.6.2 presents the means, median and standard deviations (SD) scores on individual factors, by each statement arranged in ascending order of size, which is the respondents' declining agreeability; and summary on all statements.

Table 7.6.2: Mean score on individual factors

No.	Statement	Rank	Mean	Median	S.D
D2	Religious and moral education is important in setting high ethical standards.	1	1.43	1.00	0.607
D1	Education in ethics should start from school.	2	1.47	1.00	0.610
	All statements		1.45		

The results show that the respondents agree that education from the elementary stage of an individual is important to improve ethics, with religious and moral education (D1: mean = 1.43) slightly more important than education in ethics at school (D2: mean = 1.47). Considering both statements together, the mean score of 1.45 implies that on average, the respondents agree that individual factors are important to improve ethics in the industry.

7.6.3.2 Professional training factors

Table 7.6.3 presents the means, median and standard deviations (SD) scores on professional training factors.

Table 7.6.3: Mean score on professional training factors

No.	Statement	Rank	Mean	Median	S.D
D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.	1	1.75	2.00	0.674
D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.	2	1.93	2.00	0.741
D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.	3	2.18	2.00	0.860
	All statements		1.95		

By individual statements, the respondents agree with all the statements. University education ranked number 1; “ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed” (D3: mean = 1.75). According to Candace (2003), such education can yield much more than mere compliance with minimum levels of competence and ethics and can provide a hundredfold return to society. The role of professional bodies on code of ethics is the least agreeable, “the present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed (D4: mean = 2.18). The respondents also agreed on “more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year (D5: mean = 1.93). Considering all statements together, the mean score of 1.95 implies that on average, the respondents agree that professional training factors are important improve ethics in the industry.

In summary, evidence from the results suggests that individual and professional training factors are important since they form the nucleus of any efforts to improve ethics in the industry, before entering the organisational setting.

7.6.3.3 Organisational factors

Table 7.6.5 presents the means, median and standard deviations (SD) scores on organisational factors. By individual statements, the respondents agree with all the statements. The majority of respondents concurred that the company’s leaders are the main catalyst of organisations and “should serve as role models to act ethically” (D10: mean = 1.47). The respondents agreed that the organisation's approach towards ethics of their employees must be taken into consideration. These include “better remunerations, incentives and working environment are necessary so as employees are comfortable and

committed" (D12: mean = 1.69); and "ethics and social responsibility when determining an individual's competence and reward criteria (e.g. promotion or job reference) (D11: mean = 1.71).

Table 7.6.4: Mean score on organisational factors

No.	Statement	Rank	Mean	Median	S.D
D10	The company's leaders should serve as role models to act ethically.	1	1.47	1.00	0.574
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.	2	1.69	2.00	0.658
D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).	3	1.71	2.00	0.610
D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by.	4	1.75	2.00	0.609
D13	Whistle blowers to be better protected and more highly regarded. (*Whistle blowing is the act of an employee, informing higher management or the public of unethical or illegal practice by an employee or supervisor)*	5	1.98	2.00	0.755
D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.	6	2.05	2.00	0.725
D15a	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, how do you rate the following initiatives in a company/organisation? - Appointing an "Ethics Officer"	7	2.62	3.00	0.886
D15b	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, how do you rate the following initiatives in a company/organisation? - Creating an "Ethics Department/Office"	8	2.63	3.00	0.948
	All statements		1.99		

The respondents also agreed that, "all construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by" (D6: mean = 1.75). However, the survey results show a distinctive manner when it is the turn of the organisation to hold the reigns on the employees in order to

improve ethics. The respondents were less enthusiastic for any check and balance structure for themselves on the following initiatives in the organisation; "appointing an ethics officer (D15a: mean: 2.62) and "creating an ethics department/office (D15b: mean: 2.63) " in order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program".

Considering all the statements, the mean score of 1.99 implies that on average, the respondents agree that organisational factors are important to improve ethics in the industry.

7.6.3.4 Industry factors

Table 7.6.4 presents the means, median and standard deviations (SD) scores on industry factors.

Table 7.6.5: Mean score on industry factors

No.	Statement	Rank	Mean	Median	S.D
D8	Existing or new Code of Ethics should include specific anti-corruption provisions; e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	1	1.65	2.00	0.647
D7	There should be a standard "construction industry" Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.	2	1.75	2.00	0.608
D9	The provisions in **D8** above should be stated in contracts and apply to anyone hired to design and construct the project.	3	1.75	2.00	0.752
	All statements		1.72		

By individual statements, the respondents agree with all the statements. The role of the industry factors on Code of Ethics to combat corruption, is the most agreeable among the respondents, which is, "existing or new Code of Ethics should include specific anti-corruption provisions; e.g., zero tolerance approach for bribery, fraud, deception or

corruption in any design and construction work" (D8: mean = 1.65). Furthermore, "this provision should be stated in contracts and apply to anyone hired to design and construct the project" is agreed by the respondents (D9: mean = 1.75).

The respondents' agreeability on code of ethics in organisations as described in the previous section corresponds with a code of ethics for the industry. They agreed on "a standard construction industry Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by" (D7: mean = 1.75) for the industry. However, it is less agreeable as compared to "specific provisions on anti-corruption" measures to be included in existing or new code of ethics (D8: mean = 1.65). It seems that the respondents are less willing for a check and balance structure to improve ethics for themselves, but desire a check and balance structure to improve the corruption plague in the construction industry generally. Considering all statements together, the mean score of 1.72 implies that on average, the respondents agree that industry factors are important to improve ethics in the industry.

7.6.3.5 System and procedure in the construction industry

System and procedure factors to improve ethics in the construction industry are divided into five sub-components as in Table 7.6.6. The analysis of these sub-components are dealt firstly one by one, and followed by a summary analysis of this component.

Table 7.6.6: System and procedure in the construction industry

Statement No.	Sub-components
D16 - D21	Tendering and procurement practice
D22 - D28	Site safety
D29 - D31	Quality of work
D32 - D34	Workmanship
D35 - D36	Timely payment

7.6.3.6 Tendering and procurement practice

Table 7.6.7 presents the means, median and standard deviations (SD) scores on tendering and procurement practice factors. By individual statements, the respondents agree with all the statements; however, they agree the most and supported the measure of "blacklist companies practising unethical practices" (D21, mean = 1.66) and agree relatively the least with "open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest and not reflecting the true project cost" (D18, mean=2.45).

Table 7.6.7: Mean score on tendering and procurement practice

No.	Statement	Rank	Mean	Median	S.D
D21	Blacklist companies practising unethical practices.	1	1.66	1.00	0.852
D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.	2	1.69	2.00	0.644
D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exists conflict of interest (for example, a relative) towards any of the parties bidding for contracts.	3	1.80	2.00	0.677
D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.	4	1.97	2.00	0.680
D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.	5	2.28	2.00	0.867
D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.	6	2.45	2.00	1.008
	All statements		1.98		

With regards to awarding of contract, the respondents felt that "a declaration statement is necessary, for any individuals on the side of the party awarding the contract, if, there exists conflict of interest (for example, a relative) towards any of the parties bidding for contracts (D20: mean = 1.80). The results also showed that the respondents were relatively satisfied with existing methods of procurement in the approach to improve ethics; that is, pre-qualification (D16: mean = 1.97) and negotiated tendering (D17:

mean = 2.28) as a means of setting a barrier for entry in limiting tenderers who are not only capable but, also responsible. Considering all statements together, the mean score of 1.98 implies that on average, the respondents agree that tendering and procurement practice factors are important to improve ethics in the industry.

7.6.3.7 Site safety

Table 7.6.8 presents the means, median and standard deviations (SD) scores on site safety factors.

Table 7.6.8: Mean score on site safety factors

No.	Statement	Rank	Mean	Median	S.D
D28	Safety training and education to be made compulsory for all concerned.	1	1.64	2.00	0.598
D24	Code of ethics should stress the importance of safety.	2	1.70	2.00	0.523
D25	Ban contractors with bad safety records from tendering projects.	3	1.70	2.00	0.730
D27	Safety criteria should be standardised as guidelines for all concerned.	4	1.71	2.00	0.559
D22	Require all workplaces to conduct risk assessment and site management plans.	5	1.81	2.00	0.534
D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety.	6	1.81	2.00	0.604
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	7	1.84	2.00	0.629
	All statements		1.74		

By individual statements, the respondents agree with all the statements; however, they agree the most and supported that “safety training and education to be made compulsory for all concerned” (D28, mean = 1.64). It was also necessary to adopt a more tangible approach of strict rules and regulations for construction players involved. These include “stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management”, although this measure was agreed relatively the least (D23, mean = 1.84) and “ban contractors with bad safety records from tendering projects” (D25, mean = 1.70). The respondents also agreed that safety culture and awareness of

importance of workplace safety can be inculcated through campaigns and urging employers and workers to take responsibility for workplace safety (D26, mean = 1.81). It is important to note that there appears to be not much variation in respondents' perceptions between the various statements (mean range = 1.64 - 1.84). Hence, all considerations should come hand in hand in order to improve ethics of site safety in order to improve ethics in the industry. Considering all statements together, the mean score of 1.74 implies that on average, the respondents agree that site safety factors are important to improve ethics in the industry.

7.6.3.8 Quality of work

Table 7.6.9 presents the means, median and standard deviations (SD) scores on quality of work factors.

Table 7.6.9: Mean score on quality of work factors

No.	Statement	Rank	Mean	Median	S.D.
D31	Concentrate on efforts to create quality culture within each organisation.	1	1.78	2.00	0.599
D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.	2	1.83	2.00	0.586
D29	The client should be more involved in the design and construction process.	3	2.02	2.00	0.813
	All statements		1.88		

By individual statements, the respondents agree with all the statements on the quality of work factors. These include "concentrating on efforts to create quality culture within each organisation", which was the most agreeable (D31, mean = 1.78) and compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects (D30, mean = 1.83). The notion that "the client should be more involved in the design and construction process" as an exertion to improve ethics in quality of work appear to be least favourable by the respondents (D29, mean = 2.02).

Considering all statements together, the mean score of 1.88 implies that on average, the respondents agree that quality of work factors are important to improve ethics in the industry.

7.6.3.9 Workmanship

Table 7.6.10 presents the means, median and standard deviations (SD) scores on workmanship factors.

Table 7.6.10: Mean score on workmanship factors

No.	Statement	Rank	Mean	Median	S.D.
D33	In-house training in trade skills for all workers, including foreign workers	1	1.80	2.00	0.561
D34	The government to provide incentives to help employers to invest in training programmes	2	1.80	2.00	0.660
D32	Reduce the number of foreign workers who normally lack trade skills	3	2.16	2.00	0.850
	All statements		1.92		

By individual statements, the respondents agree with all the statements on workmanship. "Training" and "incentives" are the most agreeable, which are "in-house training in trade skills for all workers, including foreign workers" (D32) and "the government to provide incentives to help employers to invest in training programmes" (D34), with both means = 1.80. However, they agree the least on "reduce the number of foreign workers who normally lack trade skills" (D32, mean = 2.16). This indicates that foreign workers, mostly from Indonesia and Bangladesh are indispensable to the Malaysian construction industry, and since they normally lack trade skills, the respondents had supported "in-house training in trade skills for all workers, including foreign workers" (D33). Considering all statements together, the mean score of 1.92 implies that on average, the respondents agree that workmanship factors are important to improve ethics in the industry.

7.6.3.10 Timely payment

Table 7.6.11 presents the means, median and standard deviations (SD) scores on timely payment factors.

Table 7.6.11: Mean score on timely payment factors

No.	Statement	Rank	Mean	Median	S.D
D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.	1	1.99	2.00	0.890
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame.	2	2.00	2.00	0.830
	All statements		2.00		

As support for the contractors to improve ethics during construction, it is imperative to improve timely payment to them. The two (2) factors considered are "direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary" (D35, mean = 1.99) and "enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame" (D36, mean = 2.00). As shown from the results, these two contentions were almost equally conceded by the respondents. Considering both statements together, the mean score of 2.00 implies that on average, the respondents agree that timely payment factors are important to improve ethics in the industry.

7.6.3.11 Summary: System and procedure in the construction industry

Table 7.6.12 presents the means, median and standard deviations (SD) scores on all the statements in the sub-components of system and procedure in the construction industry, arranged in ascending order of size, which is the respondents' declining agreeability; and summary of all statements in the component of system and procedure.

Table 7.6.12: Summary: Mean score on system and procedure in the construction industry

No.	Statement	Rank	Mean
	Sub-components		
D22 - D28	Site safety	1	1.74
D29 - D31	Quality of work	2	1.88
D32 - D34	Workmanship	3	1.92
D16 - D21	Tendering and procurement practice	4	1.98
D35 - D36	Timely payment	5	2.00
	All statements		1.88

By all the statements in the five sub-components, the respondents agree with all the system and procedure factors in the construction industry. The results show that the respondents agree the most with the factors of site safety (mean = 1.74); followed by quality of work (mean=1.88); tendering and procurement practice (mean = 1.98) and the least agreeable, timely payment (mean = 2.00). Nevertheless, it can be concluded that there appears to be not much variation in respondents' perceptions between the various sub-components (mean range = 1.74 - 2.00). In conclusion, considering all statements in all sub-components together, the mean score of 1.88 implies that on average, the respondents agree that systems and procedure factors are important to improve ethics in the construction industry.

7.6.3.12 Other components

Table 7.6.13 presents the other components to improve ethics in the construction industry.

Table 7.6.13: Other components to improve ethics in the construction industry

No.	Component No.	Components
D37 - D39	6	Environmental ethics
D40 - D41	7	Legislative enforcement
D42 - D43	8	Accountability and customer satisfaction

Table 7.6.14 presents the means, median and standard deviations (SD) scores on the factors of other components. Analysis and discussion of these components is dealt together in this section.

Table 7.6.14: Mean score on other components

No.	Statement	Rank	Mean	Median	S.D
	Environmental ethics				
D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations)	1	1.86	2.00	0.710
D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.	2	1.98	2.00	0.576
D38	Project information should be shared with the public to obtain their perspectives regarding the project.	3	2.23	2.00	0.788
	All statements		2.02		
	Legislative enforcement				
D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.	1	1.81	2.00	0.676
D41	An 'ombudsman' service for the construction industry should be appointed by the legislative body. *(Function of "ombudsman" is to receive, investigate and report on complaints received of unethical practise within the construction industry)*	2	1.95	2.00	0.750
	All statements		1.89		
	Accountability and customer satisfaction				
D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.	1	1.91	2.00	0.624
D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).	2	1.98	2.00	0.674
	All statements		1.94		

By individual statement, the respondents agree with all statements in environmental ethics, legislative enforcement and accountability and customer satisfaction. On environmental ethics, the respondents agree relatively the least with "project information should be shared with the public to obtain their perspectives regarding the project (D38, mean = 2.23). It appears that construction participants are less willing to

share information with the public, which may suggest that they would like to prevent disapproval or disagreement regarding the project, more so, if there are environmental issues involved.

The results also show the respondents' tendency to trust the law and regulations in an effort to improve ethics in the industry. This was reflected in the most agreeable factor on environmental ethics; "stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project" (D39, mean = 1.80). This inclination was further reiterated as the most agreeable factor in legislative enforcement; "there should be specific laws imposed by the government to "check" unethical practises in the industry" (D40, mean = 1.81).

The results also indicated that with regards to accountability and customer satisfaction, it was reassuring to note that the respondents' attitudes on ethics stems from responsibility towards their customers and the general public. Thus, "for projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value (D42, mean = 1.91) and "for projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value) (D43, mean = 1.98). These results suggest that the respondents are receptive towards attempts to gauge accountability and customers' satisfaction with respect to public (government funded) and private projects.

Considering all statements together for the three components of environmental ethics, legislative enforcement, and accountability and customer satisfaction, the mean score of 2.02, 1.88 and 1.95 respectively, implies that on average, the respondents agree that these factors are important to improve ethics in the construction industry.

7.6.3.13 Summary: Components of factors to improve ethics

Table 7.6.15 presents the means, median and standard deviations (SD) scores for all components on factors to improve ethics, by the respondents, arranged in ascending order of size, which is the respondents' declining agreeability.

Table 7.6.15: Summary mean score: Components of factors to improve ethics

No.	Component No	Components	Rank	Mean
D1 - D2	1	Individual factors	1	1.45
D7 - D9	3	Industry factors	2	1.72
D16 - D36	5	System and procedure in the construction industry	3	1.88
D40 - D41	7	Legislative enforcement	4	1.89
D42 - D43	8	Accountability and customer satisfaction	5	1.94
D3 - D5	2	Professional training factors	6	1.95
D6, D10 - D15a,b	4	Organisational factors	7	1.99
D37 - D39	6	Environmental ethics	8	2.02

Considering each eight components, the respondents agree that these factors are important to improve ethics in the industry (mean range = 1.45 - 2.02). Individual factors is most agreeable (mean = 1.45); followed by industry factors (mean = 1.72); system and procedure in the industry (mean = 1.88); legislative enforcement (mean = 1.89); professional training factors (mean = 1.95), accountability and customer satisfaction (mean = 1.95), organisational factors (1.99); and the least agreeable; environmental ethics (mean = 2.02).

The results show that education in ethics, starting from school and religious and moral education in the early years of a professional, are vital ingredients in the pursuit to improve ethics in the industry; hence, individual factors is ranked 1. The next two components: industry factors and system and procedure in the construction industry are ranked 2 and 3 respectively. Industry factors consider "a standard construction industry"

code of ethics; and "specific anti-corruption provisions" in existing or new code of ethics and also in "contracts of design and construction of projects". With regards to system and procedure in the construction industry, it considers the following sub-components: procurement and tendering practice, site safety, quality of work, workmanship of work and timely payment. From the results, this shows that the respondents perceive that factors that are most associated and, directly affecting, the industry itself, are important to improve ethics in the industry. The next important factor - legislative enforcement (ranked 4) is highlighted here. We "need specific laws to 'check' unethical practices", and "an 'ombudsman' service to receive, investigate and report on complaints received of unethical practise", within the construction industry. This shows that laws and regulations are requisite factors to ensure adherence by the industry players.

On the other hand; the component environmental ethics, in particular, is ranked 8, which is the least agreeable. Environmental ethics considers "stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project", and also matters that deals with the public; that is, "managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients"; and "project information should be shared with the public to obtain their perspectives regarding the project". These results show that respondents perceive that factors which involve the public, in terms of their opinion and input on projects, are regarded as less important to improve ethics in the industry, even though if there are environmental concerns on the project.

7.5.3.14 Overall ranking of factors to improve ethics

Table 7.6.16 in Appendix 4 presents the overall ranking and mean scores on all the 44 factors to improve ethics in the industry. It also shows their categorisation according to the components. The results show that all 44 factors investigated are important to improve ethics in the industry. Table 7.6.17 presents the five most important factors to improve ethics.

Table 7.6.17: Five most important factors to improve ethics

The means are arranged in ascending order of size; which is the respondents declining agreeability.					
Component/ sub-component	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation (S.D.)**
Individual	D2	Religious and moral education is important in setting high ethical standards.	1	1.43	0.607
Organisational	D10	The company's leaders should serve as role models to act ethically	2	1.47	0.574
Individual	D1	Education in ethics should start from school.	3	1.47	0.610
System and procedure in the industry - site safety	D28	Safety training and education to be made compulsory for all concerned.	4	1.64	0.598
Industry	D8	Existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	5	1.65	0.647

From Table 7.6.17, on the five most important factors to improve ethics, the results confirm individual factors as being the fundamental criteria for improvement of ethics. The results show that "religious and moral education is important in setting high ethical standards" is the most important factor (rank 1: mean =1.43) and "education in ethics should start from school" (rank 3: mean = 1.47, S.D. = 0.610). Another important factor is leadership in organisations: "the company's leaders should serve as role models to act ethically" (rank 2: mean = 1.47, S.D. = 0.574). As discussed in the literature review,

employees will normally follow their leaders' characters and acts. Being role models in ethics are crucial, since leaders can influence the ethics of their employees, which will affect the ethics of the organisation as an industry player, and finally the industry itself. "Safety training and education to be made compulsory for all concerned" during construction stage is ranked fourth (mean =1.64). The result shows that, especially with regards to safety factors during construction stage, as a first step to improve ethics, the main agenda should focus on training and education. The industry component, specifically on anti - corruption provisions is ranked fifth (mean = 1.65): "existing or new Code of Ethics should include specific anti-corruption provisions; e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work". The result shows that one of the main factors to improve ethics is to tackle the issue of corruption, which is prevalent in the industry as shown by the results of analysis in Part C on ethical issues.

Table 7.6.18 presents the five least important factors to improve ethics. From this table, results show that the organisational factors of "creating an ethics department/office" and, also "appointing an ethics officer" as "initiatives in a company/organisation", "in order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program"; are ranked among the least important factors (rank 44: mean = 2.63, and rank 43: mean = 2.62 respectively). The results show that factors that may improve ethics of the employees in the organisations are regarded as less important by the respondents. This also suggests the respondents' deficient attitude on efforts to improve ethics within their organisations, especially when they may be scrutinised by the "ethics office" or the "ethics officer" for any unethical practices. Since this is a new concept in Malaysia, it is understandable that the respondents are

apprehensive, even though, as discussed in the literature review, it is now accepted in the West.

Table 7.6.18: Five least important factors to improve ethics

The means are arranged in descending order of size; which is the respondents increasing agreeability.					
Component/ sub-component	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation (S.D.)**
Organisational	D15B	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, *how do you rate the following initiatives in a company/organisation*? Creating an "Ethics Department/Office"	44	2.63	0.948
Organisational	D15A	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, *how do you rate the following initiatives in a company/organisation*? Appointing an "Ethics Officer"	43	2.62	0.886
System and procedure in the industry (procurement and tendering practice)	D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.	42	2.45	1.008
System and procedure in the industry (procurement and tendering practice)	D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.	41	2.28	0.867
Environmental ethics	D38	Project information should be shared with the public to obtain their perspectives regarding the project.	40	2.23	0.788

Other least important factors to improve ethics are in the component of system and procedure in the industry, which include: "open tendering not relevant for mega projects

(more than RM 100 million) because of competitiveness to be the lowest which may not reflect the true project cost" (rank 42: mean = 2.45) and "negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible" (rank 41: mean = 2.28). The results show that there may be few deficiencies in this tendering practice, which could lead to unethical practice; hence, the proposition set out in these factors is mildly accepted. Other least important factor that can improve ethics concerns environmental ethics, where: "project information should be shared with the public to obtain their perspectives regarding the project (rank 40: mean = 2.23). As discussed in the analysis earlier, environmental concerns which involve the public are regarded as less important, even though, as discussed in literature, everyone affected by the project should be consulted in the project.

7.6.4 One - way ANOVA analysis

7.6.4.1 Introduction

This section will cover the One - way ANOVA analysis for Part D of the questionnaire: on factors to improve ethics in the construction industry in Malaysia. The objective of the analysis is to investigate if there is sufficient evidence to infer that respondents from two demography profiles differed significantly from each other on the eight components of factors to improve ethics in the industry. Further mean scores were analysed for the demography profiles to determine their different perceptions on factors which are significantly different.

One - Way ANOVA is conducted between the eight components of factors to improve ethics, which are: i) individual factors, ii) professional training factors, iii) industry factors, iv) organisational factors, v) system and procedure in the industry, vi) environmental ethics, vii) legislative enforcement; and viii) satisfaction and

accountability. The demography profiles are, i) type of organisation, and ii) years of working experience in the industry; that the respondents present. As for type of organisation, this demography profile is relevant, as, for example, contractors and clients may have different perceptions on the factors of tendering and procurement practice. As for years or working experience, different perceptions on factors to improve ethics may arise due to the respondents' duration of exposure to the industry, where he may feel that certain factors are more significant than others; for example, with regards to timely payment.

One-way ANOVA analysis is conducted, between dependent factors to improve ethics (dependent variables) and demography profiles (independent variables) as in Table 7.6.17. For the purposes of discussion of analysis, only the results of the One Way ANOVA test that has a significant difference; p value < 0.05 (George and Maller, 2003) are described further.

Table 7.6.19: Dependent and independent variables

Statement No.	**No of components**	**Dependent variables: Components**	**Independent variables**	**Categories for independent variables**
D1 - D2	1	Individual factors	**A8**: Type of organisation **A9**: Years of working experience in the construction industry	**A8**: Type of organisation 1. Public client 2. Private client 3. Consultant 4. Contractor **A9**: Years of working experience in the construction industry 1. less than 2 years 2. 2 - 5 years 3. 6 - 10 years 4. 11 - 15 years 5. 16 - 20 years 6. more than 20 years
D3 – D5	2	Professional training factors		
D6, D10-D15a,b	3	Organisational factors		
D7 – D9	4	Industry factors		
D16 –D36	5	System and procedure in the construction industry		
D37 - D39	6	Environmental ethics		
D40 - D41	7	Legislative enforcement		
D42 - D43	8	Accountability and customer satisfaction		

7.6.4.2 Individual factors

Table 7.6.20 presents the individual factors.

Table 7.6.20: Individual factors

No.	Statement
D1	Education in ethics should start from school.
D2	Religious and moral education is important in setting high ethical standards.

The results of One Way ANOVA test show no significant difference between individual factors (statements D1- D2) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the individual factors of: "education in ethics should start from school" (D1) and "religious and moral education is important in setting high ethical standards" (D2); so as to improve ethics in the industry.

7.6.4.3 Professional training factors

Table 7.6.21 presents the professional training factors.

Table 7.6.21: Professional training factors

No.	Statement
D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.
D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.
D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.

The results of One Way ANOVA test show no significant difference between professional training factors (D3 - D5) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all

range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the professional training factors of "ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed" (D3), "the present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed" (D4), and "there should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year" (D5); so as to improve ethics in the industry.

7.6.4.4 Organisational factors

Table 7.6.22 presents the organisational factors.

