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SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

STUDY ON THE PRACTICE OF PROFESSIONAL ETHICS AND ITS EFFECTS ON 20/80 CONDOMINIUM PROJECTS OF ADDIS ABABA CITY

MSc THESIS IN CONSTRUCTION TECHNOLOGY AND MANAGEMENT

BY

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Civil and Environmental Engineering

Construction Technology and Management Stream

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DECLARATION

I declare that this thesis entitled "**STUDY ON THE PRACTICE OF PROFFESSIONAL ETHICS AND ITS EFFECT ON 20/80 CONDOMINIUM PROJECTS OF ADDIS ABABA CITY**" is my original work. The work has not been presented elsewhere and that all sources of materials used for this paper have been properly acknowledged.

Name of Researcher: Hanna Mulugeta Signature: _____ Date: _____

APPROVAL

As member of the board of examiners, we certify that we have read, evaluated the thesis prepared by **Hanna Mulugeta** and examined the candidate. We recommended that the thesis has full filled the requirement for the degree of Master of Science with specialization in Construction Technology and Management Stream.

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ABBREVIATIONS

ASCE – American Society of Civil Engineers

AU -African Union

BOQ- Bill of Quantity

CMAA- Construction Management Association of America

GTZ- German Technical Corporation

HA- Alternative Hypothesis

H0 -Null Hypothesis

IHDP -Integrated Housing Development Program

ICE- Institution of Civil Engineers

ISO-International standards organization

MSE -Micro and Small Enterprises

NCOP -National Code of Practice

SD-Standard deviation

SPSS- Scientific Package for social science

TQM - Total Quality Management

UNHABITAT - United Nations Human Settlement Program

ABSTRACT

Professionals play a major role in determining the success and failure of construction projects, since they have direct involvements in every stage of the construction. Taking that into consideration, this research is conducted to identify the practice of professional ethics and its effect on 20/80 condominium projects. It also uncovered the most prevalent unethical practices in 20/80 condominium projects and the contributing factors for those unethical practices. A questionnaire survey using random sampling and interviews using purposive sampling were conducted on professionals currently working on 20/80 condominium projects.

The findings indicate that various forms of unethical conducts are prevalent in 20/80 condominium projects which are adversely affecting the quality, time and cost of the projects. The most unethical practices on the side of the contractors were found to be theft; illegal bidding practices, purchasing substandard materials to save money, negligence and lack of qualification. Whereas, consultant related unethical practices were found to be negligence, bribery, lack of loyalty to the client and compromising quality for one's own personal need. Fraud in the BOQ, high cost estimation to share excess cost, negligence and taking biased measure are the most unethical practices of the quantity surveyors.

This paper also suggests ways to enhance ethical professionalism among construction professionals including: imposing heavier penalties on those who are found to act unethically, giving ethics-training programmes, creating a strong management team and strict monitoring and evaluation in every stage of the project.

Professional ethics is a pre-requisite to attain a sustained and acceptable standard of success in 20/80 condominium projects, due to that serious attention has to be given to complete the projects with the planned time, planned budget and the expected quality. The findings from the study are expected to give a good base to the government, construction professionals and the policy makers in detecting and preventing unethical practices in 20/80 condominium projects of Addis Ababa.

Keywords: Professional ethics, unethical practices, 20/80 condominium projects, success of projects.

1. INTRODUCTION

1.1. Background

Housing is one of the basic needs a person has to get in life. As a result, providing house for low and middle income group is one of the components of urban development program in poverty reduction scheme in Ethiopia.

Ethiopia initiated the Integrated Housing Development Program (IHDP) in order to reduce the shortage of housing and this has been implemented the past few years. The housing projects in Addis Ababa that are divided into four different categories based on payment modalities are 10/90, 20/80, 40/60 and housing association. To achieve this, a number of resources are needed including: finance, materials and human resources. For effectively using the resources and achieve the expected outcome with the right time, quality and cost, professional ethics plays a major role.

In this complex and dynamic world of work, it is becoming harder to live and work by values and behaviors that are based on integrity and principles. Construction industry is one of the most susceptible sectors for ethical concerns. The issues of professional ethics within the construction industry affect a wide spectrum of population. The local authorities, the public works, client organizations, consultants, suppliers, contractors, and users of public infrastructure, are all within the scope of professional ethics. Negligence, fraud, bribery, and compromising quality for one's own personal needs are among the commonly experienced unethical practices in 20/80 condominium projects.

The general situation observed currently in housing construction, specifically 20/80 condominium projects are characterized with poor quality work, cost and time overruns. One of the major causes for poor functioning of the construction industry is because professional ethics has not been given proper attention and taken into consideration in all phases of the project.

To address this challenge, assessment of the perceptions of construction professionals regarding ethical issues and the effect it has in Addis Ababa 20/80 condominium projects

has become an important part of the study, as it determines the success or failure of the construction projects.

1.2. Statement of the problem

In the housing construction specifically in 20/80 condominium constructions, projects are not completed within the planned cost, scheduled time and required quality (UN-HABITAT, 2011). Quality is sometimes ignored in this industry to cut the costs or to shorten the project time. However, there is a perception that majority of quality-related issues are caused by human factor. Corruption and many unethical conducts are becoming very common in the construction industry.

Since construction is playing a major role for the country's development, poor professional ethics have an adverse effect on the industry, the public and can directly or indirectly affect the country's development as a whole. Accordingly, public construction projects takes up an average annual rate of around 60% of the government's capital budget (MoWUD, 2006). Furthermore, the construction industry in Ethiopia accounts for 9.4 % of the Gross Domestic Product (GDP) (Wondifraw, 2015). This indicates how the success of the construction industry is directly related with the country's economy and professional ethics is believed to be a determining factor to achieve that (Abhay Tawalare and Sudhir Reddy, 2018).

The cause of ethical failure in an organization can often be traced to its organizational culture and the failure on the part of the leadership to actively promote ethical practices. Whilst personal ethics are a reflection of beliefs, values, personality and background, any propensity a person may have towards ethical conduct is strongly influenced by the value systems reflected by their employing organization. This often results in one's personal sense of what is right and wrong becoming buried amongst an organization's non-observance of professional ethics (J Mason, 2009). So assessing the practice of ethics of the professionals toward their job indicates the culture of professional ethics on the 20/80 condominium projects.

The practice of profession poses challenging ethical questions for which a working knowledge of ethics and professionalism is critical to the construction players. Professionals have the fundamental right to perform with responsibility and accountability in their line of work. Professional ethics should be driven by personal ethics, where a balance of both the

requirements of the client and the impact on the society should be maintained by the professionals when making decisions.

Professional ethics is defined as a system of norms so that both the morality and behavior of professionals could be dealt with in their day-to-day practice by this system. In the profession of building and designing, people life which is the most priceless would be compromised if the highest moral values are not actually taken into consideration (Vee and Skitmore, 2003). Since the profession of construction has direct effect on the lives of people, these professionals owe special moral responsibility. However, it has been suggested that professionals in general tend to believe that their obligations to their clients far outweigh their responsibility to others, such as public. This is one of the contributing factors for unethical practices. Because of their knowledge and importance in society, engineers should have standard of conduct to answer ethical questions. Rather than responding and doing things according to the standard of conduct, professionals keep on deciding on issues on their will and personal benefits. This will cause a major problem on the project and the public to be served (Githu: Donatus Mathenge, 2012).

Therefore, this study provides an indication of the current trends of professional practice on 20/80 condominium projects in Addis Ababa and points out the contributing factors for poor professional ethics. It also shows how professional ethics affected the construction projects and suggests solutions to reduce unethical practices and bring convenience to all parties concerned which finally brings the success of the project into reality.

1.3. Research Questions

The following research questions are going to be answered in the research

1. What unethical practices are the most prevalent in 20/80 condominium projects?
2. Is there any code of ethics where the professionals consider as a guide in the projects?
3. Are the constructions executed according to the code of ethics?
4. What are the factors for poor professional ethics in 20/80 condominium projects?
5. What are the effects of professional ethics on the 20/80 condominium projects?
6. How can we improve professional ethics in 20/80 condominium projects?

1.4. Objectives of the Research

1.4.1. General Objective

20/80 condominium project is for the lower middle income people of Addis Ababa city where they are required to pay only 20% and the government will give loan to the other 80% so the people in the city could own a house. Even it is a great idea which can support the mass but it is facing major challenges in time extension, cost overrun and quality issues. So rather than externalizing the problems and looking for solutions, it is best to pause and ask who plays the first hand role in these projects, it is the professionals. The professionals are the ones who have the knowledge on how to do the condominium projects with the planned time, the best quality possible and the planned cost. If there is lack of professional ethics, it is obvious that will cause a major challenge on the project. So this study takes professional ethics into question behind all the major challenges that are seen in the projects.