Table 7.6.22: Organisational factors

No.	Statement
D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by.
D10	The company's leaders should serve as role models to act ethically.
D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.
D13	Whistle blowers to be better protected and more highly regarded. (*Whistle blowing is the act of an employee, informing higher management or the public of unethical or illegal practice by an employee or supervisor)*
D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.
D15a	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, how do you rate the following initiatives in a company/organisation? - Appointing an "Ethics Officer"
D15b	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, how do you rate the following initiatives in a company/organisation? - Creating an "Ethics Department/Office"

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.6.23 show significant difference: $p < 0.05$ for factor: "whistle blowers to be better

protected and more highly regarded" (D13): p = 0.015. From the Tukey test analysis, the results show significant difference: p < 0.05, for the pair of public client and contractor (p = 0.011). The other pairs show no significant difference: p > 0.05. From the descriptive analysis, public clients (mean = 1.86) have the highest preference on "whistle blowers to be better protected and more highly regarded" than those from the contractor organisations (mean = 2.23). It is a common perception that ethical wrongdoings are mostly related to government departments, and it is expected that whistle blowers will come forward to report about their ethical wrongdoings. However, this result indicates that it is the public clients, who represent the government, who are keener for whistle blowers to play a part in improving ethics, and, that they are better protected and more highly regarded, whenever there are reports on ethical wrongdoings by any participant in the industry (including themselves).

Except for statement D13, the results of One Way ANOVA test show no significant difference between the majority of organisational factors against types of organisation: p > 0.05. This shows that respondents from all types of organisations; whether public clients, private clients, consultants and contractors have similar perceptions on the organisational factors to improve ethics in the industry.

Table 7.6.23: One-Way ANOVA test results: Organisational factors against type of organisation

ANOVA

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
D13	Between Groups	5.935	3	1.978	3.554	**0.015**
	Within Groups	180.917	325	0.557		
	Total	186.851	328			

Multiple comparisons: Tukey HSD

	Organisational factors	**(I) Type of Organisation**	**(J) Type of Organisation**	**Significance**
D13	Whistle blowers to be better protected and more highly regarded.	**Public client**	Private client	0.870
			Consultant	0.920
			Contractor	**0.011**

Table 7.6.23 (continued)

Descriptives

	Type of organisation	Mean	Standard deviation
D13	Public client	**1.86**	0.756
	Private client	1.95	0.694
	Consultant	1.93	0.671
	Contractor	**2.23**	0.871

With regards to years of working experience, the results of One-Way ANOVA test from Table 7.6.24 show significant difference: $p < 0.05$ for factor D12: "better remunerations, incentives and working environment so as employees are comfortable and committed": $p = 0.028$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of respondents with experience of 16 - 20 years and with i) 2 - 5 years ($p = 0.016$) and ii) 11 - 15 years ($p = 0.027$). From the descriptive analysis, as compared with others, respondents with experience of 16 - 20 years (mean = 2.07) have the lowest perception on statement D12; and have significant difference with those with: i) 11 - 15 years (mean = 1.62) and ii) 2 - 5 years (mean =1.61) who also have the highest perception. This suggests that employees who are more experienced (16 -20 years) are least agreeable about "better remunerations, incentives and working environment so as employees are comfortable and committed", as ways to improve ethics in the organisation, which may lead to improved ethics in the industry. It could be that the seniors are quite reluctant to provide better remunerations, etc., in their organisation, since they are normally the management who decides on these matters, which could affect the company's cost and ultimately their profit margin.

Except for statement D12, the results of One Way ANOVA test show no significant difference between the majority of organisational factors against working experience: $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the organisational factors to improve ethics in the industry.

Table 7.6.24: One-Way ANOVA test results: Organisational factors against years of working experience

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
D12	Between Groups	5.377	5	1.075	2.542	**.028**
	Within Groups	136.617	323	.423		
	Total	141.994	328			

Multiple comparisons

Tukey HSD

	Organisational factors	(I) Years of experience	(J) Years of experience	Significance
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.	**16 - 20 years**	less than 2 years	.138
			2 - 5 years	**.016**
			6 - 10 years	.064
			11 - 15 years	**.027**
			More than 20 years	.368

Descriptives

	Years of experience	Mean	Standard deviation
C12	less than 2 years	1.64	.621
	2 - 5 years	**1.61**	.583
	6 - 10 years	1.67	.634
	11 - 15 years	**1.62**	.644
	16 - 20 years	**2.07**	.766
	more than 20 years	1.77	.724

7.6.4.5 Industry factors

Table 7.6.25 presents the industry factors.

Table 7.6.25: Industry factors

No.	Statement
D7	There should be a 'Construction Industry' standard Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.
D8	Existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".
D9	The provisions in **D8** above should be stated in contracts and apply to anyone hired to design and construct the project.

The results of One Way ANOVA test show no significant difference between industry factors (D7 - D9) against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all range of years of working

experience, from less than 2 years to more than 20 years, have similar perceptions on the industry factors of "there should be a 'construction industry' standard Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by" (D7), "existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work" (D8), and "the provisions in D8 above should be stated in contracts and apply to anyone hired to design and construct the project" (D9); to improve ethics in the industry.

7.6.4.6 System and procedure in the construction industry

System and procedure factors to improve ethics in the construction industry are divided into five sub-components as in Table 7.6.26. The analysis of these sub-components is dealt one by one.

Table 7.6.26: System and procedure in the construction industry

Statement No.	Sub-components
D16 - D21	Procurement and tendering practice
D22 - D28	Site safety
D29 - D31	Quality of work
D32 - D34	Workmanship of work
D35 - D36	Timely payment

7.6.4.7 Tendering and procurement practice

Table 7.6.27 presents the tendering and procurement practice factors.

Table 7.6.27: Tendering and procurement practice factors

No.	Statement
D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.
D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.
D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.
D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.
D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exist conflict of interest (for example, a relative) towards any of the parties bidding for contracts.
D21	Blacklist companies practising unethical practices.

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.6.28 show significant difference: $p < 0.05$ for factor D21, "blacklist companies practising unethical practices" against type of organisation: $p = 0.002$. From the Tukey test analysis, the results show a significant difference: $p < 0.05$ for the pairs of contractor and public client ($p = 0.010$); contractor and private client ($p = 0.008$); and, contractor and consultant ($p = 0.005$). From the descriptive analysis, all the other organisations have higher preference on "blacklist companies practising unethical practices"; that is, public clients (mean = 1.59), private client (mean = 1.54) and consultants (mean = 1.56) than those from the contractor organisations (mean = 2.00). This shows that contractors have lowest preference on this particular factor as compared to the other types organisations. This may be due to their uneasiness and retaliations of being blacklisted for any ethical wrongdoings, since it may be directly impact on them.

Except for factor D21, the results of One Way ANOVA test show no significant difference between the majority of tendering and procurement practice factors against types of organisation: $p > 0.05$. This shows that respondents from all types of

organisations; whether public clients, private clients, consultants and contractors have similar perception on the procurement and tendering practice factors to improve ethics in the industry.

Table 7.6.28: One-Way ANOVA test results: Tendering and procurement practice against type of organisation

ANOVA

		Sum of Squares	df	Mean Square	F	Significance
D21	Between Groups	10.575	3	3.525	5.033	**0.002**
	Within Groups	227.613	325	0.700		
	Total	238.188	328			

Multiple comparisons:Tukey HSD

	Tendering and procurement practice	(I) Type of Organisation	(J) Type of Organisation	Significance
D21	Blacklist companies practising unethical practices.	**Contractor**	**Public client**	**0.010**
			Private client	**0.008**
			Consultant	**0.005**

Descriptives

	Type of organisation	Mean	Standard deviation
D21	Public client	**1.59**	0.754
	Private client	**1.54**	0.812
	Consultant	**1.56**	0.715
	Contractor	**2.00**	1.090

With regards to working experience, the results of One Way ANOVA test show no significant difference between procurement and tendering practice factors (D16 - D21) against years of working experience: $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perception on the tendering and procurement practice factors of pre - qualification (D16), negotiated tendering (D17), open tendering (D18), contractor must be financially, operationally, and morally responsible in contract awards (D19), declaration statement (D20) and blacklisting companies (D21); to improve ethics in the industry.

7.6.4.8 Site safety

Table 7.6.29 presents the site safety factors.

Table 7.6.29: Site safety factors

No.	Statement
D22	Require all workplaces to conduct risk assessment and site management plans.
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.
D24	Code of ethics should stress the importance of safety.
D25	Ban contractors with bad safety records from tendering projects.
D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety.
D27	Safety criteria should be standardised as guidelines for all concerned.
D28	Safety training and education to made compulsory for all concerned.

With regards to types of organisation, the results of One-Way ANOVA test from Table 7.6.30 show significant difference: $p < 0.05$ for factor D23: "stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management": $p = 0.003$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of contractor with: i) public client ($p = 0.018$), ii) private client ($p = 0.011$) and iii) consultant ($p = 0.006$). From the descriptive analysis, all the other organisations surveyed have higher preference on "stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management"; that is, public clients (mean = 1.80), private client (mean = 1.75) and consultants (mean = 1.77) than those from the contractor organisations (mean = 2.09). This shows that contractors have lowest preference on this site safety factor as compared to the other types of organisations. This result is not unexpected as it is the contractors who will be mostly be affected by this strict measure.

The results of One-Way ANOVA test from Table 7.6.30 show significant difference: $p < 0.05$ for factor D25: "ban contractors with bad safety records from tendering projects": $p = 0.001$. From the Tukey test analysis, the results show significant

difference: $p < 0.05$, for the pairs of contractor with: i) public client ($p = 0.001$); and, ii) consultant ($p = 0.004$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, the public clients (mean = 1.57) and consultants (mean = 1.62) have a higher preference to "ban contractors with bad safety records from tendering projects" than those from the contractor organisations (mean = 2.00). This result is also not unexpected as this measure is directly targeting the contractors.

The results of One-Way ANOVA test from Table 7.6.30 show significant difference for factor D28: "safety training and education to be made compulsory for all concerned": $p = 0.048$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pair of contractor and consultant ($p = 0.032$). The other pairs do not indicate any significant difference: $p > 0.05$. From the descriptive analysis, as compared with other organisations, the consultants (mean = 1.56) have the highest perception on "safety training and education to made compulsory for all concerned" than the contractors, which have the lowest perception (mean = 1.81).

Table 7.6.30: One-Way ANOVA test results: Site safety factors against type of organisation

ANOVA		**Sum of Squares**	**df**	**Mean Square**	**F**	**Significance**
D23	Between Groups	5.364	3	1.788	4.671	**0.003**
	Within Groups	124.417	325	0.383		
	Total	129.781	328			
D25	Between Groups	8.424	3	2.808	5.485	**0.001**
	Within Groups	166.385	325	0.512		
	Total	174.809	328			
D28	Between Groups	2.815	3	0.938	2.662	**0.048**
	Within Groups	114.577	325	0.353		
	Total	117.392	328			

Table 7.6.30 (continued)

Multiple comparisons: Tukey HSD

	Site safety	(I) Type of Organisation	(J) Type of Organisation	Significance
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	**Contractor**	**Public client**	**0.018**
			Private client	**0.011**
			Consultant	**0.006**
D25	Ban contractors with bad safety records from tendering projects.	**Contractor**	**Public client**	**0.001**
			Private client	0.062
			Consultant	**0.004**
D28	Safety training and education to made compulsory for all concerned.	**Contractor**	Public client	0.154
			Private client	0.278
			Consultant	**0.032**

Descriptives

	Type of organisation	Mean	Standard deviation
D23	Public client	**1.80**	0.615
	Private client	**1.75**	0.560
	Consultant	**1.77**	0.633
	Contractor	**2.09**	0.654
D25	Public client	**1.57**	0.644
	Private client	1.69	0.748
	Consultant	**1.62**	0.648
	Contractor	**2.00**	0.834
D28	Public client	1.62	0.551
	Private client	1.63	0.601
	Consultant	**1.56**	0.574
	Contractor	**1.81**	0.666

The results of One Way ANOVA test show no significant difference between the other factors of site safety factors against types of organisation: $p > 0.05$. This shows that respondents from all types of organisations; whether public clients, private clients, consultants and contractors have similar perceptions on the site safety factors to improve ethics in the industry. However, significant difference was shown between contractors and other types of organisations on the factors of D23 (stiffer fines), D25 (banning contractors) and D28 (training and education). It could be due to the fact that site safety is directly connected to the contractor' work and they may feel that these factors seem to be targeting them, as compared to other industry players.

With regards to working experience, the results of One Way ANOVA test show no significant difference between site safety factors (D22 - D28) against years of working

experience: $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the site safety factors: risk assessment and site management plans (D22), stiffer fines and stringent regulatory procedures (D23), code of ethics (D24), banning contractors with bad safety records (D25), campaigns to raise awareness of importance of workplace safety and, employers and workers to take responsibility for workplace safety (D26), safety criteria should be standardised as guidelines (D27), and safety training and education to made compulsory (D28); to improve ethics in the industry.

7.6.4.9 Quality of work and workmanship

Table 7.6.31 presents the quality of work and workmanship factors.

Table 7.6.31: Quality of work and workmanship factors

No.	Statement
	Quality of work
D29	The client should be more involved in the design and construction process.
D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.
D31	Concentrate on efforts to create quality culture within each organisation.
	Workmanship
D32	Reduce the number of foreign workers who normally lack trade skills
D33	In-house training in trade skills for all workers, including foreign workers
D34	The government to provide incentives to help employers to invest in training programmes

The results of One Way ANOVA test show no significant difference between the quality of work (D29 - D31) and workmanship (D32 - D34) factors, against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on quality of work and workmanship factors to improve ethics in the industry. Quality of work factors are: more client involvement in design and construction process (D29), compulsory benchmarking tools (D30), and

creating quality culture (D31); and workmanship factors are: reduce the number of foreign workers (D32), in-house training in trade skills for all workers (D33), and the government to provide incentives (D34).

7.6.4.10 Timely payment

Table 7.6.32 presents the timely payment factors.

Table 7.6.32: Timely payment factors

No.	Statement
D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame.

With regards to type of organisation, the results of One-Way ANOVA test from Table 7.6.33 show significant difference for factor D36: "enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame": $p = 0.004$. From the Tukey test analysis, the results show significant difference: $p < 0.05$, for the pairs of private client with: i) consultant ($p = 0.017$) and ii) contractor ($p = 0.017$). The other pair does not indicate any significant difference: $p > 0.05$. From the descriptive analysis, the contractor (mean = 1.83) have a higher preference on "enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame" than the private clients (mean = 2.2.5) and the consultants (1.86). The results indicate that contractors are keener on this since they are at the receiving end for payment.

Except for statement D36, the results of One Way ANOVA test show no significant difference between the other timely payment factor: "direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary" (D35) against types of organisation: $p > 0.05$. This shows that respondents from all types of

organisations, whether public clients, private clients, consultants and contractors have similar perception on this timely payment factors to improve ethics in the industry.

Table 7.6.33: One-Way ANOVA test results: Timely payment factors against type of organisation

ANOVA

		Sum of Squares	df	Mean Square	F	Significance
D36	Between Groups	9.019	3	3.006	4.503	**0.004**
	Within Groups	216.981	325	0.668		
	Total	226.000	328			

Multiple comparisons: Tukey HSD

	Timely payment	(I) Type of Organisation	(J) Type of Organisation	Sig.
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame	**Private client**	Public client	0.714
			Consultant	**0.017**
			Contractor	**0.017**

Descriptives

	Type of organisation	Mean	Standard deviation
D36	Public client	2.11	0.823
	Private client	**2.25**	0.969
	Consultant	**1.86**	0.725
	Contractor	**1.83**	0.780

With regards to working experience, the results of One Way ANOVA test show no significant difference between timely payment factors (D35 and D36) against years of working experience: $p > 0.05$. This shows that respondents from all range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on the timely payment factors of direct payment policy to sub-contractors and suppliers (D35) and enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame (D36); to improve ethics in the industry.

7.6.4.11 Other components

7.6.34 presents other components to improve ethics in the construction industry. Their analysis will be dealt with one by one.

Table 7.6.34: Other components to improve ethics in the construction industry

No.	Component No.	Components
D37 - D39	6	Environmental ethics
D40 - D41	7	Legislative enforcement
D42 - D43	8	Accountability and customer satisfaction

Table 7.6.35 presents the environmental ethics, legislative enforcement and accountability and customer satisfaction factors.

Table 7.6.35: Environmental ethics, legislative enforcement and accountability and customer satisfaction factors

No.	Statement
	6. Environmental ethics
D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.
D38	Project information should be shared with the public to obtain their perspectives regarding the project.
D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations.
	7. Legislative enforcement
D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.
D41	An "ombudsman" service for the construction industry should be appointed by the legislative body. *(Function of "ombudsman" is to receive, investigate and report on complaints received of unethical practise within the construction industry)*
	8. Accountability and customer satisfaction
D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.
D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).

The results of One Way ANOVA test show no significant difference between the factors of environmental ethics (D37- D39); legislative enforcement (C40 - D41); and accountability and customer satisfaction (D42 - D43); against type of organisation and years of working experience: $p > 0.05$. This shows that respondents from all types of organisations, whether public clients, private clients, consultants and contractors; and all

range of years of working experience, from less than 2 years to more than 20 years, have similar perceptions on environmental ethics; legislative enforcement; and accountability and customer satisfaction as factors to improve ethics in the industry. This could be due to their similar perceptions on factors that may involve communication with the public; in particular to environmental ethics, and accountability and satisfaction.

7.6.4.13 Summary of One - way ANOVA analysis: Part D

One - way ANOVA analysis: Part D is carried out between the eight components of factors to improve ethics against the two demography profiles: type of organisation and years of working experience in the construction industry. The above discussion detailed the significant difference or no significant difference between the dependent variables in these components against the demography profiles.

Table 7.6.36 shows the summary of the one - way ANOVA analysis between the said components against demography profile.

Table 7.6.36: Summary of One - way ANOVA analysis - Part D

Statement No.	Component No.	Dependent variables: Components /Statements	Independent variables	Significant difference / No significant difference
D1 - D2	**1**	**INDIVIDUAL FACTORS**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D3 – D5	**2**	**PROFESSIONAL TRAINING FACTORS**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D7 – D9	**3**	**INDUSTRY FACTORS**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D6, D10-D15a,b	**4**	**ORGANISATIONAL FACTORS**		
D13		Whistle blowers to be better protected and more highly regarded.	A8: Type of organisation	**Significant difference** Respondents from public clients and contractors
D12		Better remunerations, incentives and working environment so as employees are comfortable and committed.	A9: Years of working experience in the construction industry	**Significant difference** Respondents with experience of 16 - 20 years and with i) 2 - 5 years, and ii) 11 - 15 years.
D16 –D36	**5**	**SYSTEM AND PROCEDURE IN THE CONSTRUCTION INDUSTRY**		
D16 - D21		**Tendering and procurement practice**	A9: Years of working experience in the construction industry	**No significant difference**
D21		Blacklist companies practising unethical practices.	A8: Type of organisation	**Significant difference** Respondents from contractors with: i) public clients, ii) private clients and iii) consultants.

Table 7.6.36: Summary of One - way ANOVA analysis - Part D (continued)				
Statement No.	**Component No.**	**Dependent variables: Components /Statements**	**Independent variables**	**Significant difference / No significant difference**
D22 - D28		**Site safety**	A9: Years of working experience in the construction industry	**No significant difference**
D23		Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	A8: Type of organisation	**Significant difference** Respondents from contractors with: i) public clients, ii) private clients and iii) consultants.
D25		Ban contractors with bad safety records from tendering projects.	A8: Type of organisation	**Significant difference** Respondents from contractors with: i) public clients and ii) consultants.
D28		Safety training and education to be made compulsory for all concerned.	A8: Type of organisation	**Significant difference** Respondents from contractors and consultants.
D29 - D31		**Quality of work**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D32 - D34		**Workmanship**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D35 - D36		**Timely payment**	A9: Years of working experience in the construction industry	**No significant difference**
D36		Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame	A8: Type of organisation	**Significant difference** Respondents from private clients with i) consultants and ii) contractors
D37 - D39	**6**	**ENVIRONMENTAL ETHICS**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**
D40 - D41	**7**	**LEGISLATIVE ENFORCEMENT**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**

Table 7.6.36: Summary of One - way ANOVA analysis - Part D (continued)

Statement No.	Component No.	Dependent variables: Components /Statements	Independent variables	Significant difference / No significant difference
D42 - D43	**8**	**ACCOUNTABILITY AND CUSTOMER SATISFACTION**	A8: Type of organisation	**No significant difference**
			A9: Years of working experience in the construction industry	**No significant difference**

7.6.5 Survey results: Development to the framework of factors to improve ethics in the construction industry

Following analysis on Part D in the questionnaire survey, the results of factors to improve ethics are subsequently adopted into the conceptual framework in Figure 5.1 in Chapter 5. Figure 7.1 shows this development to the framework. In this figure, the survey results are applied into the eight components according to their ranking of importance by mean score, as per results in Table 7.6.15, which are individual factors (rank 1, mean = 1.45), industry factors (rank 2, mean = 1.72), system and procedure in the construction (rank 3, mean = 1.88), legislative enforcement (rank 4, mean = 1.89), accountability and customer satisfaction (rank 5, mean = 1.94), professional training factors (rank 6, mean = 1.95), organisational factors (rank 7, mean = 1.99) and lastly, environmental ethics (rank 8, mean = 2.02). The sub-components in each component are also ranked and rearranged according to their importance by mean score as analysed before.

7.6.6 Summary

The 329 usable questionnaires representing 33% usable response rate were coded and SPSS was used as the tool for data analysis. Data entry was carried out for the questionnaires whereby errors and missing values were checked and rectified before performing data analysis. Analysis is then carried on the data collected from Parts A, B, C and D of the questionnaire survey.

In Part A of the questionnaire, background of the respondents is analysed using frequencies for different demographic and career profiles. The results of the analysis show that the respondents represent a mixed group of maturity of age; the majority has basic undergraduate education from the quantity surveying and civil engineering

profession; though, more than half of the respondents are not registered with any of their relevant professional board. In addition, majority of respondents are senior and middle management in their respective organisations. Furthermore, the respondents present a good distribution of public clients, private clients, consultants and contractors organisations. They also have good exposure in the construction industry; in terms of years of working experience and scope of work that they are involved. Hence, the background of respondents provides reliability to the research results.

The second analysis is the test of reliability for i) the level of understanding the importance of ethics and standards of ethics (Part B); ii) the occurrence of ethical issues, the enforcement issue and effects of unethical practice to the industry (Part C); and iii) importance of factors to improve ethics in the industry (Part D). The Cronbach's coefficient alpha (α) values for these three parts are above 0.7 level, which implies that perceptions of the respondents are reliable and consistent.

The third analysis is the descriptive statistics for Part B, C and D. For Part B1, results revealed that the respondents as individuals, construction professionals and employees in organisations understand the importance of ethics. The inquiry in B2 on standard of ethics shows a good standard of ethics among the respondents as construction professionals concerning the criteria of upholding ethics in project performance; and priority of interest to clients when in ethical dilemmas and decision making during work. In addition, standard of ethics of construction organisations in Malaysia is also good. However, the respondents perceive a low overall standard of ethics in the industry. In conclusion, the results show a relatively good ethical background of the construction professionals and organisation, but not for the overall standard of ethics of the industry in Malaysia. Therefore, it is apparent that a framework should be developed

to improve ethics in the construction industry in Malaysia, which is the main aim of this research.

The descriptive statistics for Part C on ethical issues show that the respondents agree on the occurrence of 42 ethical issues in the five components of pre-contract, construction, post-contract, environmental and other issues. On the enforcement issue, there exist lack of effective reporting procedures and enforcement for unethical practices by the relevant parties. Finally, the effects of unethical practice are wide-ranging, from giving the industry a bad image to affecting the interest of young generation into industry. Hence, this further reinforces the need for a framework to improve ethics in the industry.

The descriptive statistics for Part D on factors to improve ethics show that the respondents agree on all the 44 factors in the eight components of individual, professional training, industry, organisational, system and procedure in the industry, environmental ethics, legislative enforcement, and accountability and customer satisfaction.

Further analysis is the Analysis of variance - One-Way ANOVA conducted to investigate whether there are significant differences on the perceptions between the ethical background in the construction industry in Part B; that is, the two components of understanding the importance of ethics and standard of ethics; against appropriate demography profiles of the respondents. For example, concerning standard ethics of the organisation, analysis was carried out between the statements on the ethical background of the organisations; against the respondents' position in organisation and type of organisations; due to relevancy of these demographic profiles of respondents' capacity as employees in organisations.

One-way ANOVA analysis is also conducted to consider any significant differences on the perceptions between the ethical issues in Part C and factors to improve ethics in Part D; against the demography profiles of type of organisation and years of working experience in the industry. Comparison with type of organisations is necessary as respondents from public clients or private clients, consultants and contractors may have different perceptions on the ethical issues and factors to improve ethics due to their different objectives for completion of projects. As for years or working experience, the length of exposure to construction projects may result in different perceptions by the respondents on the said matters under investigation.

Finally, the results of analysis of factors to improve ethics in Part D of the questionnaire are adopted into the conceptual framework and this development is shown in Figure 7.1. In this figure, the components and sub-components identified in the framework as formulated from the literature review and industry input from the pilot interviews are ranked according to their importance. These results statistically confirm and reinforce their importance to the framework which has provided an established framework to improve ethics in the construction industry.

Following data analysis and discussion of results in this chapter, the last step in the research process is to validate the framework with industry experts. This process and its outcome are described in the next chapter.

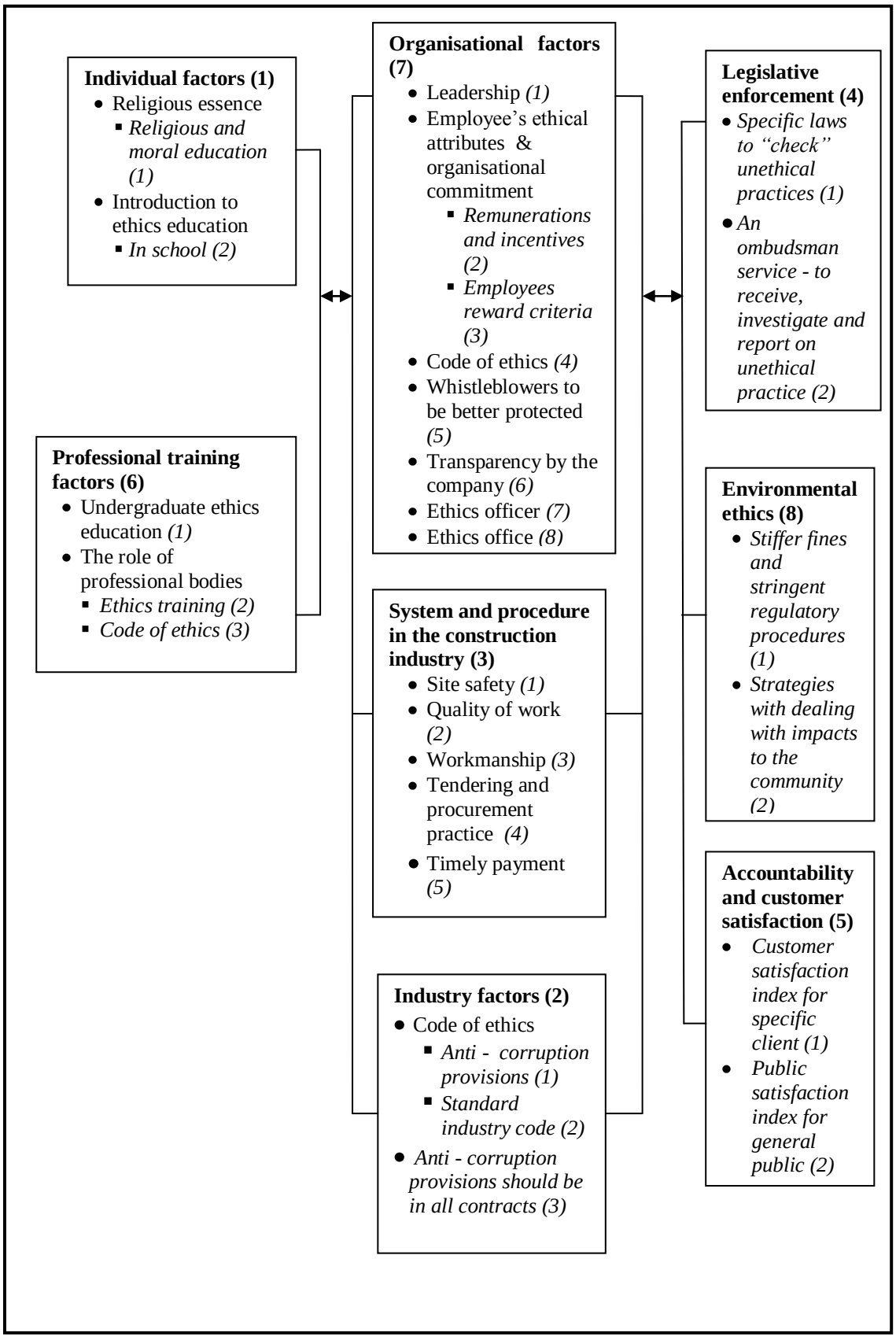

Figure 7.1: Survey results: Ranking of factors to improve ethics in the construction industry

CHAPTER 8

INDUSTRY VALIDATION

8.1 Introduction

This chapter explains the validation approach for the framework of factors to improve ethics. The validation phase which is the final and Phase 4 of the research process is to decide whether the objective of the research has been achieved, and, if it is accepted by those who are affected by the research topic. It is pursued through interviews with industry's expert and practitioners and its outcome is discussed in this chapter.

8.2 Background of validation interview

8.2.1 Objectives

The objectives of this task include:

- to validate the layout of the framework,
- to validate the relevance and importance of the components and sub-components of the factors identified,
- to validate whether the framework developed can contribute to industry, and
- to validate whether the framework is recommended to be adopted by the industry.

8.2.2 Scope and limitations

In order to gain representative view from the industry, semi structured interviews were conducted with six experts who have wide experience and exposure in relation to ethics in the industry. Their background and experience are outlined in Table 8.1. Their criteria for selection were:

- they represent higher management professionals from the industry players, from both the public and private sector;
- all the respondents have more than 20 years working experience;

- all have extensive experience in a variety of project settings and contract types, and work locations;
- except for the respondent from Institute Integrity Malaysia (Respondent 5), all respondents have an education background in related construction and engineering field and represents various industry players, i.e., public client, consultant, contractor, Construction Industry Development Board (CIDB) and professional body.

The interviews were conducted individually with the respondents during office hours at their offices and took an average of one and a half hours. Generally, all the respondents have good spoken English, and all, except one (Respondent 3) have been educated in the UK.

From the researcher's interview sessions, it is revealed that all the respondents are very passionate about good ethics and advocate it strongly in their organisations and expect it to be the same for the industry. This shows that ethical leadership role model is present in their organisations. However, Respondent 3 mentioned that the challenge is to instil good ethics in their work practice to their employees, especially so to their "ground staff" or site staff who are quite "distant" in terms of communication with the main office.

The validation interviews were performed using i) the framework of questions in Table 8.2, ii) the framework of factors in Figure 8.1, and to be read together with iii) factors to improve ethics from D1-D43 in Table 8.3 as in Appendix 5. All these three particulars are enclosed and submitted to the respondents during the interviews to obtain feedback or judgement on various aspects of the framework and the factors incorporated in it.

Table 8.1: Background and experience of respondents for validation interview

No.	Designation	Organisation	Professional discipline	Education	Experience
1.	General manager, Headquarters, Kuala Lumpur	Public client - Public Works Department (PWD)	• Quantity surveying • Registered quantity surveyor with Board of Quantity Surveyors Malaysia (Regd. QS)	• Bsc. Quantity Surveying (UK) • Msc. Construction Management (University Science Malaysia) • LLB in Law (University of Malaya)	• Over 20 years of experience. • Heads the quantity surveying section on contractual administration for public works projects in Malaysia. • Ethics committee member in Board of Quantity Surveyors Malaysia. • Working committee for the publication of : ▪ PWD 203-versions 2007 and 2010 Forms of Contract ▪ PWD 203-Facilities Management Forms of Contract • Has written a book; Design and build contracts in Malaysia. • Has given numerous lectures on legal issues in the industry and in the process of writing a book on this topic.
2.	Director	Consultant	• Architecture • Registered architect with Board of Architects Malaysia (Ar.)	• BA Architecture (UK)	• Over 20 years of experience. • Director of consultant architecture involved in designing and project management of housing, commercial and government buildings. • Committee member with Board of Architects Malaysia. • A visiting lecturer in a local university.
3.	Director	Contractor - Registered as Class A	• Civil engineering • Registered engineer with Board of Engineers Malaysia (Ir.)	• Bsc. Civil Engineering (University Malaya) • Msc. Construction Management (Japan)	• Over 20 years of experience. • Previously worked with the Public Service Department in design and project management of government projects and Kuala Lumpur International Airport (KLIA) construction. • He then became the project manager for one of the most successful Bumiputra contractor in Malaysia, in charge of projects ranging from schools, hospitals, government buildings, highways, interchange; local and overseas. • Presently, he owns a successful construction company with diversified projects reflecting his vast experience and knowledge in the industry.

Table 8.1: Background and experience of respondents for validation interview (continued)					
No.	**Designation**	**Organisation**	**Professional discipline**	**Education**	**Experience**
4.	Director	Regulatory body - CIDB	• Quantity surveying • Registered quantity surveyor with Board of Quantity Surveyors Malaysia (Reg. QS.)	• Bsc. Quantity Surveying (UK)	• Over 20 years of experience • Previously worked with the Public Service Department in contract administration for government projects. • Presently, she is with CIDB, the regulatory body for contractors and has been with the Ethics Department, coordinating and regulating procedures and training for enhancement of ethics for contractors.
5.	Head Director	Government body - Institute Integrity Malaysia	• Social studies	• Bsc. Public Administration • MBA (UK)	• Over 20 years of experience • Previous experience include working with the Treasury Department, Ministry of Finance involved with procurement policies for contract services; Public Works Department involved with government projects; and Ministry of Science and Technology Malaysia • He has been with Institute Integrity Malaysia since it was set up and is in charge of ethics training programmes for the public sector.
6.	Board Member	Professional body	• Civil engineering • Registered engineer with Board of Engineers Malaysia (Ir.)	• Bsc. Civil Engineering (UK) • Msc Project Management (UK) • PhD (UK)	• Over 20 years of experience • Former president of Association of Consultant Engineers Malaysia (ACEM) which is a member of FIDIC • Director of a consultant engineering firm involved in designing and project management of housing, commercial and government buildings. • Active board member with Board of Engineers Malaysia and has visited several countries around the world to learn from their engineering counterparts.

Table 8.2: Framework of validation interview questions and results

Questions	Agree	Disagree
Q1: Layout of the framework		
a) Easy to understand and follow		
b) Practical		
Q2: Relevance and importance of components and sub-components		
i) Individual factors		
ii) Professional training factors		
iii) Organisational factors		
iv) System and procedure in the construction industry		
v) Industry factors		
vi) Legislative enforcement		
vii) Environmental ethics		
viii) Accountability and customer satisfaction		
Q3: Contribution of the framework to industry. Useful to:		
1. Construction professional		
2. Clients		
3. Consultants		
4. Contractors		
5. Educationalist		
6. Professional bodies		
7. Regulatory bodies		
8. Government		
9. Overall construction industry		
Q4: Recommendation for the framework to be adopted by the industry		
a) Without modification		
b) With modification		
Q5: Suggestions to improve the framework, in terms of factors from D1 - D43		

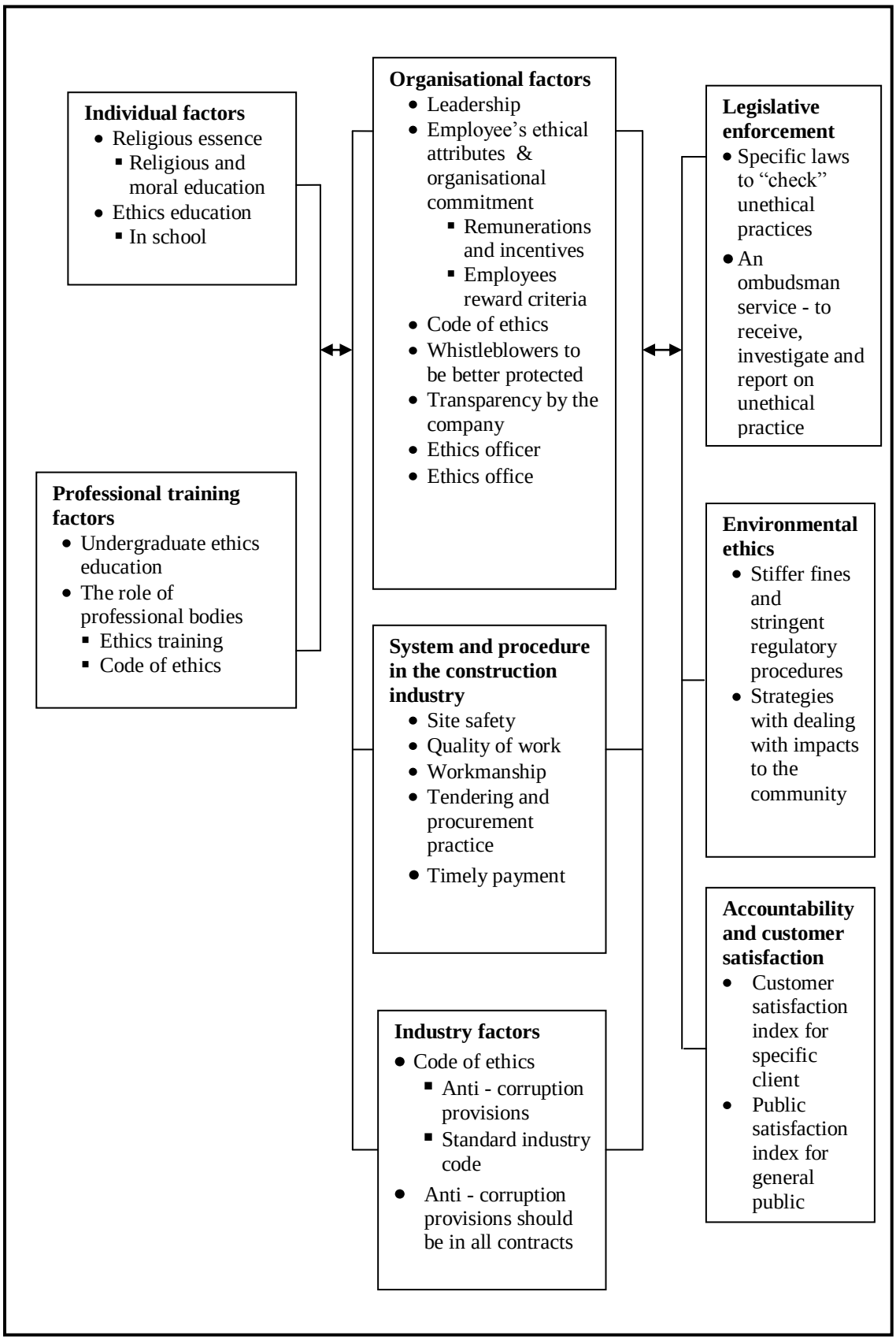

Figure 8.1: Framework of factors to improve ethics in the construction industry

8.3 Validation results and discussion

8.3.1 Perception on the framework

This section covers the following:

- validation on layout of the framework (question 1);
- contribution of the framework to industry (question 3);
- recommendation for the framework to be adopted by the industry (question 4); and,
- suggestions to improve the framework in terms of factors from D1- D43 (question 5).

On the layout, all the respondents (100%) agreed that the framework is easy to understand and to follow; and is also practical. On the contribution of framework to industry, all the respondents (100%) agreed that it is useful to the participants of the industry (construction professionals, clients, consultants, contractors, educationalist, professional and regulatory bodies), government and the overall construction industry. According to Respondent 1 from the public client organisation, *"the framework put forward (by the researcher) is in line with the government's agenda of transforming the nation"*.

On the recommendation for the framework to be adopted by the industry, five (84%) respondents agreed that it should be adopted without modification, and one (16%) respondent agreed that it should be adopted with some modification. The following are quotes from respondents. "*The construction industry is corrupted, money flows to corrupted individuals, which should be best spent for the people*" … "*the framework should be implemented by all parties concerned in the industry, with the hope of leading the industry to civility"* (Respondent 6). *"Your research is very relevant to the industry - we should be implementing all proposals from every angle, even though it will take time, but, you have started the ball rolling by identifying the relevant factors"*

(Respondent 3 - contractor). *"The framework is very useful; we would like to work with you in the future to adopt and implement a 'template' especially on the organisational factors that you have researched"* (Respondent 4 - CIDB). "*The framework illustrates not just the factors to improve ethics, but, it is as an 'ethics management program' which can be adopted by all concerned"* (Respondent 5 - Institute Integrity Malaysia)

As a whole, all the respondents agree that the framework was complete in terms of the factors to improve ethics from D1 - D43. There was only one suggestion to improve the framework; "*for public projects, the public also be should be part of the tender evaluation team, in order to show accountability and transparency*" (Respondent 6).

8.3.2 Relevance and importance of components and sub-components

This section covers the validation on the relevance and importance of components and sub-components of factors in the framework (question 2). All respondents (100%) agreed that the factors are *relevant* to improve ethics in the construction industry. The following section will discuss the interviews with the six respondents on the specific factors they raised and their importance.

8.3.2.1 Respondent 1 - public client

Respondent 1 said the "*most important factor is the foundation for an individual* (also ranked 1 in survey), and, *especially the religious essence - the divine law*"; and "*professional training factors, especially ethics training* (D5) *can reinforce the individual ethical attributes to achieve the agenda*". On organisational factors, "*employees' ethical attributes to be considered in reward criteria*" (D11) is a criterion that most organisations overlook, but "*really needs to be considered besides work output*". He also favoured "whistle blowers to be better protected and more highly

regarded" (D13) and "*as a good way curb unethical practice and improve ethics in organisations*". As a civil servant, he said it is important that this practice is adopted in their organisations as their projects are all government funded, and "*any party, especially the public should be able to voice their grouses freely on any ethical issue, since after all it is their interest that we should be our priority"*. With regards to accountability and customer satisfaction, he is "*sceptical whether satisfaction indexes* (D42 and D43) *really reflect the customers / public perceptions, as they can sway, depending on their moods*"; nevertheless, he agreed that "*there should be some kind of measurement to gauge the performance of their work and satisfaction index is a relevant tool*".

On system and procedure in the industry, he cited quality (D29 - D31) and workmanship (D32 and D33) as the most important factors since they are "*the most common ethical issues* (workmanship and quality issues were ranked 2 and 3 in the survey). He added that "*contractors as 'craftsmen' in the industry should do what they supposed to do, and not cut corners in order to maximise their profits*; *hence, the industry should concentrate more on efforts to overcome this issue"*. On the code of ethics by professional bodies (D4), organisations (D6) and "standard industry code", his view is that "*they act as the threshold ground norm*". As an Ethics Committee Member with the Board of Quantity Surveyors Malaysia, which deals with misconduct and malpractice of their members, his experience has shown that "*issues that occur are varied and may not be considered in these codes*". However, he agreed that "*they should be in place and treated as minimum guideline conduct that the relevant parties should abide to*".

8.3.2.2 Respondent 2 - consultant

As a consultant organisation, the respondent identified the most important components are organisational factors, especially the "*leadership factor*" (D10) and added that "*leaders in organisations set the trend for the employees actions to be ethical or not".* The consultants "*need to deliver what is required of them; even if it is for a smaller fee or when the client does not appreciate quality service*". He also added that "*no doubt that companies are business entities*"; however, "*in the quest for profit, they need to exercise social responsibility to clients and public*". He believes that "*good business ethics means safe business, and safe business means you will not be caught!"*

Another important component is the system and procedure in the industry, "*right from the procurement and tendering practice through to the construction supervision especially on site safety, quality and workmanship*" (D16 - D32), and agrees that "*more tangible efforts should be implemented on these issues*". He also lamented that, "*our industry is quite largely composed of contractors who have no experience or education background in construction or engineering, hence, not proficient in technical and contractual matters of the project";* adding that *"they are in this business to make money*". Thus, "*the selection procedures for contractors must be quality based as well as morally responsible*".

On environmental ethics, he said that "*fines and stringent procedures* (D39) *are relevant to curb environment issues, considering from his experience as an architect, the environment is often sacrificed for development".* He asked an ethical decision making question, "*are you prepared to walk away from a job, if the client is being unethical, for example, when the project will destroy or disrupt the environment?*" and

added that "*we have to educate the clients on public interest and protecting Mother Nature, and not only think of monetary gains".*

The respondent is also a visiting lecturer for architecture students in a local university. He pointed out that there is only one university in Malaysia that teaches ethics as part of their course in the built environment undergraduate course. He agreed that "*ethics education (D3) is as important as any other 'technical know - how'; and all universities should include it in their curriculum in order to produce a 'wholesome' graduate*".

8.3.2.3 Respondent 3 - contractor

The respondent agreed the most with the component of system and procedure in the industry; specifically the tendering and procurement practice (D16 - D21). From his experience as a contractor, he cited many instances where unethical practices occur from the initial stage of the project; hence, in order to improve ethics in the industry, "*it is most important to tackle this pre - contract issue first, because it has a "domino" effect on other issues*". For example, he cited low tendering practice by contractors in order to secure contract has resulted in cutting corners and low quality work. Also the "Ali - Baba" practice, "lobbying to secure contract" and "commissions to secure contract practice" "*has resulted in awarding contracts to those who are not technically competent to handle the job and lacking in construction techniques which has lead to delays and termination of the contract*". Hence, he agreed most with "pre-qualification (D16) and negotiated tendering (D17) to set a barrier for entry and limits tenderers who are only capable and responsible". He also agreed that "open tendering is not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost"(D18), in fact, he added that "*it should also apply to 'highly specialised projects', such as, hospitals and MRT (Mass*

rapid transit)". He stressed that "*these tendering practices are the best ways to secure the 'genuine contractor' in terms of technical capabilities and responsibilities for best quality and attitude"*; ultimately *"the client is paying what he wants*". As a very experienced professional engineer; from a civil servant working with Public Works Department (PWD), then as a contractor with one of the biggest '*Bumiputra'* (earliest habitants in Malaysia) construction company, and now, owning his own construction company, he aspires, "*I would like to produce a PhD standard of work equivalent to a high profit margin for my company*".

He also identified the importance of safety factors during construction as "*safety consideration is always given a secondary consideration, and the industry is not serious about it*". Hence "*all factors identified by you*" (the researcher*)* in this sub-component "*are relevant*", which are site management plans, stiffer fines, awareness campaigns, safety training and education etc. (D22- D28). However, he said, "*safety factors will be the toughest to implement, due to the work culture and practice*", nevertheless, "*we need to adopt and implement them*". On quality, he said "*workers in the industry are made up of ex-convicts, drug addicts and illegals who could not find any other job!*" reflecting the state of affairs of the workers in terms of skills and attitude. He emphasised "*there is a need to change their work culture, through compulsory quality standard procedure at site* (D30) *and also concentrated training* (D33) *(which will add cost to the contractors); hence, the government should play a major role"*. These factors are included by the researcher in her sub-component of quality of work and workmanship, in system and procedure in the industry.

8.3.2.4 Respondent 4 - Construction Industry Development Board (CIDB)

The respondent's works include registration and regulating contractors, and has been involved in championing ethics to contractors in Malaysia. She emphasised on code of ethics and said "*most professionals are bound by their professional bodies' code of ethics*; *however, very few construction companies have any kind of code of conduct for their employees"* (D6*)*. "*The code of conduct can be a guide and boundary for employees to act ethically and enhance ethics in the company from top to bottom*", however, "*leadership* (D10) *and management of the company should first instil ethics as an important aspect in their business dealings"*.

She said that for contractors, the most important component is organisational factors and agreed on the importance of sub-components "*transparency and the role of whistleblowers*" (D13) as the company's "*check and balance*". On legislative enforcement, she agreed that "*an ombudsman service specifically for the industry should be set up by the government*" (D41) as "*the industry is most exposed to corruption and other unethical practices.* This is mostly due to "*so many 'hands' involved right from design to the completion of the project*".

8.3.2.5 Respondent 5 - Institute Integrity Malaysia (IIM)

The respondent was part of the initial government team that set up Institute Integrity Malaysia, with the objective of enhancing ethics in public and private sector in Malaysia. On the framework of factors to improve ethics, he said it is "*a good effort which considers a 'whole' perspective of ethics in the construction industry*". He emphasised two components that are most useful, "*legislative enforcement"* (D40 and D41) *and "accountability and customer satisfaction*" (D42 and D43).

On legislative enforcement, he said "we *should have better and efficient implementation of enforcement - like the Singaporeans*". He cited many instances of ethical issues in the industry, "*especially during the tendering and procurement stage*", and agrees that "*construction industry needs specific laws and ombudsman service as it is plagued with unethical practices"*. On the seriousness of enforcement, he cited the former Chief Secretary to the Government, Tan Sri Mohd Sidek bin Haji Hassan, emphasised on the importance of enforcement, "*any wrongdoer ...you hang him…and you hang him high*", therefore, "*publicising and highlighting the punishment as an example to others so as to abstain from any wrongdoings*".

On accountability and customer satisfaction he said "*they are determining factors that influence the mind, affect the behaviour and ethical work practice of any individual or professional* person". It is very important "*for public servants to understand that we are not here to make money, instead, we are using public's money to complete the projects that we are entrusted to do"*. He added "*it could be more difficult for the private entity as their existent is about profits,* however, "*the underlying principle remains the same*".

8.3.2.6 Respondent 6 - professional body

As a board member in a professional body, he said that the way forward to improve ethics "*starts from the individual and professional himself*". He added that "*ethics education at school* (D1) *is relevant as platform for awareness towards ethics*" and, further "*ethics training by professional bodies* (D5*) will serve as occasional reminders to professionals on their social and ethical responsibilities to clients and society".* On the code of ethics of professional bodies; standard industry code of ethics and specifically on the anti-corruption provisions in contracts (D8) (he said that "*this is brave*"); legislation enforcement; and stiffer fines etc. in the industry, he said that "*they*

must be implemented fully from the ground staff to the top managers" and cited "*Singapore as a good example, where, with full implementation of the governing laws and severe punishment for misconduct, the country has reached near zero corruption level in the industry*". He agreed that "*for now, we need to be legislated and reprimanded like Singapore, in a way, forced by the law to be good!*" However, he added that, "*Hong Kong has moved even further ahead, where their industry has reached a level of self regulation; there are no specific laws to govern their actions, even by professional bodies*". "*All these are due to their sense of accountability*". These facts are obtained by the respondent through working discussions between the relevant professional bodies in Malaysia and the two countries.

He repeated on numerous occasions during the interview on the "*importance of accountability to customers, especially the public which should be the priority of all concerned*". With the "*right commitment and implementation*" of the framework of factors as put forward by the researcher, he hoped that "*ethics of construction professionals and industry players will be self regulatory in order to achieve the level of a civil society or civility*". He added that "*this is crucial as the services of industry will be liberalised by year 2012 where there will be competition with players from other countries for projects in Malaysia and overseas*". He concluded by saying "*think of not what you want, but what the public wants, at the end, you will get what you want!*"

8.4 Summary

This chapter discusses the final process in the research which is validation of the framework. The process of industry validation was important to gauge the perception of the framework in terms of its clarity and practicability; contribution and

recommendation for adoption to the industry. It was conducted through interviews with six experts representing varied industry participants.