The general objective of this research is to

- Provide an indication of the current trends regarding professional ethics and study the effects on 20/80 condominium projects in Addis Ababa city.

1.4.2. Specific Objectives

This main objective would be supported by these sub objectives:

- To study the overall level of professional ethics in 20/80 condominium projects.
- Identifying the most prevalent unethical practice in 20/80 condominium projects.
- To identify the contributing factors for poor professional ethics in 20/80 condominium projects.
- To study the effects of professional ethics in 20/80 condominium projects.
- Looking for possible ways to improve professional ethics in 20/80 condominium projects.

1.5. Scope of the Study

The research study will assess the practice of professional ethics in 20/80 condominium projects in Addis Ababa city. Due to limited time and budget the study randomly selected only 5 sub cities which are considered to be representative of the 10 sub cities in Addis

Ababa. Those are Arada, Yeka, Ledeta, Bole and Kolfe Keraniyo sub cities. It focuses on the professionals that are contractors, consultants and quantity surveyors. It studies the trends of the professionals with relation to their knowledge and experience on the project. It also shows how the current trend of professional Ethics is and how it is affecting the 20/80 condominium projects.

1.6. Limitation of the Study

The nonpublic nature of unethical behavior suggests that accurate information about individuals' behavior may not be available. Some researchers have projected that, assessing ethical behavior takes exploring perceptions rather than studying the actual behavior of the professionals (O.J.Ameh and K.T.Odusami, 2009).Therefore, while perception surveys do not constitute an actual measure of behavior; they offer an indication of how a person may behave in the real sense because perceptions are based on facts. In addition to the questionnaire an interview is also conducted on this study to reduce the effect of this limitation.

The other limitation is the effect of professional ethics on 20/80 condominium projects is assessed based on the professional's knowledge of professional ethics, their opinions and their experience while they are working on the projects. No other assessment has been done to assess the actual effect it caused on the projects.

1.7. Significance of the Study

The construction project achievement mainly relies on the conduct of the people taking part in the project from the early start to completion stages. So it is crystal clear that the act of the professionals will directly or indirectly affect the construction project. This study will create awareness on how professional ethics is important for a project success and has a wider benefit for the public, the environment, and the construction industry which is now considered as the backbone of the country. It is also a good indication on how professional ethics is practiced and to what extent is the code of ethics implemented on 20/80 condominium projects. It also helps to know what the basic factors are that disable the professionals to properly implement professional ethics and clearly states the effect it has on the projects. Thus, this study is considered significant for the following reasons

- This study will create awareness about professional ethics
- This study will be important both for building professionals and the general public because it will create awareness on how poor professional ethics can adversely affect projects.
- It clearly indicates the trends of professional practices on 20/80 condominium projects
- It implicates the contributing factors for poor professional ethics on 20/80 condominium projects
- It suggests ways how to make ethical professionals and improve the success of 20/80 condominium projects.
- This research will serve as a resource base to scholars and researchers interested in carrying out further research in this area.

1.8. Organization of the Study

This thesis is composed of five parts in which;

Chapter one contains the introduction and statement of the problem where the major problems of the study is discussed. The objective and the significance of the study together with the research questions are also discussed. The limitation of the study is also included in this chapter.

Chapter two deals about reviewing literatures on related topics and gaps identified.

Chapter three discusses the research design and methodology used in the research.

Chapter four deals with the analysis of the data gathered and discussion of the result.

Chapter five which is the last part deals about the conclusions, the recommendations and suggestions for future works.

2. LITERATURE REVIEW

2.1. Integrated housing development program

2.1.1. Condominium Housing History

The concept of condominium is quite old. There is an evidence that parts of a building are sold, in ancient Babylon (modern Iraq), during the First Dynasty, nearly two centuries before the birth of Christ, and there is also a record of the use of the system among the Greeks, Egyptians, and others. It was during the Middle Ages, when walls were constructed to enclose cities in order to provide security; that building space became scarce in many European cities. This scarcity of space led to individual ownership of parts of a building, sometimes even individual ownership of single rooms, in cities such as Orleans and Paris (Bennett S.Donna, 2014). But, there was an informal ownership of floors or parts of buildings in countries such as Austria, Switzerland, and Germany as early as the twelfth century, especially among the poorer citizens (Bennett S.Donna, 2014).

In the early 1990s, Central and Eastern Europe's' (CEE) transition of socialism to the market economy has marked the privatization of government owned houses. Large apartment buildings, built and maintained by the central government and later on rented to the people were transferred to the condominium form of ownership. Thus, condominium housing is a form of residence that is affordable and provides an opportunity to own property in desirable areas, without the financial difficulty to own a land in most part of the world including the United States of America, Europe, Africa (S.Carol Rabenhorst, 2012).

In Ethiopia the idea of Condominium housing as a separate form of ownership was not familiar until 2005(Ministry of Urban Development and Housing, 2013). In 2005, the government of Ethiopia considered building houses and providing it to the public as one of the most important developmental tasks in reducing poverty and improving the livelihoods of slum dwellers; and thus bringing sustainable socioeconomic development, which established a National Integrated Housing Development Program under the then Ministry of Works and Urban Development, later renamed as the Ministry of Urban Development and Construction (Ministry of Urban Development and Housing, 2013).

The Integrated Housing Development Program (IHDP) is a government-led and financed housing provision program for low-and middle-income urban households in Ethiopia. The program was launched in 2004 (1996 in Ethiopian calendar) by the then State Minister Arkebe Equbay, and later Mayor of Addis Ababa who was the driving force behind this program. The main goal was to construct low-cost housing units in Addis Ababa. As a starting menu, the City Administration of Addis Ababa, in collaboration with the German Technical Corporation (GTZ) office commenced the design and construction of a pilot condominium housing project in the neighborhood of Bole Gerji (UNHABITAT, 2010). It was also planned that new condominium blocks would be constructed comprising 400,000 housing units throughout the country, 175,000 of which would be located in greater Addis Ababa by the end of 2010 (Mukudi-Omwami, 2017). Table 2.1 indicates the schemes of Addis Ababa housing development program. It shows the target population, the advance payment and the long term loan the government provides for the public.

Table 2.1 Schemes of the Addis Ababa Housing Development Program (UN-HABITAT, 2011)

Scheme of project	Targeted population	Advance payment (%)	Long-term loan (%)
10/90	Low income	10	90
20/80	Lower middle income	20	80
40/60	Upper middle income	40	60
Housing Association	High income	100	

2.1.2. Condominium housing project purpose

The condominium housing project was expected to contribute significantly to poverty reduction by increasing housing supply for the low-income population, creating new jobs, many of which would go to unskilled laborers, reducing urban unemployment by half. At the same time, the programme was designed to expand the capacity of the domestic construction industry by training and employing additional contractors, engineers, and

foremen who would be needed to build these housing units. The programme was also expected to provide more opportunities for micro and small enterprises. The total effect of the programme was supposed to improve wealth creation and wealth distribution throughout the country. It was envisioned that it would create a great opportunity for the employees, as they became more secure and able to save some of their income, they would be able to have resources that could be used to buy a house on their own. Recognizing existing urban slum areas and alleviate further expansions in the future was also one of the purposes of this condominium housing projects. The plan was to clear all slums from the city within 10 years, reducing slum areas by 50% and to provide the path for Ethiopia becoming a middle-income country by 2025(UN-HABITAT, 2011)

The program is believed to be significant for four principal reasons. These are as stated in UN-HABITAT, 2011:-

1. Large scale

It is a large scale approach program which was basically designed to address the current housing problems, the poor quality of the existing housing supply, and the future housing needs due to continued urbanization.

2. Pro-poor

The programme addresses the low- and middle-income households, who are living in poor housing conditions to get access for improved housing. By constructing durable, fully-serviced housing units the living condition, security of tenure and their access to basic needs can be achieved. The program has also facilitated access to credit for the low income population through commercial bank of Ethiopia.

Even if the program targeted the low-income sector of the population, unfortunately experience has shown that the ‘poorest of the poor’ are not benefiting from the IHDP due to inability to afford the initial down-payment and monthly service payments. The ‘poorest of the poor’ are obligated to exclude themselves because they are not financially capable to pay the required down-payment.