The chapter outlines the background of validation process, with regards to the objectives of the validation exercise, which was to validate the framework developed, the scope and limitation as to the criteria for selection of the experts interviewed with regards to their background and the method used during the validation process. Further discussion on the results of the interviews covered the experts' perception on the layout of the framework, the usefulness, recommendation for adoption in the industry, and the relevance and importance of components and sub-components identified.

The industry validation was successfully carried out with affirmative feedbacks on the framework being developed. The validation process concluded that, 1) the layout of the framework is easy to understand and to follow; 2) the components and sub-components of the factors identified are relevant and important to improve ethics in the construction industry; 3) the framework is useful to all industry players and the industry in general; and most importantly, 4) and recommends that it to be adopted by the industry. These results are encouraging as the framework has been recognised as valuable contribution towards the improvement of ethics in the Malaysian construction industry and can be regarded as a platform for further research.

The following chapter is the finale of this research; where further recommendations and major conclusion on the research in general and the framework in particular, will be addressed and discussed in the concluding Chapter 9.

CHAPTER 9

CONCLUSIONS, RECOMMENDATIONS AND FURTHER RESEARCH

9.1 Overview of research

The aim of the research as elaborated in Chapter 1 was to develop a framework of factors to improve ethics in the construction industry which can be adopted by educationists, professional bodies, industry players and policy makers in Malaysia. This was done by identifying and formulating (in Chapters 3 and 5), valuating (in Chapters 6 and 7) and finally confirming the framework on its relevance and usefulness to the industry player (in Chapter 8).

In order to achieve the aim of research four research objectives were outlined:

1. To establish the ethical background of the construction industry by determining the understanding of the importance of ethics from the perspectives of an individual, a construction professional, and as an employee in a construction organisation.
2. To establish the ethical background of the construction industry by determining the standard of ethics of the construction professional, the construction organisation, and of the industry.
3. To identify ethical issues that occur in the different stages of construction projects.
4. To develop a framework of factors to improve ethics in the construction industry.

In order to meet the research aim and objectives, a research approach was carried out and explained in Chapter 4. The research process starts with preliminary interviews to evaluate the usefulness and attitudes on the research topic of ethics (in Chapter 5). The

research process then continued and undertook to identify ethical issues and to develop a framework of factors to improve ethics from current literature (in Chapters 2 and 3) and supplemented by industry input from pilot interviews (also in Chapter 5), then tested in questionnaire surveys (in Chapter 6), empirically evaluated and statistically confirmed (in Chapter 7) and finally, the framework was validated through interviews (in Chapter 8).

9.2 Conclusion

After undergoing the research process, the study has successfully achieved the research aim and objectives of the research. The conclusions are presented as follows.

9.2.1 The ethical background of the construction industry

The research established the ethical background of the industry as an initial inquiry of ethics in the industry. With regards to the understanding of the importance of ethics, the results show a good understanding from the perspectives of an individual, construction professional and as an employee in a construction organisation. With regards to standard of ethics, the results show a good standard of ethics of the construction professional and the organisations. However, results show that the overall standard of ethics of industry is low, which further reinforces the research aim.

Construction professionals are constantly under tremendous pressure to meet up with ethical standards and, at the same time, have to deal with the often conflicting goals of different project member and organisations or players in the project team. They normally work under temporary setting within a particular project, which means, in practice, setting up their own particular units to support ethical standards, which will undeniably face certain problems. Managing ethics in the industry is possible, but it is

no easy task. Hence, the various participants need to subscribe to a common understanding of the fundamental principles of ethics in the complicated pursuits of construction projects.

9.2.2 Identification of ethical issues

Results on the perception of the 49 ethical issues investigated have shown that, 42 ethical issues do occur in the industry. They occur during different stages of a construction project: pre-contract; construction; and post contract stage with issues relating to defective works on the workmanship and poor quality of materials. Activities in construction projects affect the environment directly and in many different ways; hence, the research has shown that environment issues that occur are varied from lack of proper protection against soil erosion to unnecessary cutting of trees or ground earth. There were also other issues that occur within any stage of the project, such as harassment issues between parties. All these activities have justified the public image of this industry as generally being a negative one. However, even when there are a myriad of ethical issues in the industry, it lacks reporting and enforcement procedures for unethical practices by the parties concerned, which should start from the top, which is the government, to the construction organisations themselves. All these testimonies reinforce the aim of this research, which is to develop a framework of factors to improve ethics in the industry.

Many of the long-standing ethical issues identified in this research will likely continue to be an important concern. It seems unlikely that fundamental characteristics of the industry, such as the predominance of small employers, short term contracting and temporary employment, multi-employer worksites and multi-cultural workforce will change significantly. While it is important to focus on ways to improve ethics in the

industry, it is also important to reserve resources to target "emerging issues." And while no one can predict the future, other potential emerging issues need to be watched.

9.2.3 A framework of factors to improve ethics in the construction industry

Ethics management is an indispensable part of construction projects and requires a well-planned program for its development and implementation. One way to operationalise such effort for improving ethics is by creating structural mechanisms for managing ethics, where, this research has successfully developed a framework of factors to improve ethics in the construction industry.

An important characteristic of the framework was the identification of the eight components to improve ethics in the industry which are: individual, professional training, organisational, industry, system and procedure, industry, environmental ethics, legislative enforcement, and, customer satisfaction and accountability. The research has identified 44 factors grouped under relevant sub-components of the eight components and results from the questionnaire survey have affirmed these factors. Further validation of the framework by industry's expert concluded that it is easy to understand and follow, useful, and has taken relevant and significant factors into consideration. The factors in the framework are summarised in the following section.

Individual factors involve the first stage in the process of acquiring ethical knowledge, awareness and ethical perspectives for an individual, which is to learn the basic principles of ethics. Early education in ethics at school can have an impact on individuals, who will be future construction professionals working in an organisation in the industry, since, the standard of conduct observed by its participating members are crucially important to the economic well-being of the nation. Besides education in

ethics, the research identified religious and moral education as equally important in order to enhance ethics of a person, since divine beliefs guide oneself towards a level of moral thinking and behaviour.

With regards to professional training factors, ethics education at undergraduate level is significant for setting the foundation of a professional together with input from professional bodies later in his professional life. There is a broad agreement that education has a role in preparing graduates for social responsibility by what it entails in the curricula. Moreover, higher education has an opportunity and responsibility to play a role on ethical issues in the industry by attempting to mould good ethics to its graduates. Also, in the pursuit of professional training, leadership is required from the professional bodies to develop a culture where ethical values and practice can evolve. An important criteria highlighted in this research is to review the professional codes of ethics, along with more emphasis on ethics CPD training.

Organisational factors have a critical role in mediating project outcomes, success and failure, and, the potential to be a "best ethical" organisation. Firstly, organisations should spearhead good ethics through the organisation's leadership. Leadership is vital in developing and raising the level of ethics of the organisation and to provide guidance to the employees so as to bring necessary changes in organisations.

As a check and balance ethics structure, all organisations should make a conscious decision to pursue the goal of having a corporate code of ethics. Code of ethics can demonstrate and reinforce the top management's support for ethical behaviour and help develop a favourable ethical climate and culture in the organisation. Other organisational roles include enhancing employee's commitment, where ethics and

values of employees should be the criteria for rewards and promotions besides work related performance. The research also revealed that efforts by the organisation towards ethical practice, with regards, specifically, to an ethics office or an ethics officer is less favourable. It is human nature to be apprehensive on our own ethical practices, whilst, in reality improving individual employees' ethical practices will improve and reflect on the overall organisation's ethical practice.

In order to foster an overall ethical environment, the industry factors identified that a standard industry code of ethics is considered necessary to be created, with specific anti-corruption provisions. It is also recommended that these provisions should be stated in all contracts for design and construction. In order to make it workable, willingness and commitment by the legislative government body to enforce it, is crucial.

System and procedure in the industry is another contributing factor in promoting good ethics is the industry. The decisive way for ethical procurement and tendering practice is to implement strict rules and regulations to the construction players. This can be achieved by blacklisting companies practicing unethical practice; and, on the awards of contract, a declaration statement is necessary when conflict of interest exist. In addition, pre-qualification and negotiated tendering should be adopted to set a barrier for entry and limits only tenderers who are capable and responsible.

During construction, safety awareness and campaigns; training and education; and strict regulations should harmonise together in order to improve ethics in safety standards at workplace. In addition, extreme measures should be taken to ban contractors with bad safety records from tendering. Furthermore, to create a national cohesiveness concerning site safety, government should take actions by setting unified safety policy

guidelines for the industry. As for improvement on quality of work, strategic and continuous approach should be adopted towards creating a quality culture and benchmarking strategies.

The structure of ethics management in the industry must be accompanied by enforcements, since there is no point in creating a carefully-drafted "rulebook" that is then ignored. Enforcement is a matter of increasing importance to everyone, since the research has revealed that the industry is associated with ethical issues. Hence, partiality towards legislative enforcement by government is necessary. The industry's ethical issues are unique to its own activities, therefore, specific laws imposed by the government to "check" unethical practices, together with the creation of an ombudsman for the industry is recommended in order to improve ethics. As such, leadership from the government is needed to monitor and enforce ethical behaviours and practices.

The research has identified two main agenda, community engagement and tight regulatory regimes on ways to improve environmental ethics in the industry. The industry's obligations should consider the willingness to include society in defining what the crucial choices are when balancing between the technological aspect of their projects and the effects it has on the society's environment. The industry and the community must engage in a dialogue to communicate and share common benefits or disbenefits with the aim of avoiding detrimental environmental effects. This may be precisely the form of societal interaction needed in the future. As the saying in a Malay proverb "it's too late now, the rice has turned into porridge", in situations where a project has already left an irreversible impact to the environment. The best we could do to respond to this environmental crisis is be more compliant and stringent in environmental polices in an effort to prevent future disasters.

Finally, benchmarking is the management tool for the future and the momentum it has gained over the years highlights the fact that benchmarking is applicable across organisations irrespective of their location, size or industry. The research has affirmed that professional judgements on ethics stems from responsibility towards customer and public, through the endorsement of "public and customer satisfaction" index to measure satisfaction and accountability.

9.3 Research contribution

9.3.1 Identification and categorisation of ethical issues

This research has successfully identified ethical issues that occur in the industry, specifically in the Malaysian context. The ethical issues are identified according to the different stages of a construction project during pre-contract, construction, and post contract; and includes other issues that are related to construction works, such as environmental issues. This approach can assist in identifying the more pertinent issues and at which stage it occurs during the project. This is a useful input to the industry since we can focus our attention on these pressing issues in the effort to improve ethics in the industry.

9.3.2 A framework of factors to improve ethics in the construction industry

Evidence of the prevalent ethical issues identified in this research has shown that we need to strategise ethics management in the industry. As a consequent to the need for changes in ethical behaviour, practices and procedures in the industry, the strategy advocated in this research is an integrated concept to improve ethics, relevant to ensure the ultimate goals of quality and economy in the industry. As Malaysia also is an investment hub with many multinational companies carrying out construction works,

the features developed need to be studied especially in the local context; as such, this research has taken into account the local characteristics of the industry in Malaysia.

The main contribution of this research is the completion of a framework of factors to improve ethics in the construction industry in Malaysia. The important underlying principle of the framework is a holistic and structured approach that will enable users to have an overall and thorough perspective of the relevant factors that must be considered. It serves as a working agenda applicable to individuals and professionals, educationists, professional institutions and industry associations, and industry players (clients, consultants, contractors) and the government.

The framework, as in Figure 8.1 in Chapter 8, has appropriately identified most of components and related sub-components according to the relevant players in the industry, which means that everyone concerned are aware of their responsibility and respective roles, in order to improve ethics. It starts with individual factors, which include the religious essence, and ethics education at school or elementary level; then moving to professional training factors, which include undergraduate ethics education at university, and ethics training and code of ethics by professional bodies. The next component is the work setting which can be the client, contractor or consultant organisations. The factors include among others; code of ethics and ethical leadership. Next, the framework has identified specific industry factors with regards to a standard code of ethics which everyone in the industry should abide to. Since the industry has its own work practice or procedures unique to its contractual and project management characteristics, the framework has considered the system and procedure distinctive to the industry. As such, the sub-components include the pre-contract stage of tendering and procurement, and, sub-components in the construction stage, which include, site

safety, quality of work, workmanship and timely payment. The framework will not be complete without legislative enforcement from the government, who can address ethical issues through its authoritarian functions by legislating and driving down statutory procedures. Another component which is considered indispensable to the framework is environmental ethics, since construction activities have an effect on the environment. The final component identified in the framework is frequently related to the concept of responsibility by industry participants towards those associated with the project, which is discharged mainly through accountability and customer satisfaction.

The research has provided useful input to the development of ethics. It is beneficial not only to the Malaysian construction industry, but, to other developing and developed countries alike; to progress the industry to face present and future challenges and developments, and issues of globalised economy in an endeavor to be competitive in the globalised market.

9.4 Limitation of research

The research was limited only to the development of a framework on suggestions or recommendations for factors necessary to improve ethics in the industry. What was excluded was how to implement them, as well as external resources and constraints that may be involved in their implementation. At the moment, this will be left to decision makers of the various industry participants to ascertain and decide on their strategies. Although it may not be ready to be implemented and adopted by the industry, the framework serves as a pioneering introduction to components and factors that are relevant which has been recognised through industry validation as potentially useful to the industry.

The research has identified eight components which incorporate related sub-components and 44 factors into the framework. Presently for this research it is comprehensive, but further suggestions may arise, due to different scope of work or specialisation or client needs, and changing external factors, like government policies and economic conditions. Even though the research has its limitation, the framework has taken a holistic approach to put forward recommendations to solve the prevalent issues in the industry as a whole and has provided an excellent platform to launch further research into these areas in the future.

9.5 Recommendations for the industry

As a result of this research and its findings, to effectively improve ethics, the following recommendations are made for the industry and practice.

9.5.1 Professional training factors

9.5.1.1 Undergraduate education

There is no doubt the need for heightened standards of ethics for all professionals in Malaysia. However, little attention is made on the crucial factor of the role of higher education in forming sustainable professional standards. Many challenges remain; most notably the need for the Malaysian construction and engineering faculties to accept greater responsibility for ethics education. Changes in accreditation criteria for the Malaysian construction schools, which make ethics education compulsory, will potentially elevate the prominence of instruction in ethics and societal context with the industry. An integrative approach should be considered in designing appropriate ethics curricula for the construction professionals. Reference and lessons should be emulated from engineering and construction schools overseas, and particularly their business schools, on the methods of teaching ethics.

Environmental issues were not given priority in education in construction related courses. This could be due to the misconception that construction is isolated from environmental effects which sometimes only become apparent over the years after construction works has completed or when catastrophes like landslide or erosion occurs. However, it is imperative that the younger generation is exposed to environmental ethics and also sustainable construction in their higher education studies. They should then attempt to disseminate their theoretical understanding of sustainability knowledge into their work practice later in their professional life.

In conclusion, the philosophy of education is to develop and maintain an integrated curriculum programme by making changes in the way construction and engineering is taught so that topics such as ethics and environment are seen as common elements of good construction and engineering practice.

9.5.1.2 The role of professional bodies

Leadership is required from the professional bodies to develop a culture where ethics and practice can evolve. It is the professional bodies' responsibility to promote ethical awareness and initiate debates on ethical issues within the profession. Besides implementing professional code of ethics and educating the professionals through awareness and training on ethics, they also need to work together with practitioners, educational establishments, and employers to develop a professional culture within which ethics can flourish.

In order to encourage professional development, professional bodies should also make CPD programmes on ethics training mandatory not only for initial membership, but also subsequent yearly renewal membership. This is to cultivate a habit of self-regulation

and awareness to maintain high ethics through lifelong learning amongst the industry players.

9.5.2 Organisational factors

9.5.2.1 Code of ethics

Code of ethics should be moulded in the particular business environment of the organisation, which should be of the industry or country in which it exists. As for contracting companies or consultants in Malaysia who have construction contracts overseas, their code of ethics should also consider the culture of the country or countries in which it conducts its business. It is essential that these companies practice good ethics in their work so to gain customers' confidence and reliability; and ensure continuance of their business ventures abroad.

Code of ethics need not only be developed and enforced, but, it must be suited to the changing business environment. Hence, it also needs to be periodically reviewed according to the organisation's policies and revised when necessary, by the ethics committee or policy makers of the management.

9.5.3 System and procedure in the industry

9.5.3.1 Safety agenda

For the national safety agenda in the industry, an important criterion is to develop trust between industry management, such as Construction Industry Development Board, whose main function is to regulate contractors in Malaysia; and the builders' associations, such as Master Builders' Association. The role of the builders' association would be to lead dialogues with the government and other industry players towards the

development of a detailed safety strategy. This strategy will be comprehensive as it includes input from all concerned, and, without disregarding the workers unions.

9.6 Recommendations for further research

Based on this research and the conclusions mentioned above, future research is recommended as follows:

9.6.1 Teaching ethics in construction education programme

A review of the literature examining college-level ethics courses, and/or courses in which ethics is incorporated into the course content of mostly business related courses, shows positive results on attitudes towards ethics. Therefore, further research may focuss on the introduction, examination and application of applied professional ethics in relation to the construction education program. But, the question is how to present effectively the topic of ethics in the classroom, which could be either included as a topic in a course program or as a separate course on its own. Future researchers may wish to focus on the methods or how to teach ethics, and, study the effects of different ways of teaching ethics, and whether a theoretical or more practical approach is better for optimal exposure level of ethics to the students.

Due to the increasing importance of environmental and social concerns under the umbrella of social sustainability, further research on ethics education may concentrate on the application of environmental ethics to students in courses related to the industry. Focus of research can be on the contents of the syllabus such as the impact of construction activities, participatory decision making in the planning and project management, and the role of the construction team in environmental concerns of the project.

9.6.2 Corruption in construction procurement

Literature has identified that corruption is one of the most rampant ethical issue in the industry and has acknowledged the problems associated with it. It is suggested that further research should deal with this issue, especially on the subject of corruption in public procurement. The aim of the study will be to enhance or promote the culture of transparency and accountability as well as promoting effective regulation for the public sector procurement. It will set an example for the private sector and enhance advocacy capacity of customers.

The study may focus on how corruption becomes entangled during the procurement process and identifying efforts to combat it. It is admitted that it will be a tough task, as it might awaken everyone involved with the procurement process in the public sector from the higher political levels to the "runners" or commission agents in the business.

9.6.3 Corporate social responsibility (CSR)

A subject that is commonly and recently related to ethics in organisations is corporate social responsibility (CSR). CSR influences organisations to consider the effect of their business and working practices on the environment and society. A study on CSR for organisations, especially for contracting companies, would be advantageous to improve the poor reputation by the public generally, on the industry's activities. It can focus on the how CSR is incorporated and implemented, and benefits obtained not just for the community but also for the organisation itself.

An important success factor in today's environment, especially for construction organisations is to become and to be seen as an ethical organisation; therefore, a comprehensive approach of study on CSR is needed. CSR should be regarded by the

industry as a measurement of success alongside quality standards, performance, profitability and other considerations.

REFERENCES

Abdel-Razek, R.H. (1998). Factors affecting construction quality in Egypt: identification and relative importance. *Engineering, Construction and Architectural Management, 5(3),* 220-227.

Abdul Rahman, H. and Wang, C., and Yap X. W. (2011). How professional ethics impact on construction quality: perception and evidence in a fast developing economy. "*Bina Integriti" (*Build Integrity*), 1/2011/09*, 4-7.

Abdul Rahim (2010). "*Rasuah dan implikasinya dalam sektor pembinaan negara*" (Corruption and its implication on the national construction sector). "*Bina Integriti" (Build Integrity), 4/2010/8*, 4-9.

Abeysekera, V. (2002). *Re-engineering payment procedures: an agenda for client financed construction, Re-Engineering Construction: Enabling and Motivating Excellence*. In Ng, S.I, Cheung K., Lam, K. and Poon, S. (eds), International Conference on Re-Engineering Construction., 79-85, 10 April, Hong Kong.

Abuznaid, S. A. (2009). Business ethics in Islam: the glaring gap in practice. *International Journal of Islamic and Middle Eastern Finance and Management 2(4),* 278-288.

Abuznaid, S.A. (1990). *Aspects of management attitudes, beliefs and business culture on the West Bank.* PhD dissertation. University of Glasgow, Glasgow.

Adams, J.S., Tashchian, A. and Stone, T.H. (2001). Codes of ethics as signals for ethical behaviour. *Journal of Business Ethics, 29*, 199-211.

Aguilera, R.V. and Vadera, A.K. (2008). The dark side of authority: antecedents, mechanisms, and outcomes of organizational corruption. *Journal of Business Ethics, 77*, 431-49.

Akaah, I. P. (1992). Social inclusion as a marketing ethics correlate. *Journal of Business Ethics, 11*, 599 -608.

Alam, K.F. (1995). Attitudes towards business ethics of business students in Malaysia, *Journal of Business Ethics, 14*, 309-313.

Alhabshi, S.O. (1993). *Management ethics from Islamic perspective*. Arab Management Conference. University of Bradford, Bradford.

Appelbaum, D. and Lawton, S.V. (1990). *Ethics and the Professions*. Englewoods Cliff, NJ: Prentice-Hall.

Appelbaum, S.H., Vigneault, L., Walker, E. and Shapiro,T. S. (2009). (Good) corporate governance and the strategic integration of meso ethics. *Social Responsibility Journal, 5(4)*, 525-539.

Arvy, R. and Renz, G. (1992). Learning from an ethics workshop in an MBA programme. *Journal of Business Ethics, 11*, 331-340.

Asian Development Bank (2004). *Review of Governance and Public Management for Sri-Lanka*. Asean Development Bank, Manila.

Aupperle, K.E and Dunphy, S.M. (2001). Managerial lessons for a new millennium: contributions from Chester Barnard and Frank Capra. *Management Decision, 39 (2)*, 156-164.

Avolio, B.J. and Gardner, W.L. (2005). Authentic leadership development: getting to the root of positive forms of leadership. *Leadership Quarterly, 16(3)*, 315-338.

Badger, W.W. and Gay, S.W. (1996). The top ten lessons learned in construction contracting. *Cost Engineering, 38 (5)*, May, 20-29.

Badron, M. S. (2006). *A man's world is his bond*. IKIM views. The Star, November 21, p. N34: Focus, Kuala Lumpur.

Barnard, C.I. (1938). *The Functions of the Executive.* Cambridge, MA: Harvard University Press.

Barrett, P. (2000). Balancing accountability and efficiency in a more competitive public sector environment. Australian *Journal of Public Administration, 59(3)*, 58-71.

Barthorpe, S. (1999). *Considerate contracting - altruism or competitive advantage*? In Ogunlana, S.O. (Ed.), Profitable Partnering in Construction Procurement, Proceedings of CIB, 179-188, London.

Barthorpe, S. (2003). *Enhancing project performance by implementing a societal stakeholder culture*. In Uwakweh, B.O. and Minkarah, I.A. (Eds.), The Organisation and Management of Construction. Proceedings of 10th International Symposium, Construction Innovation and Global Competitiveness, 948-959, Boca Raton.

Beekun, R.I. (1997). *Islamic Business Ethics*, Herndon. VA: International Institute of Islamic Thought.

Beekun, R.I. (2004). *Islamic Business Ethics.* New Delhi: Goodword Books Pvt.

Belassi, W. and Tukel, O. I. (1996), A new framework for determining critical success/failure factors in projects. *International Journal of Project Management, 14 (3)*, 141-151.

Bennet, R. (1991). *What is management research*. In Smith, N.C. and Dainty, P. (Eds.), The Management Research Handbook, 67-77, London: Routledge.

Bergenhenegouwen, G.J. (1996). Professional code and ethics for training professionals. *Journal of European Industrial Training, 20/4*, 23-29.

Berube, G.G., and Villeneuve, F. (2002). Ethical dilemma and the decision-making process: Is a consensus realistic? *Energy Policy, 30*, 1285-1290.

Bishop, T.R. (1992). Integrating business ethics into an undergraduate curriculum. *Journal of Business Ethics, 13*, 291-299.

Blockley, D. (1995*). Process re-engineering for safety*. Proceedings of Risk Engineering and Management in Civil, Mechanical and Structural Engineering, Feb.22, 51-66, ICE, London.

Boatright, J.R. (1997). *Fiduciary duty*. In Werhane, P.H. and Freeman. R.E. (Eds), The Blackwell Encyclopedia Dictionary of Business Ethics. Oxford: Blackwell.

Bologna, G.J., Linquist, R.J. and Wells, J.T. (1996). *Fraud and commercial crime*. New York: John Wiley and Sons.

Bucciarelli, L.L., (2008). Ethics and engineering education. *European Journal of Engineering Education, 33(2)*, Publication abstract, 141.

Building and Construction Authority (BCA) (2005). *Framework for quality-fee selection method (QFM) system*. Retrieved from: ww.bca.gov.sg/PanelsConsultants/others/QFMFramework.pdf

Building and Construction Authority (BCA) (2000). CONQUAS 21: *The BCA Construction Quality Assessment System*. Building and Construction Authority, Singapore.

Business Dictionary (201a). *Definition of "ethics"*. Retrieved from: http://www.businessdictionary.com

Business Dictionary (2011b). *Definition of "framework"*. Retrieved from: http://www.businessdictionary.com

Brand, M.C. and Davenport, P. (2011). Proposal for a "Dual Scheme" model of statutory adjudication for the Australian building and construction industry. *International Journal of Law in the Built Environment, 3(3),* 252-268.

Brand, M.C. and Uher, T.E. (2010). Follow-up empirical study of the performance of the New South Wales construction industry security of payment legislation. *International Journal of Law in the Built Environment*, *2(1)*, 7-25.

Breja, S.K. and Banwet, D.K. and Iyer, K.C (2011). Quality strategy for transformation: a case study. *The TQM Journal, 23(1),* 5-20.

Brown, M. E., Treviño, L. K., and Harrison, D. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes, 97*, 117-134.

Building Economic Development Council (Building EDC), (1987). *Achieving Quality on Building Sites*. National Economic Development Office, London.

Building Research Establishment (BRE) (1982). *Quality in Traditional Housing, Vol. 1: An Investigation into Faults and Their Avoidance*. HMSO, London.

Busby J.S. (1999). An assessment of post-project reviews. *Project Management Journal, 30(3)*, 23-29.

Candace, D.R. (2003). Professional ethics begin on the college campus. *Chronicle of Higher Education, 50(4),* 20-23.

Carlson, P.J. and Burke, F. (1998). Lessons learned from ethics in the classroom: exploring student growth in flexibility, complexity and comprehension. *Journal of Business Ethics, 17(11),* 1179-1187.

Carmichael, D.G. (2002). *Disputes and International Projects.* Rotterdam: Balkema.

Carmichael, D.G. and Balatbat, M.C.A. (2010). Contractor's analysis of the likelihood of payment of claims. *Journal of Financial Management of Property and Construction, 15(2),* 102-117.

Chan E.H.W and Chan, A.T.S. (2002). Developing of professional system in the construction industry in China. *Journal of Construction Research, 3(2),* 271-284.

Chan, A.P.C. and Chan, A.P.L. (2004). Key performance indicators for measuring construction success. *Benchmarking, 11(2),* 203-214.

Chan, E.H.W, Chan, M.W., Scott, D. and Chan, A.T.S. (2002). Educating the 21st century construction professionals. *Journal of Professional issues in Engineering Education and Practice, Jan.,* 44-51.

Chen, H.L. and Chen, W.T. (2005). Clarifying the behavioural patterns of contractor supply chain payment conditions. *International Journal of Project Management, 23,* 463-73.

Cherrington, J.O. and Cherrington, D.J. (1995). Ethical Decision Making. Englewood, CO: MicroMash.

Chinda, T. and Mohamed, S. (2008). Structural equation model of construction safety culture Engineering. *Construction and Architectural Management, 15 (2),* 114-131.

CIDB (1994). "*Lembaga Pembangunan Industri Pembinaan Malaysia"* (Construction Industry Development) *Act 1994,* Federal Gazette, Kuala Lumpur.

CIDB (2005a). *Construction Industry Master Plan (2006-2015), A Strategic Path to Guide Industry Players to March into an all New Landscape, Challenges and Expectations*. CIDB News, 2, 4-5.

CIDB (2005b). *Integrity forum on construction sector - strengthening image and enhancing professionalism.* Keynote address, YB Dato' Seri S. Samy Velu, Minister of Works, Malaysia, September 12-13, Kuala Lumpur.

CIDB (2007). *Construction Industry Master Plan Malaysia 2006-2015.* Construction Industry Development Board, Kuala Lumpur.

CIDB (2007). *Strategic recommendations for improving environmental practices in construction industry*. Construction Industry Development Board Malaysia, Kuala Lumpur.

CIDB (2008). The 14th Construct Conference. Retrieved from: www.asisconst.com/past_conference/conference/14th/08Malaysia.pdf

CIDB (2010). *Annual Report - Economic Transformation through Sustainable Construction.* Construction Industry Development Board Malaysia, Kuala Lumpur.

CIRIA (2005). *Investing in tomorrow's company, improving sustainability communications between property and construction companies and the investment community*. Construction Industry Research Information Association C636 Report, London.

Cleland, D.I. (1995). Leadership and the project - management body of knowledge. *International Journal of Project Management, 13(2),* 83-88.

Clevenger, M.J., Deysenroth, P.A. and Kelly, M.J. (1996). What does ethics mean to the industry. *Building, 90(9),* 82-84.

Cochran, P.L., Trevino, L.K. and Weaver, G.R. (1999). Corporate ethics programs as control systems, influences of executive commitment and environmental factors. *Academy of Management Journal, 42(1),* 41-57.

Cohen, S., and Grace, D. (1998). *Business Ethics: Australian Problems and Cases*. Melbourne: Oxford University Press.

Cole, T.R.H. (2007). *The construction industry in the 21st century: understanding risk.* Speech, October 11, Faculty of the Built Environment, University of New South Wales, Sydney.

Commonwealth of Australia (2002). *Royal commission into the building and construction industry: security of payment in the building and construction industry*. Discussion Paper 12, Commonwealth of Australia, Canberra.

Connock, S. and Johns, T. (1995). *Ethical leadership*. London:IPD.

Construction Industry Research and Information Association (CIRIA) (2002). *Guidance on the costing of environmental pollution from construction*. Guide C565. London.

Construction Procurement Guidance (2000). London: Treasury Publication,

Construction 21 Steering Committee (C21) (1999). *Construction 21: Re-Inventing Construction.* Ministry of Manpower and Ministry of National Development, Singapore.

Contract Journal (2005). *Ethics Survey - Ethics in Construction*. http://www.contractjournal.com/home

Corbetta, P. (2003). *Social research-theory, methods and techniques*. London: Sage Publications.

Cradden, C. (2005). *Repoliticising management: A theory of corporate legitimacy*. Burlington, VT: Ashgate.

Creswell, J. W. (2005). *Educational Research - Planning, Conducting and Evaluating Quantitative and Qualitative Research*. New Jersey: Pearson Education International.

Creswell, J.W. (2003). *Research Design - Qualitative, Quantitative, and Mixed Methods Approaches*. 2nd edition. Thousand Oaks: Sage Publications.

Cyrill, H., P., Mohd. S. and Abdullah, A. (2008). Ethical orientation of Malaysian middle managers towards corporate gifts. *The Business Review, 10(1),* 349-346.

Datta, M. (2000). *Challenges facing the construction industry in developing countries*. Proceedings of 2nd International conference on construction in developing countries: Challenges facing the construction industry in developing countries, Nov. 15-17, Gabarone, Botswana.

Davies, I. (2001). Health and safety: an economic and moral issue. *Master Builder, The Magazine of the Federation of Master Builders, 17,* 101-121.

Davis, V. and Tomasin, K. (1999). *Construction Safety Handbook*, 2nd edition. New York, NY: Thomas Telford,

DE International (2011). *Market Watch Malaysia 2011 - Construction Industry*. Kuala Lumpur: Malaysian German Chamber of Commerce.

Delaney, J.T. and Sockell, D. (1992). Do company ethics training programs make a difference? An empirical analysis. *Journal of Business Ethics, 11(9),* 719-727.

Delbridge, A. *et al*. (Eds) (2000). *Macquarie Dictionary*. Macquarie Point.

Department of Environment (DOE) (2010). *Enviromental Impact Assessment*. Retrieved from: www.doe.gov.my

Department of Trade and Industry (DTI) (1999). *A better quality of life, a strategy for sustainable development for the United Kingdom*, The Stationery Office, London.

de Vaus, D. (2004). *Research design in social research*. London: Sage Publications.

Denscombe, M. (2003). *The Good Research Guide, for Small-Scale Social Research Projects*. 2nd edition. Buckingham: Open University Press,

Desjardins, J. (2006). *An Introduction to Business Ethics*. New York, NY: McGraw-Hill.

Desjardins, J. (2009). *An Introduction to Business Ethics.* London: McGraw Hill.

Dion, M. (2010). Corruption and ethical relativism: what is at stake? *Journal of Financial Crime, 17(2),* 240-250.

Doost, R.K. (1997). Viewpoint: code of ethics or no code of ethics - a university experience. *Managerial Auditing Journal, 12/1,* 31-34.

Du Plessis, C. (2007), A Strategic framework for sustainable construction in developing countries. *Construction Management and Economics, 25,* 67-76.

Duarte, F. (2008). What we learn today is how we behave tomorrow: a study on students' perceptions of ethics in management education. *Social Responsibility Journal, 4,* 120-128.

Duffy, F. and Hutton, L. (1998). *Architectural Knowledge: The idea of a profession.* London: E&FN Spon.

Dulaimi, M.F. (2005). The influence of academic education and formal training on the project manager's behavior. *Journal of Construction Res, 6(1),* 179-193.

Durkheim, E. (1992). *Professional Ethics and Civic Morals.* London and New York: Routledge.

ECOA (1998). How do you select a local ethics officer? EOA News. www.eoa.org

Egan, J. (1998). *Rethinking construction*. UK: Department of Trade and Industry.

Egbu, C.O. (2004). Managing knowledge and intellectual capital for improved organisational innovations in the construction industry, an examination of critical success factors. *Engineering, Construction and Architectural Management, 11(5),* 301-315.

Elsberry, R.B. (1993). Gift giving has its own etiquette. *Office Systems, 10(9),* 21 - 34.

El-Zein, A., Airey, D., Bowden, P. and Clarkeburn, H. (2008). Sustainability and ethics as decision-making paradigms in engineering curricula. *International Journal of Sustainability in Higher Education, 9(2),* 170-182.

Endress, G. (1998). An Introduction to Islam. New York: Columbia University Press.

ENR (2004). Procurement practice spawn concerns, *Engineering News Record, 253(14),* 14.

ENR (2005). Focus on Engineer in ASCE guidelines, *Engineering News Record, 254(8),* 11.

Ethics Resource Centre, (2005). *National Business Survey - How employees view ethics in their organisations 1994-2005*. Pennsylvania, USA.

Eynon, G., Hill, N. T. and Stevens K. T. (1997). Factors that influence the moral reasoning abilities of accountants: implications for universities and profession. *Journal of Business Ethics, 16(12/13)* 1297-1309.

Fan, C. N. L. and Fox, P. W. (2005). *Ethical Issues in the construction industry*. Hong Kong Construction Industry Institute, Hong Kong.

Fan, C.N.L., Ho, M.H.C. and Ng, V. (2001a). A study of quantity surveyors' ethical behaviour. *Construction Management and Economics, 19(1),* 19-36.

Fan, C.N. L., Ho, M.H.C., and Ng, V. (2001b). Effect of professional socialisation on quantity surveyors' ethical perceptions in Hong Kong, Engineering. *Construction and Architectural Management, 8,* 304-312.

Fan, C.N.L., Fox, P.W., and Wan, J.C.W., (2003). *An investigation of ethical behaviour of construction professional in Quality Management, Sustainability and innovation in management and technology*. Proceedings of 2nd International Conference on Construction in the 21st century *(CITC-II)*, December 10-12, Hong Kong.

Fellows, R. and Liu, A. (2008). Research methods for construction. 3rd edition. London: Wiley-Blackwell Publishing.

Fernandez, J.M. (2005). *The socio-economic perspective, International Construction Week*. Proceedings of Forum on Integrity in Construction Sector - Strengthening Image and Enhancing Professionalism, September 12-13, Kuala Lumpur.

Ferrell, O.C., Thorne LeClaire, D. and Ferrell, L. (1998). The federal sentencing guidelines for organisations: a framework for ethical compliance, *Journal of Business Ethics, 17(4),* 353-63.

Firestein, P. (2006). Building and protecting corporate reputation. *Strategy and Leadership, 34(4),* 25-31.

Fisscher, O. and Nijhof, A. (2005). Research and concepts implications of business ethics for quality management. *The TQM Magazine, 17(2),* 150-160.

Fleddermann, C. B. (1999). *Engineering Ethics.* Englewood Cliffs, NJ: Prentice -Hall.

Fleddermann, C. B. (2004). *Engineering Ethics*. 2nd edition. Englewood Cliffs, NJ: Prentice-Hall.

FMI/CMAA (2004). *Survey of Construction Industry Ethical Practices and Issues, Management Consultant for the Construction Industry and Construction Management Association of America (CMAA).* Retrieved from: http://www.fminet.com/global/Articles/EthicalPracticeSurvey.pdf

Ford, R.C. and Randolf, W. A. (1992). Cross-functional structures: a review and integration of matrix organisation and project management. *Journal of Management, 18,* 682-690.

Ford, R.C. and Richardson, W.D. (1994). Ethical decision making: a review of the empirical literature. *Journal of Business Ethics, 13(3),* 205-21.

Fox, P.W. (1999). *Construction industry development: exploring values and other factors from a grounded theory approach*. Proceedings of CIB W55 & W65 Joint Triennial Symposium, September 5-10, Cape Town, South Africa.

Fox, P.W. and Skitmore, R.M. (2000). *Key factors in the future development of the construction industry*. Proceedings of CIB W107 International Conference: Creating a sustainable construction industry in developing countries, November 11-13, Stellenbosch, South Africa.

Fox, P.W. and Skitmore, R.M. (2003). *Developing the Hong Kong construction industry, Knowledge Construction*. Proceedings of Joint International Symposium of CIB Working Commissions, W55, W65 and W107, October 22-24, Singapore, Department of Building, National University of Singapore.

Fraedrich, J.P. (1992). Signs and signals of unethical behavior. *Business Forum, 17(2),* 13-17.

Freeman, R.E. and Gilbert, D.E. (1988). *Corporate Strategy and the Search for Ethics*. London: Prentice-Hall.

Freidson, E. (1973). *The professions and their prospects*. London: Sage Publications.

Fryer, B.G. (1997). *The Practice of Construction Management*. Oxford: Blackwell Science.

Fuchs, C. and Hofkirchner, W. (2003). Self-organisation, knowledge and responsibility. *Kybenetes, 34(1/2),* 241-260.

Gambatese, J.A., Behm, M. and Hinze, J.W. (2005). Viability of designing for construction worker safety. *Journal of Construction Engineering and Management, 131*, 1029-36.

Gardiner, P.D. (1992). *Conflict analysis in construction project management*. PhD dissertation. University of Durham, UK.

Garrod, B. and Chadwick, P. (1996). Environmental management and business strategy: towards a new strategic paradigm. *Future, 28(1)*, 37-50.

Garza, J. (1988). Analysis of safety indicators in construction. *Journal of Construction Engineering and Management, 124(4),* 312-14.

Gautschi, F.H. and Jones, T.M (1998). Enhancing the ability of business students to recognise ethical issues: an empirical assessment of the effectiveness of a course in business ethics. *Journal of Business Ethics, 17(2)*, 205-216.

Gay, M. (2004), Leadership and integrity. *Canadian Manager, 29(4),* 15-17.

George, D. and Mallery (2003). *SPSS for Windows - Step by Step, A Simple Guide and Reference, 11.0 Update.* 4th edition. Boston: Pearson Education.

George, F. et al., (2000). *Stakeholder management on construction projects*. Proceedings of 2nd World Congress on Cost Engineering, Project Management and Quantity Surveying, Calgary, Canada (published in *The Cost Engineer*, July 2002).

Ghazali, N.A.M. (2007). Ownership structure and corporate social responsibility disclosure: some Malaysian evidence. *Corporate Governance, 7(3),* 252-266.

Gibbons, F. (1991). Self-esteem, similarity and reactions to active versus passive downward comparison. *Journal of Personality & Social Psychology, 60(3).*414-424.

Glass, J and Simmonds, M. (2007). Considerate construction: case studies of current practice. *Engineering, Construction and Architectural Management, 14(2),* 131-149.

Glenn Jr, J.R. (1992). Can business and society course effect the ethical judgement of managers? *Journal of Business Ethics, 11(3),* 217-233.

Global Corruption Report (GCR) (2005). *Introduction.* Peter Eigen, Chairman, Transparency International, Berlin, Germany.

Goorha, P. (2000). Corruption: theory and evidence through economies in transition. *International Journal of Social Economy, 27(12),* 1180-1204.

Government Construction Client Group (GCCG) (1999). *Improving the government construction client; the achieving excellence initiative for Northern Ireland*. Retrieved from: www.cpdni.gov.uk/easy-access/achexcellance_2.pdf

Government of Malaysia (1997). *Anti-Corruption Act (1997)*. Kuala Lumpur, Malaysia.

Gray, R.H. (2007). Business ethics and organisational change. *Management Auditing Journal, 5(2),* 12-21, Emerald Backfiles, 2007.

Gray, R.H., Owen, D.L. and Maunders, K.T. (1988). Corporate social reporting: emerging trends in accountability and the social contract. *Accounting, Auditing and Accountability Journal, 1(1),* 6-20.

Grimshaw, B. (2001). Ethical issues and agendas. *Facilities, 19(1/2),* 43-51.

Grove, J. B. (2000). *The Grove Report: Key terms of 12 leading construction contracts are compared and evaluated*. Government of the HK SAR. Retrieved from: http://www.construcionweblinks.com/Resources/Industry_Reports_Newsletter/Nov_6_2000/grove_report.htm#endnotes

Guerrette, R.H. (1988). Corporate ethical consulting: developing management strategies for corporate ethics. *Journal of Business Ethics (5),* 373-80.

Gupta, J.L. and Sulaiman, M. (1996). Ethical orientations of managers in Malaysia. *Journal of Business Ethics, 15,* 735-748.

Guttmann, D. (2006). *Ethics in Social Work: A Context of Caring.* Philadelphia, PA: The Haworth Press.

Hadi, M. (2001). *Working with the community: impacts report for general dissemination*. BRE report for DTI. Retrieved from: http://projects.bre.co.uk/productive_workplace/pdf/ImpactsOfConstruction.pdf

Halfond, J. (1990). Should business schools be Sunday schools? *Business and Society Review, 72*, 52-54.

Harrington, S.J. (1991). What corporate America is teaching about ethics. *Academy of Management Executive, 5(1)*, 21-30.

Harris, C.E., Jr Pritchard, M. S. and Rabins, M. J. (2005). Engineering Concepts and Cases. 3rd edition. Belmont, CA: Wadsworth Publishing Company,

Harris, R.A. (2000). *An assessment of construction contract claims in the UK*. PhD dissertation. University of Newcastle-upon-Tyne, UK.

Hartman, E.M. (2008). Socratic questions and answers: a virtue-based approach to business ethics. *Journal of Business Ethics, 78(2)*, 313-28.

Hartman, L. (2005). *Perspectives in Business Ethics*. New York, NY: McGraw-Hill Irwin.

Hauck, A. and Rockwell, Q. (1996). *Desirable characteristics of the professional constructor, the initial results of the constructor certification skills and knowledge survey*. Proceedings of ASC 32nd Annual Conference, US.

Herkert, J.R. (2000). Engineering ethics education in the USA: content, pedagogy and curriculum. *European Journal of Engineering Education, 25(4)*, 303-314.

Hersh, M.A. (2002). Whistleblowers - heroes or traitors? Individual and collective responsibility for ethical behaviour. *Annual Reviews in Control, 26*, 243-262.

Hess, J.R., Shuster, P. J. and Weiler, R.J. (1999). *Top employees of the development and construction sectors: What character qualities do they possess*? Council for Ethics in Economics. Retrieved from: http://www.businessethics. org/pastconv/04-21-99.htm.

Hiltebeitel, K.M. and Jones, S.K. (1992). An assessment of ethics instruction in accounting education. *Journal of Business Ethics, 11(1)*, 37-46.

Hinze, J. (1988). Safety on large building constructions projects. *Journal of Construction Engineering and Management, 114(2)*, 286-293.

Ho, J.K.L. and Zeta, K.C. (2004). *Cultural Factors and Their Significance to the Hong Kong Construction Industry*. Retrieved from: www.ic.ployu.edu.hk/esh/kb/culture/Ho&Zeta.pdf

Ho, M. C., (2004). *Ethics management in a construction organisation: Employees attitudes to corporate codes of ethics*. PhD dissertation. University of New South Wales, Australia.

Ho, M. C., Drew, D., Mc George, D., and Loosemore, M. (2004). Implementing corporate ethics management and its comparison with the safety management system: a case study in Hong Kong. *Construction Management and Economics, 22*, 595-606.

Ho, M. F. C. and Ng, C.W.V. (2003). Quantity surveyors' background and training, and their ethical concepts, conceptions and interests considerations. *Construction Management and Economics, 21*, 43-67.

Holian, R. (2002). Management decision making and ethics: practices, skills and preferences. *Management Decision, 40/9*, 862-870.

Holt, R. and Rowe, D. (2000). Total quality, public management and critical leadership in construction project. *International Journal of Quality & Reliability Management, 17(4/5*, 541-553.

Hong Kong (China) Construction Industry Review Committee (HKCIRC) (2001). *Construct for Excellence: Report of the Construction Industry Review Committee*. Hong Kong Government, Hong Kong.

Hong Kong Ethics Development Centre (HKEDC) (1996). *Ethics for professionals (Architecture, Engineering and Surveying): A resource portfolio for Hong Kong Universities*. Hong Kong Ethics Development Centre, Hong Kong.

Hong Kong Ethics Development Centre (HKEDC) (2003). *Ethics for Construction Professionals - A resource portfolio for Hong Kong Universities*. Independent Commission against Corruption (ICAC) New Territories, Hong Kong.

House of Commons (2001). *Modernising construction - Report by the Controller and Auditor General*. The Stationery Office, London.

Huang, X. and Hinze, J. (2006a). Owner's role in construction safety. *Journal of Construction Engineering and Management, 132,* 164-73.

Huang, X. and Hinze, J. (2006b). Owner's role in construction safety. *Journal of Construction Engineering and Management, 132*, 174-81.

Hughes, J. (2003). Accountability rules. *Supply Management, 8(4),* 17-18.

Hui, W.S, Othman, R, Omar, N. Abdul Rahman, R and Haron, N.H. (2011). Procurement issues in Malaysia. *International Journal of Public Sector Management, 24(6),* 567-593.

Hussey and Hussey (1997). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students.* London: Macmillan Press Ltd.

Ibrahim, A.R., Roy, M.H., Ahmed, Z. and Imtiaz, G. (2010). An investigation of the status of the Malaysian construction industry. *Benchmarking: An International Journal, 17(2),* 294-308.

Iemma, M. (2002). *Building and construction industry security of payment amendment bill (NSW)*. New South Wales, Australia, 81-83.

International Construction Week (ICW) (2005). *Forum on Integrity in Construction Sector - Strengthening Image and Enhancing Professionalism*, September 12-13, Kuala Lumpur.

Internet Encyclopaedia of Philosophy (2003). *Ethics.* Retrieved from: www.utm.edu/research/iep/e/ethics.htm

Institute for Construction Training and Development (ICTD) (1992). *Consultancy on the Domestic Contracting Industry in the Roads Sub-Sector*. Ministry of Policy Planning and Implementation, Sri Lanka, 3-242.

Institute of Integrity Malaysia (IIM) (2004). *National Integrity Plan (NIP)*. Kuala Lumpur, Malaysia.

Jackson, B. (2000). *The perception of experienced construction practitioners regarding ethical transgressions in construction industry.* PhD dissertation. Colorado State University, USA.

Jackson, B. (2004/2005). The perceptions of experienced construction practitioners regarding ethical transgressions in the construction industry. *The International Journal of Construction Education and Research, 1(2)*, 112-128.

Jamal, K. and Bowie, N.E. (1995). Theoretical considerations for a meaningful code of professional ethics. *Journal of Business Ethics, 14*, 702-14.

James, J. B., and Frank, A. (1992). Blacklisting public contractors as an anti -corruption and racketeering strategy. *Criminal Justice Ethics*, *11(2)*, 64-76.

Johnson, D. G. (1999). *Ethical issues in Engineering*. Englewood Cliffs, NJ: Prentice-Hall.

Josephson, M. (2002). *Making ethical decisions*. Josephson Institute of Ethics.

Kamardeen, I. (2009). Strategic safety management information system for building projects in Singapore. *Engineering, Construction and Architectural Management, 16(1)*, 8-25.

Kang, B., Price, A.D.F, Thorpe, A. and Edum-Fotwe, F.T. (2004). Developing a systems approach for managing ethics in construction project environments. In: Khosrowshahi, F. (ed.). 20th Annual ARCOM Conference, 1367-1375, September 1-3, Herriot Watt University. UK.

Kaplein, M. (2002). Guidelines for the development of an ethics safety net. *Journal of Business Ethics, 41(3)*, 217-34.

Karande, K., Shankarmahesh, M.N., Rao, C.P., and Md. Rashid, Z. (2000). Perceived moral intensity, ethical perception, and ethical intention of American and Malaysian managers: A comparative study. *International Business Review, 9*, 37- 59.

Kelly, B. (2007). Do the right thing. *Journal of Business Strategy*, 13-15, Emerald Backfiles.

Kelly, J. and Hunter, K. (2003). Three wheels of best value: a service focussed approach to the measurement of best value. RICS Foundation. *Research papers, 4(23)*, 1-28.

Kerr, D. S. and Smith L.M. (1995). Importance of and approaches to incorporating ethics into the accounting classroom. *Journal of Business Ethics, 14(12)*, 987-995.

Khosrowshahi, F. (2000). *A radical approach to risk in project financial management*. Proceedings of 16th Annual ARCOM Conference, September 6-8, Glasgow Caledonian University, Scotland

Knight, A., and Morledge, R., (2005). *Professionalism and ethical decision making*. Proceedings of Queensland University of Technology Research Week International Conference, Brisbane, July 4-8, Queensland University of Technology. Australia.

Koestenbaum, P, (2002). *The Philosophic Consultant: Revolutionizing Organisations with Ideas.* Jossey-Bass/Pfeiffer.

Koh, H. C, and Boo E.H.Y. (2004). Organisational ethics and employee satisfaction and commitment. *Management Decision, 42 (5)*, 677-693.

Kukadia, V., Upton, S. and Grimwood, C. (2003). *BRE Pollution Control Guide: Controlling Particles, Vapour and Noise Pollution from Construction Sites - Parts 1 to 5*. Building Research Establishment, Watford.

Laczniak, G.R. and Murphy, P.E. (1991). Fostering ethical marketing decisions. *Journal of Business Ethics, 10(4)*, 259-271.

Lam, C. (2004). Understanding the Ethical Decisions and Behaviours of Hong Kong Business Managers: An Implication for Business Ethics Education. *Management Research News, 27(10)*, 69-77.

Langlois, C.C. and Schlegelmilch, B.B. (1990). Do corporate codes of ethics reflect national character? Evidence from Europe and the United States. *Journal of International Business Studies, 4th quarter*, 519-39.

Langlois, L. and Lapointe C. (2010). Can ethics be learned? Results from a three-year action-research project. *Journal of Educational Administration, 48(2)*, 147-163.