3. Slum prevention and access to homeownership

The program works to meet the need of the low income sector of the population by improving their living standard and reducing the urban slum prevalence rates in Ethiopia.

4. Integrated approach to housing and economic development

The programme takes into consideration, the opportunity for housing to help the economy, create employment, and improve the capacity of the construction and financial sectors. The adoption of cost-effective construction techniques, specifically pre-cast concrete elements, have reduced construction costs (by up to30 per cent) compared with conventional systems, improved the speed of construction, and facilitated the development of small and medium enterprises to produce construction elements.

The United Nations Development Program, Human Development Index made in 2012 showed that, Ethiopia ranked 173rd out of 186 countries. With a population of 86.5 million, Ethiopia is the second most populous country in Africa. It is urbanizing at annual growth rate of 3.76 per cent. Studies indicate that 40 per cent of the Ethiopian population lives below the poverty line (Ministry of Urban Development and Housing, 2013). As stated in the urban housing supply strategy about 67.2 per cent urban dwellers are in low annual income group (Ministry of Urban Development and Housing, 2013). The overall unemployment rate stands at about 25 percent while urban unemployment rate is 17.5 percent in 2012 (IMF Country report, 2013).

The high population growth in urban cities is contributing for the mass population to live in substandard slum housing which needs either complete replacement or significant upgrading. There is high level of homelessness, environmental degradation, urban deterioration, a high shortage of infrastructure and basic services, and high unemployment (UN-HABITAT, 2011).

So, constructing condominium housing in Ethiopia helps to enable low-income urban dwellers to acquire homes of their own, alleviation of urban poverty through the participation of Micro and Small Enterprises (MSE) and creation of employment opportunities in the construction sector which can absorb more labor force, changing the

image of the city so as to meet international standards, transfer of knowledge and skill to the construction industry, promoting cost efficient housing construction technology, empowering citizens of the city through ownership of houses and tenure security (Ministry of Urban Development and Housing, 2013).

The programme aims to produce low-cost housing but not in the expense of quality. Nonetheless, there are concerns over the quality of the built constructions. For example, there have been reports of burst sewerage pipes that leaked through all floors and wide-spread cracking of wall plaster. The expected lifespan of the units is 100 years, although local professionals and residents doubt the validity of these predictions. Construction quality is affected by micro and small enterprises seeking to make additional profit by using cheaper substandard fixtures, such as doors and door handles, as well as the low levels of construction skills and capacity, which is somewhat understandable considering the vast numbers of recently employed inexperienced contractors and builders necessary for projects of this scale(UN-HABITAT, 2011).

In addition to construction quality, construction delays are a major issue facing the programme. The productivity of the construction phase has not been as efficient as planned during the programme's implementation thus far due to gross material shortages, a lack of adequate infrastructure, and poor construction management delaying completion by as much as a year on some sites. Approximately 50 per cent of condominium sites were behind schedule because of delays in the building of infrastructure (UN-HABITAT, 2011).

For the major challenges that are facing the program, shortage of materials, lack of adequate infrastructure , the system of the government are considered as the causes. Since these can be the causes for the delay, quality issues and cost over runs in the projects, but it also gives a way to externalize the problem and look for the solution outside of the box which would be ignoring the major cause. So it's better to ask oneself, do I really do my job properly? Am I really ethical as a construction professional? What problems do I cause on the project due to my poor professional ethics? How can I improve my professional ethics? When every professional answer these, then it will be easy working on solutions.

2.2. Ethics

2.2.1. Definition

Ethics is a branch of philosophy for the study and understanding of morality, moral principles, and the moral decision-making process in particular the varieties of thinking by which human conduct is guided and may be appraised. Ethics refers to a code or set of principles by which people live (Linda C. N. and Paul, 2009).

Ethics is generally defined as a system of moral principles, by which human actions and proposals may be judged good or bad, right or wrong; and the rules of conduct recognized in respect of a particular class of human actions (Oxford Dictionary, 1999). Ethics can be considered as a moral principle by which a person is guided. Ethics is something that is to be applied every day, it is not a onetime thing rather it is a way of living. It is a way to know that your beliefs are valuable and standing by that value, while respecting other people values.

There is no one and absolute way of defining ethics, it doesn't only mean how we behave towards others, but also the way in which we keep to the honesty of our own thinking, drawing the line somewhere, feeling temptation but resisting it, the line of conduct that pays, the science which investigates the general principles for determining the true worth of the ultimate ends of human conduct (Robert Berg and Jimmie Hinze, 2005).

An ethical decision is defined as a decision that is both legal and morally acceptable to the larger community. On the other contrary, an unethical decision is either illegal or morally unacceptable to the wider community (Linda C. N. and Paul, 2009).

2.2.2. Professional

Professional is a person who has attained a high degree of professional competence in a particular activity. It is stated that the word professional denotes a person who is highly educated, enjoys work autonomy, earns a comfortable salary, and engages in creative and intellectually challenging work (J.Ogachi, 2011).

Profession is an occupation in which an individual uses an intellectual skill based on an established body of knowledge and practice to provide a specialized service in a defined area, exercising independent judgment in accordance with a code of ethics and in the public

interest. Profession has been described as a group of people organized to serve a body of specialized knowledge in the interests of society (Vee and Skitmore, 2003).

'Professionalism' is the possession and autonomous control of a body of specialized knowledge, which when combined with honorific status, confers power upon its holders (Hamzah Abdul-Rahman, 2013). Profession is an occupation which requires both advanced study and mastery of a specialized body of knowledge and undertaken to promote, ensure or safeguard some matter that noticeably affects others wellbeing(Vee and Skitmore, 2003). It also has the ability to accept the responsibility to act in the public interest which requires an overt commitment by its attachment to subdue personal advancement to this responsibility.

Abd Rahman A. (2008) argued that professionals must be capable in all criteria for the field of work. These criteria's are:

- Highest academic qualifications such as university, college or institute.
- Expert and specialized knowledge in field which one is practicing professionally.
- Excellent manual or practical and literary skills in relation to the profession one is working at.
- High quality work in creations, products, services, presentations, consultancy, primary or other research, administrative, marketing or other work endeavors.
- High standard of professional ethics, behavior and work activities while carrying out one's Profession (as an employee, self-employed person, enterprise, business, company, or partnership)
- Reasonable amount of professional working experience.

2.2.3. Professional ethics

Professional ethics is a set of standards adopted by a professional community. Professional ethics are regulated by standards, which are often referred to as codes of ethics. The task of a code of ethics is not to derive obligations from first principles on the professionals, but to bring out what the public expects from the profession. Professionals are not exempt from the common ethical behaviors such as obligations, duties and responsibilities that are binding on ordinary people and are usually bound by a set of principles, attitudes or types of character dispositions that control the way the profession is practiced. This has been termed Professional Ethics, and concerns potential problems confronting members of a profession

or group and their impact on society, with the implication that fairness should be attributed not only to clients but also colleagues and the public (Githu: Donatus Mathenge, 2012).

Ethics refers to "the rules or principles that define right and wrong conduct". Many of these rules are applied when an individual is required to make a decision. The moral base or rules that are applied to determine right and wrong are often developed from one's cognitive moral development, value base, or moral philosophies. Therefore, ethical decision-making is the process by which individuals use their moral base to determine whether a certain issue is right or wrong (Christabel Man-Fong, 2011).

Profession is an occupation that requires both advanced study and mastery of a specialized body of knowledge and undertaken to promote, ensure or safeguard some matter that significantly affects others well being(Vee and Skitmore, 2003).

Almost every profession has its codes of ethics to provide a framework for arriving at good ethical choices. Therefore, professional ethics is a system of norms to deal with both the morality and behavior of professionals in their day to day practice, and ascribes moral responsibility not to an individual, but to all professionals practicing in a particular profession. For building professionals, the priceless life demands nothing more than the maximum moral value to be practiced by the professionals, if not which could bring the highest risk possible, loss of life (Hamzah Abdul-Rahman, 2013).

J Mason (2009) stated that, the spirit of any genuine profession cannot be achieved without an ethics component. According to UN (2006), Professional standards of ethical conduct, no matter what the organization, it should contain typical characteristics including commitments to:

- Behave honorably in all aspects of work and professional activity.
- Conduct oneself in such a manner as to maintain trust and confidence in the integrity of the acquisition process.
- Avoid "clever" practices intended to take undue advantage of others or the system.
- Uphold the organization's standards and policies and all relevant legislation.
- Avoid conflicts of interest.

2.3. Professional Ethics in construction projects

The construction industry plays a major role in stimulating the economy of any country. However, it is a very challenging and demanding business sector. The construction sector faces many challenges related to behaviors of the professionals that put moral values in question. These moral challenges are comprised of bid rigging, unreliable contractors, lying, claim games, conflicts of interest, payment games, threats, fraud, collusion and professional negligence (M. F.Ho, 2010).

As studies implicate, unethical practice are the very most problems that are affecting the building and construction industry(R. K. Shah and M. Alotaibi, 2017).Poor ethical conduct experienced in the construction industry like corruption and bribery, favoritism, unfair conduct and overriding of the audit process have a negative impact on the projects and could thus result into decreased performance and poor delivery of service to the public, bad reputation of the profession, continuous insecure practices that costs lives and property, loss of income by clients and governments, needless expenditures that raise levels of poverty and reduce the quality of life amongst other things. This can only be reduced by employing professional ethics which forms the basis and foundations for ethical organizations.

A study done by Vee and Skitmore (2003) in Australia uncovers that; there are different kinds of ethical dilemmas and unethical practices in the construction industry. The major ones are negligence, corruption, bribery, bid cutting, under bidding, cover pricing, collusive tendering, bid shopping, and withdrawal of tender. Moreover, they also classified these unethical practices into four universal kinds of unethical practice which is known as conflicts of interest and they are: unfair conduct, fraud, collusion, and bribery.

A survey in Australia was conducted amongst the professionals which are the project supervisors, building contractual workers and engineers on the range of moral issues encompassing the industry of construction. The result indicates that only 45% of the professionals had an ethical code of conduct in their associations while 84% of them believed that great moral conduct to be a basic hierarchical goal. No members have witnessed any instances that attempts to compel their laborers to join in and get involved in unethical conduct. Nevertheless, each one of the members had witnessed some sort of unethical conduct. Eighty-one percent as unjustifiable conduct, carelessness 67 percent,

irreconcilable situation 48 percent, tricky tendering 44 percent, extortion 35 percent, secrecy and legitimacy break 32 percent, pay-off 26 percent and infringement of ecological morals 20 percent (Vee and Skitmore, 2003).

Recent studies show that in Malaysia, fraud in construction businesses is very common. The manufacturing, construction and engineering sectors are the sectors which are highly involved in fraudulent activities. At the same time, there is also evidence that poor governance disproportionately affects the poor, as they lack resources for alternatives. Since investment in infrastructure is a critical driver of economic growth, poor governance, mismanagement and corruption in construction projects can undermine social and economic development outcomes and serve as a structural brake on sustainable development. There are many reasons why professionals are involved in unethical practices. This may be due to insufficient legislative enforcement, fierce competition, the economic downturn, insufficient ethical education from schools and professional institutions, cultural changes and high complexity of construction works(Hamimah Adnan, 2011).

According to R. K. Shah and M. Alotaibi (2017), it is indicated that owners in the Middle East are known to be customarily late in payment, resulting to substantial bankruptcy of contractors. So the study concluded that late payment by the owners is the very first contributing factor for the contractors to get involved in corruption. A questionnaire study conducted in USA amongst the professionals that involved the construction managers, architects, contractors, subcontractors and representatives of the industry revealed that over 80 percent of respondents have witnessed untrustworthy behavior in the construction industry.

Furthermore, Ehsan N (2009) studies the ethical concerns that exist in Pakistan construction sectors using a comprehensive research done through questionnaires, telephonic surveys and interviews with different stakeholders. The research finding indicates that, there is literally no single person in the construction industry who had not faced some level of unethical behavior. This implies unethical practices are widespread concerns in the construction industry.

Adopting ethical principles and the enforcement of standards become a matter of accelerating relevance to the society as the number of professions and professionals increase

and the work environment becomes more ethically sensitive, unethical practices might take the credibility of the entire profession at risk.

These days it is rare to see construction projects being completed within the planned cost, scheduled time and required quality. Quality may even sometimes be ignored in this industry to cut the costs or to shorten the project time. To tackle the most challenging concern the construction industry face which is quality related problems, quality management is seen as an approach to achieve the required level of quality and it had been given great attention world-wide over the past three decades(Mathenge, 2012).

There is an insight where most of the quality related issues are caused by human factor. Therefore, the concern of professional ethics plays a major role in reducing quality related problems and preventing inconvenience to all parties concerned.

Ethics highly affects the corporate credibility and economic sustainability of the construction sector. It also endangers personal security of the public and the professionals themselves. In Nigeria there is an increasing consensus within the construction industry that corruption and other unethical practices are very common in the industry. Among the most prevalent ethical concerns faced by the construction industry is bias in tendering or unethical tendering practices. Others include misrepresentation of completed work or work value, poor quality control or quality of work and technical incompetence (O.J.Ameh and K.T.Odusami, 2009) .

It is very important to make a distinction between ethics in engineering and ethics of engineering. Ethics in engineering addresses the ethics of actions taken by the individual engineers or professionals. Whereas, Ethics of engineering deals with ethical issues that involve the role of engineers in the construction industry, the ethics of the organizations in which they work as well as of professional engineering societies, and the ethical responsibilities of the profession.

The traditional approach to ethics mainly focuses on the moral actions of the individual (ethics in engineering). This focus neglects the social structure within which the individual acts (ethics of engineering). An examination of that structure is necessary to determine what social forms are conducive to an individual's accepting moral responsibility and fulfilling moral obligation (W. M. Kim Roddis, 1993). So in this study ethics of engineering will be

dealt together with ethics in Engineering so that we can have a clear picture about the practice of professional ethics and its effect.

2.4. Codes of conduct

Engineers, architects, surveyors, construction managers and every construction professional involved in designing and implementing each stage of the construction process have their own Codes of Ethics. Codes of Ethics are written guidelines issued by an organization to its professional members, workers or management to help them conduct their business in accordance with acceptable values and integrity (J Mason, 2009).

Codes are basically made to allot an obligation to both the key (proprietor, customer) and contending tenderers to have an agreement between what is right, what are the judgment skills and what decisions has to be made for each task. Codes of behaviors in the construction industries are designed purposely to handle moral concerns (R. K. Shah and M. Alotaibi, 2017).

In the United States, the first civil engineering organization is the Boston Society of Civil Engineers, which was found in 1848. The American Society of Civil Engineers (ASCE) was founded four years after. The then leaders of the organizations are usually referred as the "high character and integrity engineers" that was important to serve the public. But the history of codes of ethics really begins a half century later.

In Ethiopia, Ethiopian Association Civil Engineer was officially established in February 10, 1996, that serves as a center for civil engineers to create a more interactive professional development. The Association has worked in experience sharing, inducing new developments in the field, and contributed research papers that can add value to the construction sector. It also takes part in technical visits and conduct trainings in collaboration with other concerned bodies. It also has code of professional ethics. Though very important works has taken place through the association, professional ethics was not given the deserved amount of attention to be practiced especially on improving professional ethics in the public construction projects mainly in 20/80 condominium projects. In Addis Ababa, Ethiopia construction bureau has finalized the preparation of Construction Professionals' Code of Ethics Regulation which would partially help reduce the irregularities and unethical practices facing the construction sector (Desta Gebrehiwot, 2017).

The first code of ethics was adopted in the United Kingdom in 1910 by the Institution of Civil Engineers (ICE) and was followed by many others in the United States, and in other countries. In Australian industry of construction, tendering codes have been composed keeping in mind the end goal to handle moral issues like offer cutting, withdrawal, spread valuing, reward of tendering expenses and agreement (CIOB, 2006). In addition, as indicated by J. Mason (2009) moral conduct is in consistence with these moral qualities:

1. Honesty and confidence: work with reliability and accountability.
2. Fairness and clarity: avoid getting advantages which comes in a way that is dishonest.
3. Reliability: consistently serving and giving benefits just in the area where the professional is expert on.
4. Integrity: taking the wellness of the general public as the first important task to consider.
5. Objectivity: witnessing any unethical or conflicting situation, expose the happening to any person who might get negatively affected by it.
6. Responsibility: keeping an eye on what is being done and staying away from any mischief or protecting damages from happening.

Vee and Skitmore (2003) and Miller (2003) suggested that unethical practices in the construction industry take different forms but the following are the most prevalent and widely recognized unethical practices:

- Bribery: In cash or in kind favor to get something in return
- Fraud: Deception to get financial or other advantages (e.g. procurement of substandard or substandard materials, underpayments to workers, etc).
- Extortion: A form of blackmail where one party makes threats against another party of adverse consequences unless demands are met by the other party.
- Embezzlement: Theft of corporate or public funds.
- Kickbacks: Rewards for favorable decisions.
- Bid Rigging: Illegal conspiracy in which contestants join to artificially increase the prices of a bid, thereby undermining free market competition.
- Overbilling: Expanding unit prices for activities that are scheduled to happen earlier in the project to increase the cash flow.
- Change Order Games: Submitting a low bid to win the project and later on recover the profit by submitting change orders.