Langseth, P. (2007). *Measuring corruption*. In Sampford, C., Shacklock, A., Connors, C. and Galtung, F. (Eds). Measuring corruption, Ashgate, Aldershot.

Latham, M. (1994). *Constructing the Team*, HMSO, London.

Lawton, A. (2005). Public service ethics in a changing world. *Futures, 37(2-3)*, 231-243.

Le Roux, G.K., Nkado, R.N. and Mbachu, J.I. (2004). *Critical determinants of successful professional practice*. Proceedings of International Construction Research Conference of the Royal Institution of Chartered Surveyors, September 7-8, Leeds Metropolitan University. UK.

Leclair, D.T. (1998). *Integrity management: A guide to managing legal and ethical issues in the workplace.* University of Tampa, Tampa, Florida.

Lee, J. and Fong, T.Y. (2000). *Environmental management within the development approval process in the construction industry*. Proceedings of Dialogue on Good Environmental Practices in the Construction Industry, Bangi, Malaysia.

Levene Efficiency Scrutiny (1995). *Construction Procurement by Government.* Cabinet Office Efficiency Unit Scrutiny, HM Treasury, London.

Levitt, R.E. and Samelson, N.M. (1993). *Construction Safety Management.* 2nd edition. New York, NY: Wiley.

Lewis, M. (2001). Islam and accounting. *Accounting Forum, 25(2),* 103-127.

Lian, G.C. (2005). *LTA acts to boost circle line site safety*, The Straits Times, April 20, p. H3.

Lin, J. and Mills, A. (2001). Measuring the occupational health and safety performance. *Facilities, 19(3/4),* 13-138.

Lingard, H. and Yesilyurt, Z. (2003). The effect of attitudes on the occupational safety actions of Australian construction workers: the results of a field study. *Journal of Construction Research, 4(1),* 59-69.

Lippitt, G., and Lippitt, R. (1986). *The consulting process in action*. San Diego, CA: University Associates.

Liu, A. M.M, Fellows, R. and Ng. J. (2004). Surveyors' perspectives on ethics in organisational culture. *Engineering, Construction and Architectural Management, 11(6),* 438-449.

Longman (1976). Longman Modern English Dictionary. London: Book Club Associates.

Loo, R. (2002). Working towards best practices in project management: a Canadian study. *International Journal of Project Management, 20,* 93-98.

Low, S.P. and Goh, K.H. (1993). The practice of quality and quality assurance in the Singapore construction industry. *Quality Forum, 19(1),* 40-55.

MacKenzie, S.B., Podsakoff, M. and Aheame, M. (1998). Some possible antecedents and consequences of in-role and extra-role salesperson performance. *Journal of Marketing, 62,* 87-98.

Mahbob, S. (2005). *Welcome Address,* President of the Malaysian Institute of Integrity. Integrity Forum on Integrity in the Construction Sector-Strengthening Image and Enhancing Professionalism, September 12-13, Kuala Lumpur.

Mannheim, B., Baruch, Y. and Tal, J. (1997) Alternative models for antecedents and outcomes of work centrality and job satisfaction of high-tech personnel. *Human Relations, 50,* 1537-1562.

Marsh, T.W., Robertson, I.T., Duff, A.R., Phillips, R.A., Cooper, M.D and Weyman, A. (1995). Improving safety behaviour using goal setting and feedback. *Leadership & Organization Development Journal, 16(1),* 5-12.

Martin, M. W. and Schinzinger, R. (1996). *Ethics in Engineering*. 3rd edition. New York: McGraw-Hill.

Martin, M. W. and Schinzinger, R. (2005). *Ethics in Engineering*, 4th edition. New York: McGraw-Hill.

Mason, J. (2010). *A single ethical code for the construction industry - What do young professionals think about it*? Proceedings of Construction, Building and Real Estate Research Conference of the Royal Institution of Chartered Surveyors. September 2-3, Dauphine Université, Paris, France.

Master Builder Magazine (1997). Work over fraud. *Magazine, July-August, 4.*

May, D., Wilson, O.J. and Skitmore, R. M. (2001). Bid-cutting: an empirical study of practice in South-East Queensland, Engineering. *Construction and Architectural Management, 8(4),* 250-256.

May, D.R., Chan, A., Hodges, T. and Avolio, B.J. (2003). Developing the moral component of authentic leadership. *Organisational Dynamics, 32,* 247-60.

McAfee, R.B. and Winn, A.R. (1989). The use of incentives/feedback to enhance work place safety: a critique of the literature. *Journal of Safety Research, 20(1),* 7-19.

McCormick, J.T. and Paterson, N. (2006). The threat posed by transnational political corruption to global commercial and development banking. *Journal of Financial Crime, 13(2),* 183-194.

McDonald, G. (1995). Common Myths about Business Ethics: Perspectives from Hong Kong. *A European Review, 4(2),* 64-69.

McDonald, G. M. (2009). An anthology of codes of ethics. *European Business Review, 21(4),* 344-372.

McDowell, B. (1991). *Ethical conduct and the professional's dilemma*. New York, NY: Quorum Books.

McLain, D.L. and Keenan, J.P. (1999). Risk, information, and the decision about response to wrongdoing in an organisation. *Journal of Business Ethics, 19(3),* 255-271.

Miceli, M. P. and Near, J. P. (1992). *Blowing the whistle*. Lexington Books.

Mihai, D.R. (2008). Ethics in management consultancy services - best practices of international codes of conduct. *Bulletin of the Transilvania University of Brasov, 1,* 50-61.

Miles, M. B., & Huberman, M. A. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd edition. Beverley Hills: Sage.

Ministry of Information (1997). *Vision 2020: Malaysia: Towards establishing a fully developed nation.* Ministry of Information Malaysia, Kuala Lumpur.

Ministry of Manpower (MIM) (2005). *Safety factors*. Retrieved from: http://app.mom.gov.sg/mompolling/poll/showpoll.aspx

Ministry of National Development (MND) (2005). *Government response to the final report of the committee of inquiry into the Nicoll Highway collapse*. Retrieved from: www.mnd.gov.sg/newsroom/newsreleases/2005/news170505.htm

Mills, A., Robinson, J. and Davis, P. (2005). *The role of professional associations in the education of property and construction professionals in Australia*. Proceedings of Queensland University of Technology Research Week International Conference, Brisbane, July 4-8, Queensland University of Technology, Australia.

Miodonski, B. (2004), Unethical acts bring only short-term gains, *Contractor, 51(6),* 74.

Mitcham, C. and Duvall, R. (2000). Engineering ethics; Engineer's toolkit. New Jersey: Prentice-Hall.

Mitropoulos, P., Abdelhamid, T., Howell, G. (2005). Systems model of construction accident causation. *Journal of Construction Engineering and Management, 131(7),* 816- 825.

Mohamad, N., and Abdul Rahman, H., (2006). *Professional ethics in the construction industry*. Proceedings of International Conference on Professional Ethics. Malaysian Association of Modern Languages and University Malaya, Feb. 7-8, Petaling Jaya, Malaysia.

Mohammad, F.M. (2006). *Adopting appropriate procurement strategies in the oil and gas industry*. PhD dissertation. Loughborough University, UK.

Molenaar, K., Brown, H., Caile, S. and Smith, R. (2002). Corporate culture, *Professional Safety*, July, 18-27.

Moodley, K. (1999), *Project performance enhancement - improving relations with community stakeholders.* In Ogunlana, S. (Ed.), Profitable Partnering in Construction Procurement, CIB Proceedings, London.

Morden, T. (2004). Principles of Management. London: Ashgate Pulishing.

Mortensen, R.A., Smith, J.E., and Cavangh, G.F. (1989). The importance of ethics to job performance: an empirical investigation of manager's perceptions. *Journal of Business Ethics*, 8, 253-260.

Morton, R. (2002). *Construction UK*. London: Blackwell Science.

Moylan, W. A. (2005). *Building ethics in construction partnerships: An analysis of values-based leadership*. PhD dissertation. Capella University, USA.

Murugavarothayan, K. K. and Coffey, M. (2000). *Performance indicators of professional services used by clients*. Retrieved from: http://rics.org/Builtenvironment/Constructionmanagement/Constructionvaluema

Musonda, I. and Smallwood, J. (2008). Health and safety (H&S) awareness and implementation in Botswana's construction industry. *Journal of Engineering, Design and Technology, 6(1),* 81-90.

Near, J.P. and Miceli, M.P. (1995). Effective whistle blowing. *Academy of Management Review, 20(3),* 679.

Newcombe, R. (2003). From client to project stakeholders; a stakeholder mapping approach. *Construction Management and Economics, 21(8),* 841-848.

Nguyen, L. D., Ogunlana, S.O., and Lan, D. T. X. (2004). A study on project success factors in large construction projects in Vietnam. *Engineering, Construction and Architectural Management, (11/6),* 404-413.

Nishgaki, S. (1994). Humanware, human error and Hiyari-hat: a template of unsafe symptoms. *Journal of Construction Enginering and Management, 120(2),* 421-441.

Northouse, P. G. (2001). *Leadership Theory and Practice.* 2nd edition. London: Sage Publications.

NSW Government (1996). NSW Government Green Paper: security of payment for subcontractors, consultants and suppliers in the New South Wales construction industry. *Australian Construction Law Newsletter, 51,* 41-51.

Nyaw, M. and Ng, L. (1996). A comparative analysis of ethical beliefs: a four country study. *Journal of Business Ethics, 13,* 543-555.

O'Hara, P. A. (2001). Insider trading in financial markets: legality, ethics, efficiency. *International Journal of Social Economics, 28(10/12),* 1046-1063.

Oates, T.D. (1993). Practice of professionalism. *Journal of Professional Issues in Engineering Education and Practice, 119 (1),* 44-45.

Odeyinka, H. A. and Kaka, A. (2005). An evaluation of contractors' satisfaction with payment terms influencing construction cash flow. *Journal of Financial Management of Property and Construction, 10(3),* 171-180.

Ofori G. (2000b). Globalisation and construction industry development: research opportunities. *Construct Management Economics, 18,* 257- 262.

Ofori, G. (1998). Sustainable construction: principles and a framework for attainment-comment. *Construction Management and Economics, 16,* 141-145.

Ofori, G. (2000). *Challenges of construction industries in developing countries: lessons from various countries.* Proceedings of 2nd International Conference on Construction in Developing Countries: Challenges facing the construction industry in developing countries, November 15-17, Gabarone, Botswana.

Ofori, G., Dulaimi, M.F. and Ling, F.Y.Y. (2004). Improving performance of construction industry in Singapore: motivators, enablers and lessons for developing countries. *Journal of Construction Research, 5(2),* 267-289.

Okokgbule, N.S. (2006). An appraisal of the legal and institutional framework for combating corruption in Nigeria. *Journal of Financial Crime, 13(1),* 92-106.

Orme, G. and Ashton, C. (2003). Ethics - a foundation competency. *Industrial and Commercial Training, 35(5),* 184-190.

Othman, R., Jusoff, K., Zakaria, H., Nordin, N. and Shahidan, Z. (2009). The public e-procurement in Malaysia. *Interdisciplinary Journal of contemporary research in business, 1(*6), 143-157.

Oyegoke, A. S., Dickinson, M., Khalfan, M.M.A, McDermott, P. and Rowlinson, S. (2009). Construction project procurement routes: an in-depth critique. *International Journal of Managing Projects in Business, 2(3),* 338-354.

Palalani, K. (2000). *Challenges facing the construction industry: A Botswana perspective.* Proceedings of 2nd International Conference on Construction in Developing Countries: Challenges facing the construction industry in developing countries, November 15-17, Gabarone, Botswana.

Palaneeswaran, E. and Kumaraswamy, M. and Ng, T. (2003). Targeting optimum value in public sector projects through "best value" - focussed contractor selection. *Engineering, Construction and Architectural Management, 10(6),* 418-431.

Parfitt, M.K. and Sanvido, V.E. (1993). Checklist of critical success factors for building projects. *Journal of Management in Engineering, 9(3),* 243-249.

Pater, A. and Van Gils, A. (2003). Stimulating ethical decision-making in a business context: effects of ethical and professional codes. *European Management Journal, 21(6),* 762-772.

Pearl, R, Bowen, P. and Makanjee N. (2005). *Professional ethics in the South African construction industry - a pilot study*. Proceedings of Queensland University of Technology Research Week International Conference, July 4-8, Queensland University of Technology, Brisbane, Australia.

Pederson, E.R. (2007). Perceptions of performance: how European organizations experience EMAS registration. *Corporate Social Responsibility and Environmental Management, 14(2),* 61-73.

Peppas, S.C. (2003). Attitudes toward codes of ethics: the effects of corporate misconduct. *Management Research News, 26(6),* 77-89.

Peters, R.H. (1991). Strategies for encouraging self-protective employee behaviour. *Journal of Safety Research, 22 (2),* 53-70.

Peterson, D. (2004). Perceived leader integrity and ethical intentions of subordinates. *The Leadership and Organisation Development Journal, 25(1),* 7-23.

Petrick, J.A. and Quinn, J.F. (2001). Integrity capacity as a strategic asset in achieving organisational excellence. *Measuring Business Excellence, 5(1),* 24-30.

Petrovic-Lazarevic, S. (2010). Good corporate citizenship in the Australian construction industry. *Corporate Governance, 10(2),* 115-128.

Pettinger, R. (2007). *Introduction to Management.* London: Palgrave Macmillan.

Pheng, L. S. and Ke-Wei, P. (1996). A framework for implementing TQM in construction. *The TQM Magazine, 8(5),* 39-46.

Pheng, L. S. and Tan, W.C. K (1996). The influence of workload instability on quality in the construction industry. *International Journal of Quality and Reliability Management, 13(3),* 42-56.

Pilvang, C. and Sutherland, I. (1998). Environmental project management in project design, building research information. *The International Journal of Research, Development, Demonstration and Innovation, 26 (2),* 113-125.

Pojman, L.P. (2004). *How should we live*? *An introduction to ethics.* Wadsworth, CA: Thomson.

Polidano, C. and Hulme, D. (1999). Public management reform in developing countries: issues and outcomes. *Public Management, 1(1*), 121-132.

Pomeranz, F. (1997). The Accounting and Auditing Organization for Islamic Financial Institutions: an important regulatory debut. *Journal of International Accounting, Auditing and Taxation, 6(1),* 123-130.

Poon, J., (2004a). *The study of ethical behaviours of surveyors.* Proceedings of International Construction Research Conference of the Royal Institution of Chartered Surveyors, September 7-8, School of the Built Environment, Leeds Metropolitan University and the Yorkshire and Humberside Region of the RICS.

Poon, J., (2004b). *Factors influencing ethical decision making for surveyors*. Proceedings of International Construction Research Conference of the Royal Institution of Chartered Surveyors, September 7-8, School of the Built Environment, Leeds Metropolitan University and the Yorkshire and Humberside Region of the RICS.

Poon, J., (2004c). *An investigation of the differences in ethical perceptions among construction managers and their peers*. Proceedings of Association of Researchers in Construction Management (ARCOM) Conference, Edinburgh, Heriot-Watt University, UK.

Poon, J., (2003). *Professional ethics for surveyors and construction project performance: what we need to know*. Proceedings of Construction and Building Research Conference, September 1-2, School of Engineering and the Built Environment, University of Wolverhampton and RICS Foundation.

Porter, L., Steers, R., Mowday, R. and Boulian, P. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology, 59*, 603-609.

Pramanaik, A. (1994). The role of family as an institution in materializing the ethico-economic aspects of human fulfillment. *Humanomics, 10(3),* 85-110.

Pressman, A. (1997). *Professional practice 101: A Compendium of Business and Management Strategies in Architecture*. New York: John Wiley and Sons.

Rabins, M.J. (1998). Teaching engineering ethics to undergraduates: Why? What? How? *Science and Engineering Ethics, 4*, 291-302.

Rahman, A.R. (1996). Administrative responsibility: an Islamic perspective. *American Journal of Islamic Social Sciences, 3 (4)*, 497-517.

Rahman, M., Palaneeswaran, E. and Kumaraswamy,M. (2001). *Applying transactional costing and relational contracting principles to improved risk management and contractor selection*. Proceedings of 2001 International Conference on Project Cost Management, Beijing, China.

Rasberry, R. W. (2000). The conscience of an organisation. *Strategy & Leadership, 28(3)*, 17-21.

Ray, R. S., Hornibrook, J. and Skitmore, R.M. (1999). Ethics in tendering: a survey of Australian opinion and practice. *Construction Management and Economics, 17(2)*, 139-153.

Raymond, J. (2008). Benchmarking in public procurement. *Benchmarking: An International Journal, 15(6)*, 782-793.

Reily, B.J. and Myrslow, J.K. (1990). Ethical business and the ethical person .*Business Horizons, 33(6)*, 23-29.

Richey, D. (1990). Bonded by trust: a new construction ethics committee is formed. *Arkansas Business and Economic Review, 7(7)*, 50.

Rick, B. (2005). The industry need: a code of conduct. *Engineering News Record, 254(4)*, 51.

RICS (1993). *Guide and rules to the test of professional competence*. Building Surveying Division, London.

RICS (1999). *CSM Report*, Royal Institution of Chartered Surveyors, London.

RICS (2000). *Professional Ethics guidance note: Part 1 introduction*. Royal Institution of Chartered Surveyors, London.

Rizk, R.R. (2008). Back to basics: an Islamic perspective on business and work ethics. *Social Responsibility Journal, 4(1/2),* 246-254.

Robertson, C. and Fadil, P (1999). Ethical decision making in multinational organsiations: a culture-based model. *Journal of Business Ethics, 19*, 24-35.

Robertson, H. D. (1987). *Developing ethics education in the construction education program.* Proceedings of 23rd Annual Conference Associated Schools of Construction, Purdue University, Indiana.

Roesset, J.M. and Yao, T.P. (2000). Roles of civil engineering faculty. *Journal of Professional Issues in Engineering Education Practice*, 126 (1), 8-15.

Rose, J.M. (2007). Corporate directors and social responsibility: ethics versus shareholder value. *Journal of Business Ethics, 73,* 319-331.

Rosenbach, W.E., and Taylor, R.L. (1998). *Contemporary Issues in Leadership.* 4th edition. Oxford: Westview Press.

Roslin, R.M. and Melewar, T.C. (2004). Linking practices reflective of Asian values and relationship marketing in the grocery distribution. *International Journal of Retail & Distribution Management, 32(1),* 12-27.

Rubin, D. K., Hampton, T. and Powers, M.B. (2005). Pressures and temptations have industry walking a fine line. *Engineering News Record, 255(18),* 26-31.

Saarela, K.L., Saari, J. and Aaltonen, M. (1989). The effects of an information safety campaign in the shipbuilding industry. *Journal of Occupational Accidents, 10,* 255-66.

Saunders, M., Lewis, P. and Thornhill, A. (2000). *Research Methods for Business Students.* 2nd edition. London: Pitman Publishing.

Scamati, J. T. (1997). Beyond technical competence: honesty and integrity. *Career Development International, 2/1*, 24-27.

Schaub, J.H. and Pavlovic, K. (1983). *Engineering professionalism and ethics*. New York: Wiley.

Schemerhorn, J.R. (2008). *Management.* Hoboken, NJ: Wiley.

Schiebel, W. and Pochtrager, S. (2003). *Corporate ethics as a factor for success - the measurement instrument of the University of Agricultural Sciences (BOKU)*. *Supply Chain Management, 8,*116-21.

Schinzinger, R. and Martin M.W. (2000). *Introduction to Engineering Ethics*. New York: McGraw-Hill.

Schwartz, M. (2001). The nature of the relationship between corporate codes of ethics and behaviour. *Journal of Business Ethics, 32*, 247-262.

Sears, S.K., Sears, G.A. and Clough, R.H. (2008). Construction Project Management. 5th edition. Englewood Cliffs, NJ: Wiley.

Sekaran, U. (2003). *Research Methods for Business - A Skill Building Approach*. 4th edition. New York: John Wiley & Sons, Inc.

Self, D.J., and Ellison, E.M. (1998). Teaching engineering ethics: assessment of its influence on moral reasoning skills. *Journal of Engineering Education, 87(1)*, 29-34.

Shakantu, W., Zulu, S. and Matipa, W.M., (2000). *Global drivers of change: their implications for the Zambian construction industry*. Proceedings of CIW W107 1st International Conference: Creating a sustainable construction industry in developing countries, November 11-13, Stellenbosch, South Africa.

Sharpe, P. L. (1994). Managing for organisational integrity. *Harvard Business Review, 72 (2)*, 106-117.

Shimmin, S., Leather, P.J. and Wood, J. (1981). *Attitudes and behaviour about safety on construction work*. Report to the Building Research Establishment by the Department of Behaviour in Organizations, University of Lancaster.

Sims, R. R. and Sims, S.J. (1991). Increasing applied business ethics courses in business school curricula. *Journal of Business Ethics, 10(3)*, 211-219.

Sims, R.R. (1992). The challenge of ethical behavior in organizations. *Journal of Business Ethics, 11(7)*, 505-13.

Sims, R.R. (2000). Changing an organisation's culture under new leadership. *Journal of Business Ethics, 25*, 65-78.

Small, M. W., and Dickie, L. (1999). A cinematograph of moral principles: critical values for contemporary business and society. *Journal of Management Development, 18(7)*, 628-638.

Smallwood, J.J. (2000). *Performance improvement in South African construction*. Proceedings of CIW W107 1st International Conference: Creating a sustainable construction industry in developing countries, November 11-13, Stellenbosch, South Africa.

Smith, P. (1997). Ethics and tomorrow's company. *Journal of Communication Management, 2(3)*, 286-293.

Solomon, R.C. (1984*). Morality and the Good Life*. London: Pearson.

Somers, M.J., (2001). Ethical codes of conduct and organisational context: a study of the relationships between codes of conduct, employee behaviour and organisational values. *Journal of Business Ethics, 30*, 185-195.

Songer, A.D. and Molenaar, K.R. (1996). Selection factors and success criteria for design - build in the US and UK. *Journal of Construction Procurement, 2(2)*, 69-82.

Songer, A.D. and Molenaar, K.R. (1997). Project characteristics for successful public sector design-build. *Journal of Construction Engineering and Management, 123(1),* 34-40.

Soutar, G., Mc Neil, M.M. and Molster, C. (1994). The impact of the work environment on ethical decision making: some Australian evidence. *Journal of Business Ethics, 13,* 327-339.

Stajkovic, A.D. and Luthans, F. (1997). Business ethics across cultures: a social cognitive model. *Journal of World Business, 32(1),* 17-34.

Stansbury, N., and Stansbury, C. (2005). *Unethical behaviour and criminal acts: including a discussion draft of the anti-corruption code for individuals in the construction and engineering industry*. Society of Construction Law, UK, 1-48.

Stark, A., (1993). What's the matter with business ethics? *Harvard Business Review, May/June,* 38-48.

Stewart, J. (1999). Research note: purchaser-provider - are the purchasers ready for it? *Australian Journal of Public Administration, 58(4),* 105-111.

Stewart, J.D. (1984). *The role of information in public accountability*. In Hopwood, A. and Tomkins, C. (Eds.), Issues in Public Sector Accounting. Oxford: Phillip Allen.

Stewart, S. (1995). *The ethics of values and the value of ethics; should we be studying business values in Hong Kong*? In Stewart, S. and Donleavy, G. (Eds.), Whose business values. Hong Kong: Hong Kong University Press.

Stead W.E., Worrell D.L. and Stead J.G. (1990). An integrative model for understanding and managing ethical behaviour in business organizations. *Journal of Business Ethics, 9(3),* 233-242.

Strader, K.D. (1993). *University Cincinnati Law Review, 62,* 713-764.

Strang, K. D. (2005). Examining effective and ineffective transformational project leadership. *Team Performance Management, 11(3/4),* 68-83.

Suen, H., Cheung, S. and Mondejar, R. (2007). Managing ethical behaviour in construction organizations in Asia: How do the teachings of Confucianism, Taoism and Buddhism and globalization influence ethics management? *International Journal of Project Management, 25,* 257-265.

Sunthonkanokpong, W. (2011). Future global visions of engineering education, *Engineering Procedia, 8,* 60-164.

Sutherland, E.H. (1983). *White collar crime, the uncut version*, Bingham, NY: Yale University, Press.

Svensson, G. and Wood, G. (2004). Codes of ethics best practice in the Swedish public sector: a PUBSEC-scale. *The International Journal of Public Sector Management, 17(2),* 178-195.

Svensson, G. Wood, G. Singh, J. and Callaghan, M. (2009a). A cross-cultural construct of the ethos of corporate codes of ethics (ECCE): Australia, Canada and Sweden. *Business Ethics: A European Review, 18(3),* 253-67.

Svensson, G., Wood, G. and Callaghan, M. (2009b). Cross-sector organizational engagement with ethics: a comparison between private sector companies and public sector entities of Sweden. *Corporate Governance, 9(3),* 283-297.

Svensson, G. Wood, G. and Callaghan, M. (2009c). A construct of the "ethos of codes of ethics" (ECE): the case of private and public Sweden. *International Journal of Public Sector Management, 22(6),* 499-515.

Tang, S. (1997). Safety cost optimisation for building projects in Hong Kong. *Construction Management and Economics, 15,* 77-86.

The Star (2011a). *Bill to protect sub-contractor to be tabled*. 20th Oct. Retrieved from: thestar.com.my.

The Star (2011b). *RM20,200 fine for leaking info*. December 29, p.2 Nation, Kuala Lumpur.

The Star (2012). *Corruption charges filed after probe*. January 5, p.10 Nation, Kuala Lumpur.

Thornton, A. (2004). *Ethics and Construction Law: Where to Start*? Society of Construction Law, UK, 1-24.

Thorpe and Middendorf (1980). *What Every Engineer Should Know About Product Liability*. New York: Marcel Dekker.

Toor, S. R. and Ofori, G. (2008). Leadership for future construction industry: Agenda for authentic leadership. *International Journal of Project Management, 26,* 620-630.

Toor, S.R., and Ofori, G. (2006). *An antecedental model of leadership development*. In proceedings of Joint international symposium of CIB working commissions W55/W65/W86, October, Rome, Italy.

Touran, A., Atgun, M. and Bhurisith, I. (2004). Analysis of the United States Department of Transportation prompt payment provisions. *Journal of Construction Engineering and Management, September/October, ASCE,* 719-725.

Townley, B. (1994). *Reframing HRM - Power Ethics and the Subject at Work*. London: Sage.

Tran, B. (2008). CSR and corruption corporate ethics: an end to the rhetorical interpretations of an endemic corruption. *Social Responsibility Journal, 4(1/2),* 63-81.

Transparency International (1999). *Corruption in International engineering-construction project*. Berlin, Germany.

Transparency International (2006a). *How to Reduce Corruption in Public Procurement: Experiences from Asia - The Malaysian Chapter*. Handbook for Curbing Corruption in Public Procurement, Transparency International, Kuala Lumpur.

Transparency International (2006b). *Handbook: Curbing Corruption in Public Procurement*. Transparency International, Berlin.

Transparency International (2011). *Ranking of countries*. Retrieved from: http://cpi.transparency.org/cpi2011/results/

Treviño, L. K., Brown, M. and Hartman, L. P. (2003). A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suite. *Human Relations, 55*, 25-37.

Trevino, L.K., Hartman, L.P. and Brown, M. (2000). Moral persons and moral manager: how executives develop a reputation for ethical leadership. *California Management Review, 42(4)*, 128-141.

Tsahuridu, E. E. and Vandekerckhove, W. (2008). Organisational Whistle blowing policies: making employees responsible or liable? *Journal of Business Ethics, 82*, 107-118.

Tucker, L.R., Stathakopolous, V. and Patti, C.H. (1999). A multidimensional assessment of ethical codes: the professional business association perspective. *Journal of Business Ethics 19*, 287-300.

Turow, S. (1985). What's wrong with bribery? *Journal of Business Ethics, 4(4)*, 249-251.

Uff, J. (2003). *Duties at the legal fringe: ethics in construction la*w. Society of Construction Law, UK, 1-17.

Uff, J. (2005). *Ethics in construction law - two years on*. Society of Construction Law, UK, 1-8.

Uher, T.E. (1991). Risks in subcontracting: subcontract conditions. *Construction Management and Economics, 9(6)*, 495-508.

UNCHS (1996). *An urbanising world: global report on human settlement*s. Oxford: Oxford University Press.

Valentine, S. and Barnett, T. (2002). Ethics codes and sales professionals - perceptions of their organisations ethical values. *Journal of Business Ethics, 40(3)*, 191-200.

Vaughan, R. (2008). *Conceptual framework*. Bournemouth University, UK. Retrieved from: www.bournemeouth.ac.uk

Vee, C. and Skitmore, M. (2003). Professional ethics in the construction industry. *Engineering, Construction and Architectural Management, 10 (2)*, 117-127.

Velasquez, M. G. (1982). *Business Ethics, concepts and cases*. Englewood Cliffs, New Jersey: Prentice-Hall.

Velasquez, M. G. (2006). *Business Ethics: Cases and Concepts*. Upper Saddle River, New Jersey: Prentice-Hall.

Velasquez, M.G. (2009). *Business Ethics: Concepts and Cases*. New York: Prentice-Hall.

Velasquez, M.G. (1996). Business ethics, the social sciences, and moral philosophy. *Social Justice Research, 9*, 97-107.

Velayutham, S. and Perera, M.H.B. (2004). The influence of emotions and culture on accountability and governance. *Corporate Governance, 4(1)*, 52-64.

Vesilind, P. A. and Gunn, A. S. (1998). *Engineering, Ethics and the Environment*. Cambridge: Cambridge University Press.

Waddock, S. (2005), Hollow men and women at the helm . . . hollow accounting ethics? *Issues in Accounting Education, 20(2)*, 145-150.

Walker, D. (2000). Client/customer or stakeholder focus? ISO 14000 EMS as a construction industry case study. *The TQM Magazine, 12(1)*, 18-25.

Wamuziri, S. (2007). *Safety culture in the construction industry*. Proceedings of Municipal Engineer, Institution of Civil Engineers, *159(3)*, 167-74.

Warne, T.R. (2002). Prequalification: its time to rethink our evaluation standards. *Design-Build DATELINE, 9 (9)*, 8.

Weait, M.J. (2001). Ethics at work. *Management Today, January*, 52-57.

Webster, G. (1991). *The training and development profession*. In Prior. J., Gower Handbook of training and development, Gower, Aldershot.

Weymes, E. (2005). Organisations which make a difference: a philosophical argument for the people focussed organisation. *Corporate Governance, 5(2)*, 142 -158.

Whitbeck, C. (1998). *Ethics in Engineering Practice and Research*. Cambridge: Cambridge University Press.

Wikipedia (2011). Definition of "*KPMG*". Retrieved from: en.wikipedia.org/wiki/KPMG

Wilson, H.G. (1989). Organisational behaviour and safety management in the construction industry. *Construction Management and Economics, 7*, 303-319.

Wood, G. and Callaghan, M. (2003). Communicating the ethos of codes of ethics in corporate Australia: 1995-2001: whose rights, whose responsibilities? *Employee Responsibilities and Rights Journal, 15(4)*, 209-21.

Wood, G., Svensson, G., Singh, J., Carasco, E. and Callaghan, E. (2004). Implementing the ethos of corporate codes of ethics: Australia, Canada and Sweden. *Business Ethics: A European Review, 13(4)*, 389-403.

Wood, T. (2006). *Core safety training a must*. Retrieved from: http//www.contractjournal.com/Articles/2006/02/16/49366/Editorial+Core+safety+cri.

Wotruba, T.R., Chonko, L.B. and Loe, T.W. (2001). The impact of ethics code familiarity on manager behavior. *Journal of Business Ethics, 33*, 59-69.

Wulf, Wm. A., (2004). Engineering ethics and society. *Technology in Society, 26*, 385-390.

Yadong, L. (2007). Global activities of corporate governance. Oxford: Blackwell Publishing.

Yeo, K.T. (1995). Planning and learning in major infrastructure development: systems perspectives. *International Journal of Project Management, 13(5)*, 287-293.

Yeung, I.Y.M. and Tung, R.L. (1996). Achieving business success in Confucian societies: The importance of Guanxi (Connections). *Organizational Dynamics, 25(2),*

Yinghui, B. and Eng, G. C. (1999). *The impact of organisational structure on project performance*. Proceedings of 2nd International Conference on Construction Industry Development and 1st Conference CIB TG 29 on Construction in developing Countries, October 27-29, The Pan Pacific, Singapore.

Yuspeh, A. (1999). Definition of CEO. Retrieved from: www2.cio.com/ask/expert/1999/questions/ question1081.html? CATEGORY ¼ 19&NAME ¼ Leadership/Management

Zabid, A.R. and Alsagoff, S.K. (1993). Perceived ethical values of Malaysian managers. *Journal of Business Ethics, 12*, 331-337.

Zainul Abidin, N. (2010). Investigating the awareness and application of sustainable construction concept by Malaysian developers. *Habitat International, 34*, 421-426.

Zarkada, A (1998). *Tendering ethics, a study of collusive tendering from a marketing ethics perspective*. PhD dissertation. Queensland University of Technology, Brisbane, Australia.

Zarkada-Fraser, A. (2000). A classification of factors influencing participating to collusive tendering agreements. *Journal of Business Ethics, 23(3)*, 269-282.

Zarkada-Fraser, A. and Skitmore, R. M. (2000). Decisions with moral content: collusion. *Construction Management and Economics, 18(1)*, 101-111.

Zou, P.X.W. (2006). Strategies for minimising corruption in the construction industry in China. *Journal of Construction in Developing Countries, 11(*2), 34-49.

APPENDIX 1

TABLE 6.1: REFERENCE FOR QUESTIONS IN QUESTIONNAIRE

Legend:

1. *'Modified from'* indicates the questions were modified from questionnaires of previous similar researches.
2. *'Developed from'* indicates the questions were developed from literature review or pilot interviews.
3. '*Developed by*' indicates the questions were developed by the researcher

Table 6.1: Reference for questions in questionnaire

PART B: ETHICAL BACKGROUND		
PART B1: UNDERSTANDING OF THE IMPORTANCE OF ETHICS		
	Statements	**Reference**
	THE INDIVIDUAL AND PROFESSIONAL PERSON	
B1	How do you rate "the ingredients to uphold the ethics", as in statements B1a - B1c?	
	B1a Self - regulation to maintain high ethics	Modified from Chan and Chan (2002)
	B1b Obligation to the 'duty of care' in professional liability	Developed by researcher
	B1c Following the code of professional ethics or conduct	Modified from Chan and Chan (2002)
	THE PROFESSIONAL PERSON	
B2	I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions.	Modified from Fan *et al*. (2001a)
B3	I understand the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions to uphold ethical standards.	Modified from Fan *et al*. (2001a)
B4	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions can address and provide a working guideline for ethical problems of the professionals.	Modified from Ho and Ng (2003)
B5	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions are effectively enforced.	Modified from Fan *et al*. (2001b)
	THE EMPLOYEE	
B6	I am aware of the existence of a written and formal General Guideline for Ethics, or Code of Ethics or Conduct in my organisation (if there is any).	Modified from Akaah (1992)
B7	I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation (if there is any)	Developed by researcher
B8	The General Guidelines for Ethics, or Code of Ethics or Conduct published in my company are effectively enforced (if there is any).	Developed by researcher
PART B2: STANDARD OF ETHICS		
	THE PROFESSIONAL PERSON	
B9	How do you rate "the criteria to measure project performance", as in statements B9a - B9f?	
	B9a It was completed within budget	Modified from Belassi and Tukel (1996)
	B9b It was completed within time	Modified from Belassi and Tukel (1996)
	B9c It was completed according to specifications	Modified from Belassi and Tukel (1996)
	B9d It was completed to the client's satisfaction	Modified from Belassi and Tukel (1996)
	B9e General public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)	Developed by researcher
	B9f It was completed by upholding ethical principles	Developed by researcher

Table 6.1: Reference for questions in questionnaire (continued)		
B10	How do you rate the importance of the following parties in B10a-B10d, "when faced with ethical dilemmas and decision-making during work (ethical issues of right or wrong)"?	
	B10a My own interest.	Modified from Ho and Ng (2003)
	B10b The interest of company/organisation	Modified from Ho and Ng (2003)
	B10c The interest of my client	Modified from Ho and Ng (2003)
	THE ORGANISATION	
B11	My company considers ethical practice as important criterion when meeting and achieving their goals and objectives.	Developed by researcher
B12	My top executives frequently refer to the importance of ethics in making this company successful.	Modified from Koestenbaum (2002)
B13	In my company, management "walks its talks". Our culture is such that executives, model what they preach.	Modified from Koestenbaum (2002)
B14	My company has a reputation in the market that customers can trust our promises.	Modified from Koestenbaum (2002)
B15	My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	Modified from Koestenbaum (2002)
B16	My company's best employees stay here because it is a good place to work.	Developed by researcher
	THE INDUSTRY	
B17	I perceive that the overall ethical standard in the construction industry in Malaysia is **high**.	Modified from Jackson (2004/2005)
	PART C: ETHICAL ISSUES	
	PRE-CONTRACT ISSUES	
	Tendering practice	
C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	Developed from Grove (2000)
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	Modified from Jackson (2004/2005)
C3	"Ali Baba" tendering practice	Developed from ICW (2005)
C4	Lobbying to secure contract	Developed from pilot interview
C5	Commissions to secure contract	Modified from Jackson (2004/2005) and FMI/CMAA (2004), RICS (2000), Developed from pilot interview
	Confidentiality	
C6	Tenderers' names and prices not confidential to other tenderers	Modified from Jackson (2004/2005) Developed from RICS (2000)
C7	Tender estimate not confidential to tenderers	Modified from Jackson (2004/2005) Developed from RICS (2000)
	Tender Sum	
C8	Frequent front-loading of tender sum - high cost in preliminaries	Modified from Jackson (2004/2005)
C9	Frequent front-loading of tender sum - high cost in initial construction works, e.g. earthworks	Developed from pilot interview
	Tender evaluation	
C10	Contract awarded based on lowest tender price	House of Commons (2001)
C11	Political interest in contract award	Modified from Jackson (2004/2005)

Table 6.1: Reference for questions in questionnaire (continued)		
C12	Company interest in contract award	Modified from Jackson (2004/2005)
C13	Personal interest in contract award	Modified from Jackson (2004/5)
C14	Community interest (e.g. neighbours and public) in contract award.	Developed by researcher
C15	Insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price)	Developed from RICS (2000). The example for insider trading was developed from pilot interview.
	CONSTRUCTION ISSUES	
	Site safety	
C16	Disregard for safety during construction and/or demolition works	Developed from MIM (2005)
C17	Inadequate protection from debris and hazardous material	Developed from pilot interview
C18	Improper location and storage of material	Developed from pilot interview
C19	Improper installation and usage of temporary works (e.g. scaffolding)	Developed from pilot interview
C20	Inadequate perimeter hoarding at site	Developed from pilot interview
C21	Improper installation and usage of construction machinery	Developed from pilot interview
C22	Unqualified safety officer	Developed from pilot interview
C23	Lack of safety officer	Developed from pilot interview
	Quality of Work	
C24	Poor quality of work due to low contract amount	Developed from Datta (2000)
C25	Non compliance to specification - poor quality of material in general	Developed by researcher
C26	Poor workmanship in general	Developed by researcher
C27	Cutting corners because of time pressures	Developed by researcher
	Technical competency	
C28	Not competent to handle the job	Developed from pilot interview
C29	Inadequate construction techniques	Developed from pilot interview
	Payment	
C30	Non-payment to consultant and/or contractor	Modified from Vee and Skitmore (2003)
C31	Delayed payment to consultant and/or contractor	Modified from Vee and Skitmore (2003)
C32	"Pay when paid" (back to back payment) affecting sub-contractor	Developed from pilot interview
	Claims for work done	
C33	Inflating completed work percentages in progress claims	Modified from Jackson (2004/2005)
C34	Unreasonable costs for variation works	Developed by researcher
C35	Unreasonable claims for extension of time	Developed by researcher
C36	Inflated claims for loss and expense and damages	Developed from pilot interview
C37	Inflated claims for variation works due to low contract sum	Developed from Stansbury and Stansbury (2005)
C38	Abandoning work due to poor project management and cost control	Developed from pilot interview
	Workers	
C40	Employing illegal workers	Developed from pilot interview
C41	The ethics of workers have a negative influence on the overall ethical standard	Developed from pilot interview
	ENVIRONMENTAL ISSUES	
C42	Contamination of soil (e.g., due to spread of harmful substances during construction)	Developed from Vee and Skitmore (2003)
C43	Lack of proper protection against soil erosion	Developed from Vee and Skitmore (2003)

Table 6.1: Reference for questions in questionnaire (continued)		
C44	Unnecessary clearing of trees or shrubs	Developed from pilot interview
C45	Unnecessary cutting of ground earth	Developed from pilot interview
C46	Dumping of building debris illegally	Developed from Vee and Skitmore (2003)
	OTHER ISSUES	
	Harassment	
C39	Situations where a party is made responsible for another party's error or negligence	Developed from Datta (2000)
	Respect for others	
C47	Disregarding respect and sensitivity towards culture and religion of the public and local community affected by the construction works	Developed from pilot interview
	ENFORCEMENT	
C48	The following parties, as in C48a-C48d, lack effective reporting procedures and enforcement for unethical practices.	Modified from Ethics Resource Centre (2005) and developed from pilot interview
	C46a Own organisation	
	C46b Professional institutions	
	C46c Industry association (e.g. Contractor's Association)	
	C46d Government	
	POST- CONTRACT ISSUES: Defective works	
C49	Non compliance to specification - poor quality of material in general	Developed from pilot interview
C50	Poor workmanship in general	Developed from pilot interview
C51	**The effects of unethical practice are:**	
	C51a The structural integrity of what we build	Modified from FMI/CMAA (2004)
	C51b The cost of getting our projects built	Modified from FMI/CMAA (2004)
	C51c Trust between project participants of the project- which affects business	Modified from FMI/CMAA (2004)
	C51d The long term performance of the unethical party	Modified from FMI/CMAA (2004)
	C51e Interest of young generation into the industry	Modified from FMI/CMAA (2004)
	C51f They give the industry a bad image	Developed by researcher
	PART D: FACTORS TO IMPROVE ETHICS	
	INDIVIDUAL FACTORS	
D1	Education in ethics should start from school.	Developed from Robertson (1987), Hess *et al*. (1999) and pilot study.
D2	Religious and moral education is important in setting high ethical standards.	Developed from Abuznaid (2009) and Fuchs and Hofkirchner (2003)
	PROFESSIONAL FACTORS	
D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.	Developed from Ho and Ng (2003)
D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.	Modified from RICS (2000)
D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.	Modified from Ofori *et al*. (2004) and RICS (2000)
	INDUSTRY FACTORS	
D7	There should be a standard "construction industry" Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.	Modified from FMI/CMAA (2004)

Table 6.1: Reference for questions in questionnaire (continued)		
D8	Existing or new Code of Ethics should include specific anti-corruption provisions; e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	Developed from ENR (2005)
D9	The provisions in D8 above should be stated in contracts and apply to anyone hired to design and construct the project.	Developed from ENR (2005)
	ORGANISATIONAL FACTORS	
D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company /organisation has to abide by.	Modified from Clevenger *et al* (1996), ACA (2006) and Ofori *et al.* (2004)
D10	The company's leaders should serve as role models to act ethically	Modified from Ethics Resource Centre (2005)
D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).	Developed from FMI/CMAA (2004)
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.	Modified from Ethics Resource Centre (2005)
D13	Whistle blowers to be better protected and more highly regarded. (*Whistle blowing is the act of an employee, informing higher management or the public of unethical or illegal practice by an employee or supervisor)*	Developed from Wood and Callaghan (2003).
D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.	Developed from Small and Dickie (1999) and pilot interview
D15	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, How do you rate the following initiatives in a company/organisation?	
	D15a Appointing an "Ethics Officer"	Developed from National Integrity Plan (2004)
	D15b Creating an "Ethics Department/Office"	Developed from Rasberry (2000)
	SYSTEM AND PROCEDURE IN THE CONSTRUCTION INDUSTRY	
	Tendering and procurement practice	
D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.	Developed from Rubin *et al*. (2005) and pilot interview
D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.	Developed from pilot interview
D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.	Developed from pilot interview
D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.	Developed by researcher
D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exists conflict of interest (for example, a relative) towards any of the parties bidding for contracts.	Developed from pilot interview
D21	Blacklist companies practising unethical practices.	Developed from James and Frank (1992)
	Site safety	
D22	Require all workplaces to conduct risk assessments and site management plans.	Modified from MIM (2005)
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	Modified from MIM (2005)
D24	Code of ethics should stress the importance of safety.	Developed from Fleddermann (2004)
D25	Ban contractors with bad safety records from tendering projects.	Modified from MIM (2005)

Table 6.1: Reference for questions in questionnaire (continued)		
D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety	Modified from MIM (2005)
D27	Safety criteria should be standardised as guidelines for all concerned	Developed from contractjournal.com (2005)
D28	Safety training and education to made compulsory for all concerned	Developed from Smallwood (2000)
	Quality of work	
D29	The client should be more involved in the design and construction process.	Modified from Ofori *et al* (2004)
D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.	Modified from Ofori *et al* (2004) and Smallwood (2000)
D31	Concentrate on efforts to create quality culture within each organisation	Modified from Ofori *et al* (2004)
	Workmanship	
D32	Reduce the number of foreign workers who normally lack trade skills	Modified from Ofori *et al* (2004)
D33	In-house training in trade skills for all workers, including foreign workers	Modified from Smallwood (2000)
D34	The government to provide incentives to help employers to invest in training programmes	Modified from Ofori *et al* (2004)
	Timely payment	
D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.	Developed by researcher
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame	Developed by researcher
	OTHER FACTORS	
	Environmental ethics	
D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.	Developed from Yeo (1995)
D38	Project information should be shared with the public to obtain their perspectives regarding the project	Developed from Nguyen *et al*. (2004)
D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations)	Developed from Mohamad and Abdul Rahman (2006)
	Legislative enforcement	
D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.	Developed from Miodonski (2004)
D41	An 'ombudsman' service for the construction industry should be appointed by the legislative body. *(Function of "ombudsman" is to receive, investigate and report on complaints received of unethical practise within the construction industry)*	Developed from Clevenger *et al* (1996).
	Accountability and customer satisfaction	
D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.	Developed from Murugavarothayan and Coffey (2000)
D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).	Developed from Holt and Rowe (2000) and Velayutham and Perera (2004)

APPENDIX 2

QUESTIONNAIRE SURVEY

QUESTIONNAIRE SURVEY
Ethics in the Malaysian construction industry

GENERAL INFORMATION

OBJECTIVES

The aim of the research is to develop a framework **to improve ethics in the Malaysian construction industry.**

It will investigate:
a) the ethical background concerning the understanding of the importance of ethics and standards of ethics;
b) ethical issues that occur in the industry; and,
c) factors to improve ethics in the industry.

This survey intends to investigate the above objectives for **construction contracts of local Malaysian organisations or companies, for the design, project management and construction of projects in Malaysia.**

DEFINITION OF TERMS

Ethics is a set of moral values and principles, which form the standards guiding the code of conduct of individuals, organisations and professions (National Integrity Plan, Integrity Institute of Malaysia, 2004).

Ethics is (Hong Kong Ethics Development Centre, 2003):
a) the study and understanding of morality, moral principles, and moral decision-making process;
b) the development of reasonable standards and procedures for deciding what is morally right and wrong;
c) a set of general moral belief, normative rules of conduct, a code, a standard or standards that govern what one ought to do when the well - being and rights of, or duties to oneself, others, or institutions are at stake; and,
d) what one should do instead of what one will do in a particular instance, with all things considered.

Ethical issue is one which (Hong Kong Ethics Development Centre, 2003):
a) affects other stakeholders i.e. those individuals or groups who have a vested interest in the issue;
b) entails a normative dimension of right or wrong;
c) puts into conflict well-recognised values, customs, mores, or accepted practices;
d) involves the power to control over deciding the alternative among all options available; and,
e) arises when all existing ordinances and codes fail to determine how the issue should be resolved.

CONFIDENTIALITY
The data collected in this survey is only for research purposes and will be kept strictly confidential.

INSTRUCTIONS
For **PART A** of the questionnaire**,** please **CIRCLE** the number that represents your response.
For **PARTS B, C** and **D** of the questionnaire**,** please **CIRCLE** the number that best represent your answer using the following scales.

Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	2	3	4	5

THIS QUESTIONNAIRE CONTAINS NINE (9) PAGES INCLUDING THIS PAGE

PART A: DEMOGRAPHY and CAREER PROFILE

Please **CIRCLE** the number that represents your response.

A1	**Age (in years)** **1**. 20 - 29 **2**. 30 – 39 **3**. 40 – 49 **4**. 50 and above
A2	**Sex** **1**. Male **2**. Female
A3	**Highest education level** **1**. Certificate **2**. Diploma **3**. Professional Diploma **4**. Bachelor degree **5**. Master degree **6**. Doctorate
A4	**Professional discipline** **1**. Architecture **2**. Quantity surveying **3**. Building surveying **4**. Civil engineering **5**. Mechanical engineering **6**. Electrical engineering **7**. Others, please specify, _____
A5	**Registration with relevant professional board** **1**. Board of Quantity Surveyors Malaysia **2.** Board of Engineers Malaysia **3** Board of Architect Malaysia **4**. Others, please specify, _____
A6	**Registration with other relevant professional bodies** **1**. Institution of Surveyors Malaysia **2**. Institution of Engineers Malaysia **3**. Malaysian Association of Architects **4**. Others, please specify, _____
A7	**Position in organisation** **1**. Executive **2**. Senior management **3**. Middle management **4**. Junior level personnel
A8	**Type of organisation** **1**. Public client (e.g. federal government, statutory body, local authority) **2**. Private client (e.g. developer, others) **3.** Consultant **4**. Contractor
A9	**Years of experience in the construction industry** **1**. Less than 2 years **2**. 2 - 5 years **3**. 6 - 10 years **4**. 11 - 15 years **5**. 16 - 20 years **6**. more than 20 years
A10	**Type of work which best describes your specialised field or most experienced** **1**. Building works **2**. Mechanical and electrical works **3**. Roads and/or bridges **4.** Other civil works (e.g. tunnels and dams) **5.** Other infrastructure works (e.g., sewerage, water reticulation, telephone or electrical infrastructure)

PART B ETHICS OF THE CONSTRUCTION PROFESSIONAL, ORGANISATION AND THE INDUSTRY

Parts B1 and B2 of this survey intend to establish the ethical background of the construction industry.

PART B1 UNDERSTANDING THE IMPORTANCE OF ETHICS

Please **CIRCLE** the number that best represent your answer.

	STATEMENTS	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	THE INDIVIDUAL AND PROFESSIONAL PERSON					
B1	How do you rate "the ingredients to uphold ethics", as in statements B1a - B1c?					
	B1a Self - regulation to maintain high ethics	1	2	3	4	5
	B1b Obligation to the 'duty of care' in professional liability	1	2	3	4	5
	B1c Following the code of professional ethics or conduct	1	2	3	4	5
	THE PROFESSIONAL PERSON					
B2	I am aware of the existence of the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions.	1	2	3	4	5
B3	I understand the Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions to uphold ethical standards.	1	2	3	4	5
B4	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions can address and provide a working guideline for ethical problems of the professionals.	1	2	3	4	5
B5	Byelaws, Regulations and Rules of Ethics or Conduct published by professional institutions are effectively enforced.	1	2	3	4	5
	THE EMPLOYEE					
B6	I am aware of the existence of a written and formal General Guideline for Ethics, or Code of Ethics or Conduct in my organisation (if there is any).	1	2	3	4	5
B7	I understand the General Guideline for Ethics, or Code of Ethics or Conduct published by my organisation (if there is any).	1	2	3	4	5
B8	The General Guidelines for Ethics, or Code of Ethics or Conduct published in my company are effectively enforced (if there is any).	1	2	3	4	5

PART B2 STANDARD OF ETHICS

Please **CIRCLE** the number that best represent your answer.