- Claim Games: Making extra earnings by submitting false claims.
- Money Laundering: Moving cash or assets obtained by criminal activity from one location to another, often to conceal the source of funds.
- Employment of Illegitimate Workers: Workers who are not authorized to work in a country or at a specific jobsite.
- Forgery: a fraudulent alteration of a written document or seal with the intent of injuring the interests of another person.
- Cover pricing**:** occurs when a bidder wants to be seen to participate but does not want to win the job so asks a competitor for a realistic "cover price" and submits it as a genuine bid. A company may have a good reason to ask for a cover price so it can present a believable bid: it might get dropped from a tender list if it doesn't participate; or it might lack capability or capacity for the job but want to attract future work from the same principal.
- conflict of interest defined as an interest which, if pursued, could keep professionals from meeting one of their obligations "Right of Conscientious Refusal" which is the right of an employee to refuse to partake in unethical conduct when forced to do so by an employer

Code of Ethics (2017) by ASCE (American society of civil Engineers) stated that, fundamental principles of code of ethics, the professionals' maintain and upgrade the nobility and the reputation of the engineering profession by:

1. Using their knowledge and skill for the enhancement of human welfare and the environment;

2. Being honest and impartial and serving with fidelity the public, their employers and clients;

3. Striving to increase the competence and prestige of the engineering profession; and

4. Supporting the professional and technical societies of their disciplines.

Furthermore, the Code of ethics (2017) by ASCE stated the fundamental canons of ethics that can be used as a guide line to practice. One to be called a full developed professional, he/she has to know and full fill these canons of ethics.

Canon 1. Engineers shall consider the safety, health and welfare of the public as the first priority and shall make an effort to get along with the principles of sustainable development when performing professional duties.

Canon 2. Engineers shall perform services only in areas of their competence.

Canon 3. Engineers shall issue public statements only in an objective and truthful manner.

Canon 4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.

Canon 5. Engineers shall build their professional reputation on the value and importance of their services and shall not compete unfairly with others.

Canon 6. Engineers shall maintain the dignity of the engineering profession and shall act with no tolerance for bribery, fraud, and corruption.

Canon 7. Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those engineers under their supervision.

Canon 8. Engineers shall, in all matters be related to their profession, treat all persons fairly and encourage equitable participation without regard to gender or gender identity, race, national origin, ethnicity, religion, age, sexual orientation, disability, political affiliation, or family, marital, or economic status.

R. K. Shah and M. Alotaibie (2017) demonstrated that the NCOP (National Code of Practice) for the construction industry of Saudi Arabia made nine key moral standards to ensure moral behavior to consider in tendering stage. They are:

1. All tendering processes should be conducted with fairness and honesty at all industry levels.
2. Parties must conform to all lawful obligations.
3. Parties should not to take part in any conduct which gives one party an inappropriate benefit over another.
4. Tendereres should not take part in any type of collusive practice and ought to be prepared to prove their honesty.
5. Conditions of tendering ought to be the same for every tender on any specific project.
6. Clients should clearly identify their requirements in the tender documents and specify criteria for assessment.

7. Evaluation of tenders should be found on the tendering conditions and selection criteria described in the documents of tender.

8. Privacy of all information offered during tendering should be p reserved.

The construction Management Association of America (CMAA) (Construction Management Association of America, 2017) has adopted a code of professional ethics to address critical issues that are affecting the construction and program management industry by considering the ethical standards of practice of the construction manager. For the professionals taking part in the business of providing professional services that helps customers plan, design, implement, manage and construct projects, it has prepared this code of ethics:

I recognize and agree to conduct myself in accordance with the following;

1. Obligations to the public

Representation of Qualification and Availability: I will only accept assignments for which I am qualified by my education, training, professional experience and technical competence.

Legal Compliance: I will not discriminate in the performance of my services on the basis of race, religion, national origin, age, disability, gender or sexual orientation.

Fair Competition: I will represent my project experience my project experience accurately to my prospective clients and offer services that I am capable of delivering with fair competition.

Public Contracts: I will not offer nor make any payment or gift to a public official with the intent of influencing the official's judgment in connection with an existing or prospective project.

Safety: I will take an active role in developing a culture of safety, consistent with the CMAA policy statement on safety and the construction manager.

2. Obligation to the client

Client Service: I will serve my clients with honesty, integrity, candor and objectivity.

Conflicts of Interest: I will endeavor to avoid conflict of interest.

Fair Compensation: I will negotiate fairly and openly with my clients in establishing a basis for compensation.

Release of Information: I will only make statements that are truthful.

3. Obligation of the Profession

Industry Standards: I will furnish my services in a manner consistent with the established CMAA standard of practice.

Honesty: I will not make misleading, deceptive, or false statements about my professional qualifications and experience.

Professional Development: I will continue to develop my professional knowledge and competency as a construction manager.

Integrity of the Profession: I will avoid actions that promote my own self interest at the expense of the profession.

4. Obligations to the Environment

Sustainability: I will conduct myself and encourage others in keeping with environmental and sustainable business practices.

2.5. Importance of professional ethics to the construction industry

Professional ethics can make a lot of responsible and ethical professionals who are loyal for their job. It takes into consideration what their profession expects from them and how they can accommodate that with their own moral values to serve their job, the construction industry and the public at large. This can play a major role in improving the major challenges that are seen in the construction industry basically in 20/80 condominium projects in project delay, cost overruns and quality problems.

Problems in Engineering are not solely technical. Quality management takes a whole complex level of effort which may not be successful if the technical aspects are the only ones being given attention. This idea has led to the modern concept of total quality management (TQM).TQM is defined as both philosophy and a set of guiding principles that

represent the foundation of continuously improving organization. Many tools, methods, and techniques have been developed world wide in order to give substance to the concept of TQM. A large number of companies obtained the ISO 9000 standards certificate as a first step towards TQM (Besterfield DH, 2003). However, if people are not serious in implementing quality management, no matter how good the system is, it will fail eventually (Vesiland, 1983). There is a strong perception that majority of the quality-related problems are caused by human-related factors, especially professionalism and ethics (Hamzah Abdul-Rahman, 2013).

So professional ethics integrated with a total quality management approach (TQM), it is tied up with the achievement of a focused objective working together to achieve a positive win–win outcome. It is, however, not only focused within the objectives and time frame of a project although there is a need to develop an appropriate collaborative culture for each project. It starts more in the development of longer-term supply chain habits, based on multiple organizational commitments to health, safety and zero defects (Fewings, 2009).

Engineering decisions have the power to affect the wellbeing of not only the engineer but on the rest of the natural world. Engineers, especially where large-scale environmental modification is concerned, should be cognizant of the secondary impacts of their decisions and take these into account in the formulation of the solution to the problem. From experience, producing technological solutions to problems and then inviting experts and the public to comment on them is an ineffective mode of operation since the policy has already been made and changes are difficult to implement (Vesiland, 1983)**.** For example when the engineering decisions take clearing slum areas like that of 20/80 condominium projects and construct new housings instead, the social impact on the residents should be given a serious thought before going into action. The environment and vegetation degradation is also a serious concern to be taken care of before actually implementing the work.

Ethics forms a fundamental part of any business and the effect of any business actions should be advantageous to the personal welfare of the employees and the society that is affected by their actions. Ethics in construction business should be governed by personal ethics and there is a need to maintain a balance between the requirements of a client and the impact on the public. Indeed, in order to preserve the interests of the public it is important to

please the majority but also equally important not to disregard the minority, for example the causal laborers on construction sites (Richard Irumba, 2007).

2.6. The effects of poor professional ethics in building construction project

Problems that are caused due to lack of professional ethics bring loss in money, time, quality of construction, which in turn affects quality of life, destruction of the environment, loss of respect for engineering profession and professionals and above all it may cost the most precious gift on earth which is human life.

Ethical competence is critical in the practice of many professional disciplines. In the particular case of engineering, professionals, who provide technical expertise in the making of the construction, are expected to act with the highest ethical standards due to the potential impacts that their decisions and actions induce on the society and the environment (O.J.Ameh and K.T.Odusami, 2009).

According to the World Bank (2004), more than 1trillion dollars US$ is spent on bribes every year. A study by Doran (2004) also suggested that up to five percent for every one million dollars spent on a project is lost through unethical dealings one way or another. This indicates how unethical practices can bring a huge loss in a country's economy.

It is explained that many features of the construction industry offers plenty of opportunities for corruption and unethical acts to grow out of it. The size of building projects where contracts tend to be huge in monetary value and yet the companies with financial and technical capability to implement them are few. The uniqueness of many projects makes costs difficult to compare, which in turn makes it easier to inflate costs or hide bribe. Furthermore, the fact that the government is the major client, even privatized projects requires government approval, which requires numerous permits and there are insufficient controls on how government officials behave.

There is an issue of hidden parts of large proportion of building works. For example, foundation, which cost between 10–15% (depending on foundation types) of the total building cost is concealed beneath the ground, structural steel works are concealed within the concrete, electrical and mechanical fittings are concealed beneath the wall. This makes it costly or difficult to verify bad workmanship or inferior materials after the work is completed.

Building projects usually involve a large number of participants in a complex contractual structure. These include architects and engineers who set the technical parameters of building projects, the quantity surveyors who prepare preliminary cost advice and estimate, the builders or main contractor who may subcontract key parts of the project to specialist subcontractors. The involvement of different parties in decision making of every stage of the building project has made the building construction susceptible to unethical conducts (O.J.Ameh and K.T.Odusami, 2009).

Studies have shown that 50% of building failure cases in Nigeria were related to design faults (carelessness and negligence), 40% to construction faults (professional incompetence and fraudulent practices), and 10% to product failures. This has led to the classification of unethical practices that are common in the Nigerian construction industry by saying professional misconduct and professional negligence. Gaps in professional ethics usually result project delay, capital flight, and huge economic loss in the form of additional cost of projects, which runs, between 40 and 60% of awarded contract sum. Such additional costs often result from rework, contractual claims, litigation cost, and so on. In extreme cases, professional ethical lapses might lead to the collapse of building. Building collapse is a very common trait in Nigeria, especially in Lagos metropolis. Some of these collapses disappointingly led not only to financial losses, but also costs the most respected human lives. Though many factors are responsible for these collapses, about 37% of these collapses are because of carelessness and greed on the part of construction professionals and 22% are observable to design faults. These and other upcoming concerns indicate that there is an increasing demand for better ethical practice in the Nigerian construction industry (O.J.Ameh and K.T.Odusami, 2009).

As Linda Fan (2001) stated, construction professionals have been involved in some cases of unethical behavior. A number of surveyors and engineers have been found guilty of disreputable conduct. For example, a case was revealed in which housing blocks decayed at an unexpectedly alarming rate because the reinforced concrete was mixed with salt water. Surveyors provided false information to their clients. Charges against surveyors include failure to provide accountant's reports. In 1998, there were 15 foundation sites in Hong Kong where the piles were found not to reach the designated safe bearing stratum. This is an indication where the professionals both the designers and the ones that are actually

constructing are negligent on making sure the given design is safely designed to bear the entire load.

If a building or tunnel collapses or creates a major health problem, there is a design duty of care, making it unacceptable if precautions were not taken for foreseeable risk. The designers recognize that they have professional liability and they need to take special care not to be negligent in their research. Being ignorant to guidelines is ethically wrong unless proper research has been done to guarantee alternatives that are proved to be safe and in the case of discovering a hazard after a building is handed over, it is a must for the client to be informed of the dangers (Fewings, 2009).

Disasters are good implications on how professional ethics is important in engineering. For example, extreme flooding in 2017 brought on by a series of hurricanes that affected many regions in the United States, including Florida, Louisiana, and Texas, called into question the appropriateness of building codes and urban planning. Almost coinciding with the hurricane damage of 2017 in the United States, earthquakes in Mexico also resulted in many asking about the potential for less than ethical decisions in construction that led to the collapse of buildings and thus loss of life(Ivan Esparragoza, 2018).

The study which is done in Addis Ababa, Ethiopia specifically at Koye Fiche condominium projects about mainstreaming environmental impact assessment into housing development projects has identified the possible negative environmental impacts of the project which were: land use change, eviction of indigenous farmers, soil erosion, cutting of trees, degradation of soil resources, health risk to humans and animals, landslide, spread of malaria, fuel gas emission, air pollution, noise pollution, dust pollution, soil and water pollution, risk/injury to workers, soil compaction, disruption of natural water ways, ground and surface water pollution, spilling of grease, residual materials, soil disturbance, and disturbance of the landscape, water harvesting infrastructure resulting in mosquito breeding and hazardous environment for children, traffic congestion in pick time, solid waste, liquid waste, increased urban heat island, and increased number of population. Appropriate mitigation measures are required to reduce the abovementioned possible negative impacts of condominium housing projects in Ethiopia (Arega Degife, 2018). This can be a good indication that poor attention is given on how to protect the environment prior to the start of the construction, at the time of the construction or even after the end of the construction.

Without the inclusion of environmental concerns it is almost impossible to attain sustainable development.

The list of problems due to ethical lapses in the construction industry could go on and on. Ethical misconduct has led to the waste of society's resources and has caused significant harm to many individuals. In a wider range, corporate ethical failures have led to injuries or deaths of employees, consumers, or members of the general public. According to the report, the scale of corruption is greater in the construction industry than in any other part of the economy. The core point of it all is that the public at large is highly demanding the construction professionals and organizations to act up to the high ethical and moral standards (Christabel Man-Fong, 2011).

Whenever a contractor undertakes a new construction project, there is uncertainty about the likelihood that the project will be completed within budget and on schedule. The effective contractor will generally be able to efficiently manage the resources required to complete the facility. Unfortunately, some aspects of projects cannot be fully controlled by the contractors. For example, achieving the objectives of the projects can be jeopardized by the deliberate efforts of thieves and vandals. Thieves and vandals can directly impact the success of a project and diminish the potential profitability of the project being constructed. The costs of theft and vandalism on a project are difficult to predict as they are somewhat random occurrences, but projects that fall victim to such losses can face major losses (Robert Berg and Jimmie Hinze, 2005).

A study that took place in Uganda shows that, the construction industry has been well known by an epidemic of fatal accidents on construction sites and cases of defective designs that fail to preserve the environment. The industry has recorded cases of corruption especially in the building and road construction tendering process. All these problems have largely been caused due to professional negligence and poor construction practices. Most industry actors are engaged in partnering relationships as a project delivery system, which requires high levels of trust and ethics (Richard Irumba, 2007).

LRN (2006) noted that, corporate ethics management is traditionally grounded in the 3P approach: "Print a corporate ethics code, Post it on the wall and Pray people actually read it." Though praying people to read it cannot help unless the professionals have understood its importance and other control measures are taken so that, they can actually implement it.

Ho (2010) argues that, to have any impact on employees ethical behavior, the provision of a code of ethics is certainly a necessity but it is by no means a sufficient condition. A lot of time and energy has been spent on revising the contents and examining the effectiveness of codes, but a little empirical evidence is there that proves the extent to which the existence of a corporate code actually helps to prevent unethical behavior in the workplace. It also argues no clear evidences are shown that indicate the circumstances where the existence of the code of ethics prevents unethical practices. Many organizations, academics and government have failed to effectively deal with the challenge of how to communicate with a corporate code and implant the code in the organization's culture. The code doesn't usually be given more value than a forgotten company document in the drawer or public relations document (LRN, 2006).

Vee and Skitmore (2003) stated that unethical conducts in the construction sector across the world has taken a high rate of loss including lost lives, financial resources, diverted resources, and destruction of the environment. It also explained that unethical and corrupt practices have a lot of adverse effect on the industry, to the development of the economy and human resources. Unethical or corrupt practices tend to disfigure construction process and thereby slow down the economic wealth. Unethical performance down play the free market system, discourage economic aid from the foreign donors and it makes almost impossible to attract and international investors will avoid the corrupt environments to protect themselves from the loss of the economies and communities of the respective countries.

2.7. Factor contributing to unethical practices

There are a lot of factors that are mentioned as contributing for one professional to act unethically. Taking bribery for instance, Bribery is very common in many developing countries and may account for their low pace of industrialization and high rate of poverty among the citizens. However, bribe taking or giving is not restricted to developing countries alone. According to the United Nations 1997 World Development Report, 15% of all companies in industrialized countries have to pay bribes to win or retain business. In Asia, the figure rises to 40% and for former Soviet Union countries, the figure is 60%. The key factors that are thought to influence bribe taking were identified in the study. Low public-sector salaries, immunity of public officials, secrecy in government, and worsening public

procurement practices top the list of factors. Bribery generally is never viewed as morally acceptable, and is always viewed as corruption of what is right and best for the people all over the world (O.J.Ameh and K.T.Odusami, 2009).