	STATEMENTS	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	THE PROFESSIONAL PERSON					
B9	How do you rate "the criteria for project performance", as in statements B9a - B9f?					
	B9a It was completed within budget	1	2	3	4	5
	B9b It was completed within time	1	2	3	4	5
	B9c It was completed according to specifications	1	2	3	4	5
	B9d It was completed to the client's satisfaction	1	2	3	4	5
	B9e General public satisfaction affected by the project whether during or after construction (e.g. neighbours to the project or any environmental issue)	1	2	3	4	5
	B9f It was completed by upholding ethical principles	1	2	3	4	5
B10	How do you rate the importance of the following parties in B10a - B10d, "when faced with ethical dilemmas and decision - making during work (ethical issues of right or wrong)"?					
	B10a My own interest.	1	2	3	4	5
	B10b The interest of company/organisation	1	2	3	4	5
	B10c The interest of my client	1	2	3	4	5
	B10d The interest of the general public (i.e. social obligation and accountability)	1	2	3	4	5
	THE ORGANISATION					
B11	My company considers ethical practice as an important criterion when meeting and achieving their goals and objectives.	1	2	3	4	5
B12	My top executives frequently refer to the importance of ethics in making this company successful.	1	2	3	4	5
B13	In my company, management "walks its talks". Our culture is such that executives model what they preach.	1	2	3	4	5
B14	My company has a reputation in the market that customers can trust our promises.	1	2	3	4	5
B15	My company has a hotline where people can speak freely and confidentially about their concerns on unethical practices and receive feedback and actions on their complaints.	1	2	3	4	5
B16	My company's best employees stay here because it is a good place to work.	1	2	3	4	5
	THE INDUSTRY					
B17	I perceive that the overall ethical standard of the construction industry in Malaysia is high.	1	2	3	4	5

PART C ETHICAL ISSUES

Below are ethical issues that may occur in the construction industry in Malaysia.
Please answer based on your experience working in the construction industry.

Please **CIRCLE** the number that best represent your answer.

	ETHICAL ISSUES	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	PRE-CONTRACT ISSUES					
	Tendering practice					
C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	1	2	3	4	5
C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	1	2	3	4	5
C3	"Ali Baba" tendering practice	1	2	3	4	5
C4	Lobbying to secure contract	1	2	3	4	5
C5	Commissions to secure contract	1	2	3	4	5
	Confidentiality					
C6	Tenderers' names and prices not confidential to other tenderers	1	2	3	4	5
C7	Tender estimate not confidential to tenderers	1	2	3	4	5
	Tender Sum					
C8	Frequent front-loading of tender sum - high cost in preliminaries	1	2	3	4	5
C9	Frequent front-loading of tender sum - high cost in initial construction works, e.g. earthwork	1	2	3	4	5
	Tender evaluation					
C10	Contract awarded based on lowest tender price	1	2	3	4	5
C11	Political interest in contract award	1	2	3	4	5
C12	Company interest in contract award	1	2	3	4	5
C13	Personal interest in contract award	1	2	3	4	5
C14	Community interest (e.g. neighbours and public) in contract award.	1	2	3	4	5
C15	Insider trading; i.e., *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price)	1	2	3	4	5
	CONSTRUCTION ISSUES					
	Site safety					
C16	Disregard for safety during construction and/or demolition works	1	2	3	4	5
C17	Inadequate protection from debris and hazardous material	1	2	3	4	5
C18	Improper location and storage of material	1	2	3	4	5
C19	Improper installation and usage of temporary works (e.g. scaffolding)	1	2	3	4	5
C20	Inadequate perimeter hoarding at site	1	2	3	4	5
C21	Improper installation and usage of construction machinery	1	2	3	4	5
C22	Unqualified safety officer	1	2	3	4	5
C23	Lack of safety officer	1	2	3	4	5

	ETHICAL ISSUES	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
	Quality of Work					
C24	Poor quality of work due to low contract amount	1	2	3	4	5
C25	Non compliance to specification - poor quality of material in general	1	2	3	4	5
C26	Poor workmanship in general	1	2	3	4	5
C27	Cutting corners because of time pressures	1	2	3	4	5
	Technical competency					
C28	Not competent to handle the job	1	2	3	4	5
C29	Inadequate construction techniques	1	2	3	4	5
	Payment					
C30	Non-payment to consultant and/or contractor	1	2	3	4	5
C31	Delayed payment to consultant and/or contractor	1	2	3	4	5
C32	"Pay when paid" (back to back payment) affecting sub-contractors	1	2	3	4	5
	Claims for work done					
C33	Inflating completed work percentages in progress claims	1	2	3	4	5
C34	Unreasonable costs for variation works	1	2	3	4	5
C35	Unreasonable claims for extension of time	1	2	3	4	5
C36	Inflated claims for loss and expense and damages	1	2	3	4	5
C37	Inflated claims for variation works due to low contract sum	1	2	3	4	5
C38	Abandoning work due to poor project management and cost control	1	2	3	4	5
	Workers					
C40	Employing illegal workers	1	2	3	4	5
C41	The ethics of workers have a negative influence on the overall ethical standard	1	2	3	4	5
	ENVIRONMENTAL ISSUES					
C42	Contamination of soil (e.g., due to spread of harmful substances during construction)	1	2	3	4	5
C43	Lack of proper protection against soil erosion	1	2	3	4	5
C44	Unnecessary clearing of trees or shrubs	1	2	3	4	5
C45	Unnecessary cutting of ground earth	1	2	3	4	5
C46	Dumping of building debris illegally	1	2	3	4	5
	OTHER ISSUES					
	Harassment					
C39	Situations where a party is made responsible for another party's error or negligence					
	Respect for others					
C47	Disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works	1	2	3	4	5
	ENFORCEMENT					
C48	The following parties lack effective reporting procedures and enforcement for unethical practices.					
	C48a Own organisation	1	2	3	4	5
	C48b Professional institutions	1	2	3	4	5
	C48c Industry association (e.g. Contractor's Association)	1	2	3	4	5
	C48d Government	1	2	3	4	5
	POST CONTRACT ISSUES: Defective works					
C49	Non compliance to specification- poor quality of material in general	1	2	3	4	5
C50	Poor workmanship in general	1	2	3	4	5
C51	**The effects of unethical practice are:**					
	C51a The cost of getting our projects built	1	2	3	4	5
	C51b Trust between the project participants - which affects business	1	2	3	4	5
	C51c The long term performance of unethical party	1	2	3	4	5
	C51d Interest of young generation into industry	1	2	3	4	5
	C51e They give the industry a bad image	1	2	3	4	5

PART D FACTORS TO IMPROVE ETHICS

This section of the survey intends to determine factors to improve ethics in the construction industry.

Please **CIRCLE** the number that best represent your answer.

	STATEMENTS	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
	INDIVIDUAL FACTORS					
D1	Education in ethics should start from school.	1	2	3	4	5
D2	Religious and moral education is important in setting high ethical standards.	1	2	3	4	5
	PROFESSIONAL TRAINING FACTORS					
D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.	1	2	3	4	5
D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.	1	2	3	4	5
D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.	1	2	3	4	5
	INDUSTRY FACTORS					
D7	There should be a standard "construction industry" Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.	1	2	3	4	5
D8	Existing or new Code of Ethics should include specific anti-corruption provisions; e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	1	2	3	4	5
D9	The provisions in **D8** above should be stated in contracts and apply to anyone hired to design and construct the project.	1	2	3	4	5
	ORGANISATIONAL FACTORS					
D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by.					
D10	The company's leaders should serve as role models to act ethically	1	2	3	4	5
D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).	1	2	3	4	5
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.	1	2	3	4	5
D13	Whistle blowers to be better protected and more highly regarded. (*Whistle blowing is the act of an employee, informing higher management or the public of unethical or illegal practice by an employee or supervisor)*	1	2	3	4	5
D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.	1	2	3	4	5
D15	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, **how do you rate the following initiatives in a company/organisation**?					
	D15a Appointing an "Ethics Officer"	1	2	3	4	5
	D15b Creating an "Ethics Department/Office"	1	2	3	4	5

	STATEMENTS	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
	SYSTEM AND PROCEDURE IN THE CONSTRUCTION INDUSTRY					
	Tendering and procurement practice					
D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.	1	2	3	4	5
D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.	1	2	3	4	5
D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.	1	2	3	4	5
D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.	1	2	3	4	5
D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exists conflict of interest (for example, a relative) towards any of the parties bidding for contracts.	1	2	3	4	5
D21	Blacklist companies practising unethical practices.	1	2	3	4	5
	Site safety					
D22	Require all workplaces to conduct risk assessments and site management plans.	1	2	3	4	5
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	1	2	3	4	5
D24	Code of ethics should stress the importance of safety.	1	2	3	4	5
D25	Ban contractors with bad safety records from tendering projects.	1	2	3	4	5
D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety.	1	2	3	4	5
D27	Safety criteria should be standardised as guidelines for all concerned.	1	2	3	4	5
D28	Safety training and education to be made compulsory for all concerned.	1	2	3	4	5
	Quality of work					
D29	The client should be more involved in the design and construction process.	1	2	3	4	5
D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.	1	2	3	4	5
D31	Concentrate on efforts to create quality culture within each organisation.	1	2	3	4	5
	Workmanship					
D32	Reduce the number of foreign workers who normally lack trade skills	1	2	3	4	5
D33	In-house training in trade skills for all workers, including foreign workers	1	2	3	4	5
D34	The government to provide incentives to help employers to invest in training programmes	1	2	3	4	5
	Timely payment	1	2	3	4	5
D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.	1	2	3	4	5
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame.	1	2	3	4	5

	STATEMENTS	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
	OTHER FACTORS					
	Environmental ethics					
D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.	1	2	3	4	5
D38	Project information should be shared with the public to obtain their perspectives regarding the project.	1	2	3	4	5
D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations).	1	2	3	4	5
	Legislative enforcement					
D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.	1	2	3	4	5
D41	An 'ombudsman' service for the construction industry should be appointed by the legislative body. *(Function of "ombudsman" is to receive, investigate and report on complaints received of unethical practise within the construction industry)*	1	2	3	4	5
	Accountability and customer satisfaction					
D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.	1	2	3	4	5
D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).	1	2	3	4	5

COMMENTS :

END OF QUESTIONS

THANK YOU

We build many things in life besides structures, but most significantly we build character and earn reputation (FMI/CMAA, 2004)

APPENDIX 3

TABLE 7.5.20: OVERALL RANKING OF ETHICAL ISSUES

Table 7.5.20: Overall ranking of ethical issues

Component issues	No.	Statement	Rank	Mean	Standard Deviation
Construction (payment)	C32	"Pay when paid" (back to back payment) affecting sub-contractors	1	2.36	1.039
Post contract (defective works)	C50	Poor workmanship in general	2	2.41	0.943
Construction (quality of work)	C24	Poor quality of work due to low contract amount	3	2.44	1.119
Post contract (defective works)	C49	Non compliance to specification- poor quality of material in general	4	2.48	0.947
Construction (workers)	C41	The ethics of workers has a negative influence on the overall ethical standard	5	2.48	0.994
Environmental ethics	C43	Lack of proper protection against soil erosion	6	2.55	1.008
Construction (work done)	C33	Inflating completed work percentages in progress claims	7	2.60	0.919
Pre-contract (tendering practice)	C2	Tenderers overstating their qualifications, experience and capabilities to secure contract	8	2.60	1.086
Construction issue (payment)	C31	Delayed payment to consultant and/or contractor	9	2.61	1.102
Pre-contract (tendering practice)	C4	Lobbying to secure contract	10	2.61	1.232
Construction (work done)	C38	Abandoning work due to poor project management and cost control	11	2.63	1.026
Environmental ethics	C46	Dumping of building debris illegally	12	2.63	1.167
Construction (quality of work)	C25	Non compliance to specification - poor quality of material in general	13	2.64	1.105
Construction (quality of work)	C26	Poor workmanship in general	14	2.65	1.043
Construction (work done)	C37	Inflated claims for variation works due to contract amount which is low	15	2.66	1.033
Construction (quality of work)	C27	Cutting corners because of time pressures	16	2.66	1.126
Environmental ethics	C44	Unnecessary clearing of trees or shrubs	17	2.67	1.030
Environmental ethics	C45	Unnecessary cutting of ground earth	18	2.70	1.060
Construction (workers)	C40	Employing illegal workers	19	2.70	1.127
Construction issue (work done)	C36	Inflated claims for loss and expense and damages	20	2.73	0.995
Construction (site safety)	C23	Lack of safety officer	21	2.73	1.183
Construction (work done)	C34	Unreasonable costs for variation works	22	2.74	1.034
Construction (work done)	C35	Unreasonable claims for extension of time	23	2.75	1.055
Pre-contract (tender sum)	C9	Frequent front-loading of tender sum (high cost in initial construction works, e.g. foundation).	24	2.76	0.859
Environmental ethics	C42	Contamination of soil (e.g., due to spread of harmful substances during construction	25	2.76	0.995

Table 7.6.20: Overall ranking of ethical issues (continued)					
Component issues	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation**
Others (harassment)	C39	Situations where a party is made responsible for another party's error or negligence	26	2.77	0.969
Construction (technical competency)	C29	Inadequate construction techniques	27	2.80	0.984
Pre - contract (evaluation of tender)	C12	Company interest in contract award	28	2.80	1.089
Construction (technical competency)	C28	Not competent to handle the job	29	2.82	0.992
Pre-contract (tendering practice)	C1	Tendering at a low price (which does not reflect the true project cost) in order to secure contract.	30	2.82	1.169
Pre-contract (tender evaluation)	C11	Political interest in contract award	31	2.83	1.326
Construction (site safety)	C17	Inadequate protection from debris and hazardous material	32	2.84	1.197
Pre-contract (tender sum)	C8	Frequent front-loading of tender sum (high cost in preliminaries)	33	2.85	0.934
Pre-contract (tendering practice)	C5	Commissions or compensation to secure contract	34	2.85	1.210
Pre-contract (tender evaluation)	C10	Contract awarded based on lowest tender price	35	2.87	1.155
Others (respect for others)	C47	Disregarding respect and sensitivity towards culture, religion and heritage of the public and local community, which was, affected by the construction works	36	2.87	1.054
Construction (site safety)	C18	Improper location and storage of material	37	2.87	1.163
Pre-contract (tendering practice)	C3	"Ali Baba" tendering practice	38	2.88	1.288
Construction (site safety)	C19	Improper installation and usage of temporary works (e.g. scaffolding)	39	2.94	1.201
Construction (payment)	C30	Non-payment to consultant and/or contractor	40	2.95	1.139
Construction (site safety)	C22	Unqualified safety officer	41	2.95	1.196
Pre-contract (tender evaluation)	C15	Insider trading i.e. *ability to make deals based on knowledge others do not have or not able to obtain in ordinary ways* (e.g. pre-agreement before contract award for tiles or ironmongery specification, or, pre-agreement of lowest tender price)	42	2.98	0.992
Construction (site safety)	C16	Disregard for safety during construction and/or demolition works	43	3.00	1.215
Construction (site safety)	C20	Inadequate perimeter hoarding at site	44	3.02	1.103
Pre-contract (tender evaluation)	C14	Community interest (e.g. neighbours and public) in contract award.	45	3.05	1.002
Construction (site safety)	C21	Improper installation and usage of construction machinery	46	3.06	1.128

Table 7.6.20: Overall ranking of ethical issues (continued)					
Component issues	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation**
Pre-contract (tender evaluation)	C13	Personal interest in contract award	47	3.19	1.125
Pre-contract (confidentiality)	C6	Tenderers' names and prices not confidential to other tenderers	48	3.24	1.156
Pre-contract (confidentiality)	C7	Tender estimate not confidential to tenderers	49	3.33	1.208

APPENDIX 4

TABLE 7.6.16: OVERALL RANKING OF FACTORS TO IMPROVE ETHICS

Table 7.6.16: Overall ranking of factors to improve ethics

Component factor	No.	Statement	Rank	Mean	Standard Deviation
Individual	D2	Religious and moral education is important in setting high ethical standards.	1	1.43	0.607
Organisational	D10	The company's leaders should serve as role models to act ethically	2	1.47	0.574
Individual	D1	Education in ethics should start from school.	3	1.47	0.610
System and procedure in the industry (site safety)	D28	Safety training and education to made compulsory for all concerned.	4	1.64	0.598
Industry	D8	Existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	5	1.65	0.647
System and procedure in the industry (procurement and tendering practice)	D21	Blacklist companies practising unethical practices.	6	1.66	0.852
System and procedure in the industry (procurement and tendering practice)	D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.	7	1.69	0.644
Organisational	D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.	8	1.69	0.658
System and procedure in the industry (site safety)	D24	Code of ethics should stress the importance of safety.	9	1.70	0.523
System and procedure in the industry (site safety)	D25	Ban contractors with bad safety records from tendering projects.	10	1.70	0.730
System and procedure in the industry (site safety)	D27	Safety criteria should be standardised as guidelines for all concerned.	11	1.71	0.559
Organisational	D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).	12	1.71	0.610
Industry	D7	There should be a standard "construction industry" Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.	13	1.75	0.608
Organisational	D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by.	14	1.75	0.609

Table 7.6.16: Overall ranking of factors to improve ethics (continued)					
Component factor	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation**
Professional training factors	D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.	15	1.75	0.674
Industry	D9	The provisions in D8 above should be stated in contracts and apply to anyone hired to design and construct the project. D8: "existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".	16	1.75	0.752
System and procedure in the industry (quality of work)	D31	Concentrate on efforts to create quality culture within each organisation.	17	1.78	0.599
System and procedure in the industry (workmanship)	D33	In-house training in trade skills for all workers, including foreign workers	18	1.80	0.561
System and procedure in the industry (workmanship)	D34	The government to provide incentives to help employers to invest in training programmes	19	1.80	0.660
System and procedure in the industry (procurement and tendering practice)	D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exist conflict of interest (for example, a relative) towards any of the parties bidding for contracts.	20	1.80	0.677
System and procedure in the industry (site safety)	D22	Require all workplaces to conduct risk assessments and site management plans.	21	1.81	0.534
System and procedure in the industry (site safety)	D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety.	22	1.81	0.604
Legislative enforcement	D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.	23	1.81	0.676
System and procedure in the industry (quality of work)	D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.	24	1.83	0.586
System and procedure in the industry (site safety)	D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.	25	1.84	0.629
Environmental ethics	D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations).	26	1.86	0.710
Accountability and customer satisfaction	D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.	27	1.91	0.624

Table 7.6.16: Overall ranking of factors to improve ethics (continued)					
Component factor	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation**
Professional training factors	D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.	28	1.93	0.741
Legislative enforcement	D41	An 'ombudsman' service for the construction industry should be appointed by the legislative body.	29	1.95	0.750
System and procedure in the industry (procurement and tendering practice)	D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.	30	1.97	0.680
Organisational	D13	Whistle blowers to be better protected and more highly regarded.	31	1.98	0.755
Environmental ethics	D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.	32	1.98	0.576
Accountability and customer satisfaction	D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).	33	1.98	0.674
System and procedure in the industry (timely payment)	D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.	34	1.99	0.890
System and procedure in the industry (timely payment)	D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame.	35	2.00	0.830
Organisational	D29	The client should be more involved in the design and construction process.	36	2.02	0.813
Organisational	D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.	37	2.05	0.725
System and procedure in the industry (workmanship)	D32	Reduce the number of foreign workers who normally lack trade skills	38	2.16	0.850
Professional training factors	D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.	39	2.18	0.860
Environmental ethics	D38	Project information should be shared with the public to obtain their perspectives regarding the project.	40	2.23	0.788
System and procedure in the industry (procurement and tendering practice)	D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.	41	2.28	0.867
System and procedure in the industry (procurement and tendering practice)	D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest and not reflecting the true project cost.	42	2.45	1.008

Table 7.6.16: Overall ranking of factors to improve ethics (continued)					
Component factor	**No.**	**Statement**	**Rank**	**Mean**	**Standard Deviation**
Organisational	D15A	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, **how do you rate the following initiatives in a company/organisation**? Appointing an "Ethics Officer"	43	2.62	0.886
Organisational	D15B	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, **how do you rate the following initiatives in a company/organisation**? Creating an "Ethics Department/Office"	44	2.63	0.948

APPENDIX 5

TABLE 8.3: FACTORS TO IMPROVE ETHICS IN THE CONSTRUCTION INDUSTRY

Table 8.3: Factors to improve ethics in the construction industry

STATEMENT NO.	FACTORS IN THE FRAMEWORK : Components and sub-components
	INDIVIDUAL FACTORS
D1	Education in ethics should start from school.
D2	Religious and moral education is important in setting high ethical standards.
	PROFESSIONAL TRAINING FACTORS
D3	Ethics related subjects in the present construction and engineering curriculum at college/university is inadequate and should be reviewed.
D4	The present Codes of Ethics or Conduct from professional institutions are inadequate and should be reviewed.
D5	There should be more ethics training at industry level imposed by professional institutions, by attending a set number of hours/activities of CPD every year.
	INDUSTRY FACTORS
D7	There should be a standard "construction industry" Code of Ethics, common, to all construction participants to cover responsibilities, obligations, competence and impartiality that everyone in the industry has to abide by.
D8	Existing or new Code of Ethics should include specific anti-corruption provisions, e.g., "zero tolerance approach for bribery, fraud, deception or corruption in any design and construction work".
D9	The provisions in **D8** above should be stated in contracts and apply to anyone hired to design and construct the project.
	ORGANISATIONAL FACTORS
D6	All construction related companies/organisation should have a formal Code of Ethics that everyone in the company / organisation has to abide by.
D10	The company's leaders should serve as role models to act ethically
D11	Ethics and social responsibility should be considered when determining an individual's competence and "reward" criteria (e.g. for promotion or job reference).
D12	Better remunerations, incentives and working environment so as employees are comfortable and committed.
D13	Whistle blowers to be better protected and more highly regarded. (*Whistle blowing is the act of an employee, informing higher management or the public of unethical or illegal practice by an employee or supervisor)*
D14	For transparency purposes, in addition to financial report, companies / organisation should also publish Report on Corporate activities.
D15	In order for the, i) compliance, implementing and enforcement of code of ethics, ii) procedures for reporting and investigating ethical concerns within the company, and, iii) conducting ethics training program, **how do you rate the following initiatives in a company/organisation**?
	D15a Appointing an "Ethics Officer"
	D15b Creating an "Ethics Department/Office"
	SYSTEM AND PROCEDURE IN THE CONSTRUCTION INDUSTRY
	Tendering and procurement practice
D16	Pre-qualification adopted to set a barrier for entry and limits tenderers who are capable and responsible.
D17	Negotiated tendering adopted to set a barrier for entry and limits tenderers who are capable and responsible.
D18	Open tendering not relevant for mega projects (more than RM100 million) because of competitiveness to be the lowest which may not reflect the true project cost.
D19	Party awarding contract must determine that the contractor is financially, operationally, and morally responsible.
D20	A "declaration statement" is necessary, for any individuals on the side of the party awarding the contract, if, there exist conflict of interest (for example, a relative) towards any of the parties bidding for contracts.
D21	Blacklist companies practising unethical practices.

Table 8.3: Factors to improve ethics in the construction industry (continued)	
STATEMENT NO.	**FACTORS IN THE FRAMEWORK : Components and sub-components**
	Site safety
D22	Require all workplaces to conduct risk assessments and site management plans.
D23	Stiffer fines and stringent regulatory procedures by relevant regulatory body for poor safety management.
D24	Code of ethics should stress the importance of safety.
D25	Ban contractors with bad safety records from tendering projects.
D26	Hold campaigns to raise awareness of importance of workplace safety and urge employers and workers to take responsibility for workplace safety.
D27	Safety criteria should be standardised as guidelines for all concerned.
D28	Safety training and education to made compulsory for all concerned.
	Quality of work
D29	The client should be more involved in the design and construction process.
D30	Compulsory benchmarking tools as a means of monitoring and measuring quality of construction work on all projects.
D31	Concentrate on efforts to create quality culture within each organisation.
	Workmanship
D32	Reduce the number of foreign workers who normally lack trade skills
D33	In-house training in trade skills for all workers, including foreign workers
D34	The government to provide incentives to help employers to invest in training programmes
	Timely payment
D35	Direct payment policy to sub-contractors and suppliers should be adopted by all clients, whenever necessary.
D36	Enforce compulsory compensation from clients when payments are not honoured within the stipulated time frame.
	OTHER FACTORS
	Environmental ethics
D37	Managing public reactions and opinions and understanding public attitudes are an integral part and responsibility of all construction participants and clients.
D38	Project information should be shared with the public to obtain their perspectives regarding the project.
D39	Stiffer fines and stringent regulatory procedures by relevant regulatory body to deter any acts or violations of the rules imposed upon the project (e.g. EIA violations).
	Legislative enforcement
D40	There should be specific laws imposed by the government to "check" unethical practises in the industry.
D41	An 'ombudsman' service for the construction industry should be appointed by the legislative body. *(Function of "ombudsman" is to receive, investigate and report on complaints received of unethical practise within the construction industry)*
	Accountability and customer satisfaction
D42	For projects carried out for specific clients, the "Customer Satisfaction Index" should be used to measure satisfaction and value.
D43	For projects carried out for general public, a "Public Satisfaction Index" should be used to monitor satisfaction and accountability (transparency and value).

Note: There are altogether 44 factors to improve ethics, since factor D15 is made up of two factors: D15a and D15b.