A study has identified the critical factors affecting schedule performance of public construction projects in Ethiopia. The stepwise multiple regression analysis results indicated that owners competence can significantly contribute to schedule performance of Ethiopian public construction project while the remaining three factors: conflict among project participant; poor human resource management and project manager's ignorance and lack of knowledge are found to be damaging to the schedule performance of Ethiopian public construction project(Ephrem Girma Sinesilassie, 2017).

Hassim A. (2010) classified the factors that contribute to unethical behavior as;

- Economic downturn: companies are willing to do anything in order to survive during declines especially to get a tender or projects from the public sectors.
- National objective: many national policies and objectives that need to be achieved in order to meet the planned objective as country, a lot of project must be completed at a specific time, increasing of expenditure as funding of building and improvement to infrastructure. All these have caused pressure to the construction players and cause ethical issues in project procurement.
- Leadership: absence of leadership that is considered as a role model to improve the professionalism and show good leadership style.
- Non transparent selection process: One of the main reasons that ethical issues occur in plan procurement is due to the non transparent selection process.
- Ineffective evaluation of the process: The open tender process is one of the ways to mitigate the possible conflicts of interest and to promote cost efficiency in project procurement.
- Ineffectiveness of professional ethics and policy in procurement: failure of the professional to make reasonable and professional decisions on important circumstances can cause ethical issues to occur in project procurement

Linda C.N. and Paul (2009) suggested that, there are five factors guiding ethical decision making those are

- Personal values/beliefs- honesty, integrity, etc.;
- Company/organization- corporate culture, codes, practices, loyalty to organization;
- Trade/profession- codes, regulations, agreed upon practices, accountability;
- Government- laws, regulations; and
- Society- values, expectations, public opinions.

As Linda C.N. and Paul (2009) again stated attributes that are contributing for ethical decision making;

- Company's code of conduct
- Duty and obligation towards your organization and shareholders
- People's perceptions
- Others' advice
- Do unto others as they would have done unto you
- Greatest good for the greatest number
- Personal reputation and career
- Injure others
- Interest of stakeholders
- Self-interest
- Profitability

2. 8. Measures for good professional ethics practice in building project

In controlling professional ethics, one common measure is the code of conduct. Unfortunately, many surveying professionals do not find the rules of conduct helpful when complicated ethical concerns arise. Some criticize the rules, which are not able to provide solid guidance especially in those instances when professional duties conflict with other interests (Linda Fan, 2001).

Other than the existence of code of ethics there has to be ways in which the employees could get attached and bear in their mind what it written and work accordingly. A study shows, there is a statistically significant relationship between methods of communicating the corporate code of ethics and employee attitudes toward the codes within the subject construction organization. Different methods of communication have different impacts on employee attitudes toward the code. Some methods of communication, such as (1)

distribution by immediate supervisor, (2) internal circulation, (3) posting on company website/ internet, and (4) distribution by the human resources department led to a strong and significant influence on employee attitudes toward a code. These communication methods are considered effective in affecting employee attitudes toward a corporate code of ethics (Christabel M. F. Ho, 2013).

Other communication methods, such as (1) receiving a copy when joining the project team, (2) receiving a copy at an ethics training workshop, and (3) obtaining a copy from colleagues who have a relatively weak influence on employee attitudes to the code. The latter three methods are considered to be less effective. In practice, a corporate code of ethics does not necessary lead to ethical behavior of employees. However, the lessons taught from the research showed how the code can be best implemented in workplaces in an effective manner when certain parameters (effective communication methods, communication channels and sources of information) are practiced (Christabel M. F. Ho, 2013).

A project that is executed with good professional ethics is most likely to achieve success. So a successful project can be taken as a measure for good professional ethics.

As Mamaru Desalegn Belay (2017) explained in the study, completion of a construction project within the planned budget is mostly seen as a major criterion of project success by clients, contractors, consultants and related stakeholders. These criteria and factors are basic and can influence most types of construction projects to be successful, these are;

A. Time

Time is one of the most important project success criteria for any project. Time has been addressed as one of the main criterion by which to evaluate a project's degree of success. It has also been mentioned as a factor, which can help the other factors/criteria to be met. It is found that the definition of time is of a great importance. Time as the date when a project is most likely to be completed can be a criteria, but time as a manageable component might be considered as a factor.

B. Cost

Without a doubt, every project is dependent on its cost or budget. Cost has been addressed as a very important success criterion, where as having an intellectual budget plan and proper cost estimation have been mentioned as major success factors in some studies. Completing

the project with the planned cost is one factor that makes the project successful. Quantity surveyors are the key professionals in the construction industry that are involved in cost planning, cost management, project procurement, contract administration, feasibility studies and asset financial management. The core competencies of quantity surveyors include determining project budgets, measuring project quantities, preparing contract documentation such as bills of quantities and cost control documents, administering contracts, and preparing final accounts (Mark, 2016).

C. Quality

Quality can be defined as meeting the legal, aesthetic and functional requirements of a project. Requirements may be simple or complex, or they may be stated in terms of the end result required or as a detailed description of what is to be done. However, the quality is obtained if the stated requirements are adequately met and if the completed project conforms to the requirements (H.Senaratne and S.Mallawaarachchi, 2015).

Quality, whether it concerns the product or process, has been considered as both a project success criterion and factors. Some researchers named it quality performance and considered it as a major project success criterion. In addition, some other researchers addressed quality as a criterion under the name of product's quality. On the other hand, some researchers considered quality management process as a project success factor, which facilitates the success of other criteria and factors.

At this time of globalization, construction firms world-wide are actively engaged to achieve internationally accepted quality levels to ensure their front position in the upcoming international market especially in developing economies. Thus, the need to have a proper system that ensures quality is critical, coupled with high level of attention paid to quality management in construction industry (Hamzah Abdul-Rahman, 2013) .

Scholars indicate that quality management had been adopted by many countries in their respective construction industries including Hong Kong, Singapore, Greece, Turkey, Jordan, Saudi Arabia, Sweden, United States of America, South Africa and Malaysia. Quality management might not be as such successful if technical aspects are the only ones considered. That is why the concept of total quality management is needed (Hamzah Abdul-Rahman, 2013).

However, if people are not serious in implementing quality management, no matter how good the system is, it will fail. It is believed that majority of the quality related problems are caused by human related factors, especially professionalism and ethics (Besterfield DH, 2003).

Quality management includes inspection of project documentation, conducting testing when required, and inspecting the construction work as it progresses. Any discrepancies noted during the inspections generally are placed in a database for tracking until corrected. Follow up inspections are made to ensure that all discrepancies are corrected. Failure to comply with construction quality standards is considered a failure to comply with contract requirements and is considered unethical (Schuafelberger, 2014).

Human variables add to the vast majority of value related issues. The professionals' moral issue takes a basic part in quality related concerns in a construction projects. The industry has a reputation for poor administration and quality, a background marked by broken guarantees, a terrible wellbeing record, and sharp practice. Unscrupulous conduct by the industry of construction gatherings affects the projects' quality. Customers and temporary workers that are in the industry of construction will make an effort to acquire ventures by using any means including dishonest behavior which overlooks honest and even quality. In view of this untrustworthy behavior by the industry of construction gatherings, there is a major impact on the task quality and the importance of morals in task execution. So moral is now considered as the fourth most crucial measurement in construction projects (R. K. Shah and M. Alotaibi, 2017).

For project managers, one of the critical elements of their profession is the consideration of ethics and social responsibility. That means there should be no conflict between morality and good management. It is vital that project managers conduct their work in an ethical manner. This quotation, from the Preamble of the code of ethics for project managers, confirms the scope of proper ethical conduct required by project managers. Construction contractors are also expected to behave in an ethical manner. A recent interview survey of construction professionals indicated the significant role ethical conduct plays in construction contracting , predictable fact considering that 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. Being honest and realistic is also said to be a fundamental aspect

of professional integrity, especially when making claims and estimates (Vee and Skitmore, 2003) . So the safety of the professionals can be one good measure of professional ethics in the construction industry.

It is suggested that quantification of corruption at a country level could be "objective" or "subjective." Objective quantifications are based on verifiable information, such as the number of corruption charges which again depends on the efficiency of the judiciary in a given year, or the number of internet search-engine hits on corruption, which reflect the media attention given to particularly immoral instances of corruption in a particular country. Subjective measures are based on surveys or polls in which individuals are asked to assess the level of corruption. Survey respondents are typically a panel of country or region experts, a random sample of locals, or business people. Subjective measures can be classified according to whether they gauge the respondents' perceptions or experience (O.J.Ameh and K.T.Odusami, 2009).

In this study subjective quantifications are used to measure the overall level of professional ethics and its effect on 20/80 condominium projects of Addis Ababa city.

In order to achieve good practice on building project the following areas have to be taken very seriously i.e. organizations should ensure their employees know how to deal with ethical issues in their everyday work lives and are thus able to make ethical decisions. Training should be given on professional ethics in every building construction project.

To attain ethical practice within a profession, an individualistic approach to good morals is not enough. The structures of the profession (practices, procedures, institutions) must be conducive to an individual's accepting moral responsibility and fulfilling moral obligations (W. M. Kim Roddis, 1993).

Construction professionals are expected to behave with professional integrity and reasonable of care. They should strive to achieve good quality of work as they owe responsibility to the general public. Only when professional ethics are well practiced, professionalism will be enhanced and thus eliminating the quality-related problems directly. The main public agencies of developing countries are encouraged to enforce existing laws and procedures and to set a standard code of ethics. All construction players must be monitored to generate a standard scheme to measure the quality of work achieved by contractors. Consultants should exercise their duty of care in performing their works and not resort to unethical behavior for

approving any sub-standard work. The contractors should not earn profit in unethical ways. Construction parties should always be alert and try to avoid any unethical behavior among the construction players from happening (Hamzah Abdul-Rahman, 2013).

Ethics as a subject is not taught in the elementary undergraduate / graduate studies in spite of the importance of this subject for the profession. To put the system right, teaching of ethics is an important foundation stone. Concepts and perceptions of professional ethics results from the prolonged professional socialization process during both college/university and industry training (Ehsan N, 2009).

To improve the poor professional ethics in construction projects, providing ethics related training for construction professionals who are engaged in construction might also help to improve project quality. Here, the awareness and training of quality management aspects relating to whole phases is essential. In addition to that, all the parties should work together as a team in the quality management process to achieve certain quality goals (H.Senaratne and S.Mallawaarachchi, 2015).

Besides giving ethical trainings it is advisable benchmarking best practices in ethics like; implementing ethical guidelines; providing good ethical leadership; developing honest and ethical organizational culture; improving supervision of work processes during project cycles; strengthening monitoring and supervision of work processes; implementing regular and random checks; enforcing laws and regulations; introducing industry wide code of ethics; punishing and canceling practicing licenses; **i**ndicting and convicting; and involving law enforcement agencies during procurement processes of huge tenders would contribute to the reduction of unethical practices in the industry (Ehsan N, 2009).

2.9. Gap Identification of the Literatures

It has been explained in the literature review that professional ethics is a worldwide concern in the construction industry. Both developed and developing countries are suffering from poor professional ethics. Professional ethics is a set of standards adopted by a professional community. As it is shown from the surveys in the literature review, even projects with code of ethics are suffering from lack of professional ethics due to poor implementation of the code. This indicates just having code of ethics is not effective in achieving an ethical cultures and that it is the management of implementation at all levels in the construction

supply chain which is critical. Such management would reflect an understanding of ethical decision making from situational perspective and would include integrating policy, codes, reward, punishment and culture thus bringing together the normative and positive approaches to improve ethical behaviors in the construction industry.

Major challenges in the construction industry including delay in the date of completion, cost over runs, quality problems, environmental destructions and at serious level, loss of human life are all mostly caused due to unethical professionals not doing the ethics that their profession expects them to do. In most of the studies the practice of professional ethics, the challenges and the factors that are contributing to poor professional ethics are done using survey method. In this study qualitative method is also used to support and get an in depth information about the issue.

There are several factors that are mentioned in the literature review that might contribute to unethical practices of professionals. low salaries, rigidity of public officials, system of the government, worsening public procurement practices ,company's code of conduct, duty and obligation towards your organization and shareholders, People's value and perceptions, negligence, lack of knowledge, lack of accountability, absence of heavy punishments are some of them. But the literatures did not specifically identify the factors of the different parties of professionals involved in the construction industry. Instead the factors which are contributing to engage in unethical practices for construction professionals as a whole were only studied.

Good professional ethics can be measured on the success of the construction project. A project that is completed with the planned time, planned cost and the expected quality, it is a good indication that the professionals have been doing their job as to the requirement of ethics of engineering. How far do the professionals understand and implement the code of ethics is one good measure for the professional ethics. This study gives a good indication of the professionals' knowledge toward code of ethics and its implementation.

As it is explained in the literature review there are unethical practices in the United States of America, Australia, Asia and most of African counties. A lot of researches are made to study the factors for those unethical behaviors, who is causing that, how severe effect does it have and how can it be improved is all included in the study. But in Ethiopia research on

professional ethics is not common in the construction industry and this might be one contributing factor for the worsening of lack of ethics in the industry. So this research is believed to be a good source and can encourage others to do further research which can help to reduce ethical problems observed in the industry.

In general professional ethics is a very sensitive and important concept especially at this time. Since the professionals are the primary stakeholders in the construction industry, the ultimate decision making rely on how they act ethically towards their daily activities. In Addis Ababa 20/80 condominium projects, serious attention has to be given, since the government is investing a lot of money in the projects to make people own a house and live a better quality life.

Further researches has to be done in this area so the root causes of unethical practice could be identified in Ethiopian construction industries and look for the best solutions to reduce that. In doing so, getting to the economic level where all citizens can afford a basic need will not be just a dream but a goal to be achieved soon. Professional ethics opens an opportunity for people to stop and look for solutions inside of themselves, think of the things they are missing out as one ethical professional rather than looking for it elsewhere. Having these thoughts in mind, this study is made. It takes 20/80 condominium projects of Addis Ababa and study how professional ethics is practiced and what effect does it cause on the projects. It also suggests ways on how professional ethics can be improved on these 20/80 condominium projects.

3. MATERIALS AND METHODS

3.1. Research Methodology

This chapter discusses the methodological framework within which the study is undertaken. The chapter gives details on research design, research techniques and procedures that are used for collection of data. The study was conducted in 5 randomly selected sub cities i.e. Ledeta, Arada, Bole, Yeka and Kolfe Keraniyo of 20/80 condominium projects undertaking at Addis Ababa city using Microsoft Excel.

This research methodology used mixed method approach, which is a general term when both quantitative and qualitative data collection techniques and analysis procedures are used in a research design. Mixed method research uses quantitative and qualitative data collection techniques and analysis procedures either at the same time (parallel) or one after the other (sequential).This method is useful in this study because it provides better opportunities to answer the research questions and is helpful to better evaluate the extent to which the research findings and the inferences made from them trusted.

Qualitative research were used to gain insight into people's attitudes, behaviors, value systems, concerns, motivations, aspirations, culture or lifestyles by using interviews that capture direct quotations about people's personal perspectives and experiences (informant interview instrument) and interpret the findings from the qualitative data. On the other hand quantitative research will generate statics and will produce numerical data which will be collected through questionnaire.

3.2. Study Area

Addis Ababa is the capital city of Ethiopia and the seat of the African Union (AU). It is situated between 8055' and 9005' North Latitude and 380 40' and 380 50' East Longitude in the central plateau of Ethiopia. It’s area covers 540 sq. km. Addis Ababa is found in the 19th century by the Ethiopian king Emperor Menelik II and his wife Empress Taitu in 1887(S.Teshome, 2012).

The average elevation of Addis Ababa which is 2,500 meters above sea level, has given the city a suitable and moderate weather condition. For political and administrative reasons, the

city is made to be structured with three hierarchies: city government at the top, 10 sub city administrations in the middle, and one hundred sixteen woreda administrations at the bottom (Mulugeta, 2011).

This study was conducted by randomly selecting 5 sub cities of 20/80 condominium project sites in Addis Ababa city. These 20/80 condominium Housing projects sites are located in Ledeta, Arada, Bole, Yeka and Kolfe Keraniyo sub cities, respectively.

3.3. Research Design

Research design is the arrangement of conditions for collection and analysis of data in a manner that aims to meet the purpose of the research taking economy in to consideration. This study will specifically adopt descriptive research design. A descriptive study describes and interprets what is. It is deals with relationships that exist, opinions that are apprehended, processes that are going on, effects that are evident, or practices that are developing. It is primarily concerned with the present, although it often considers past events and the influences it has on the present (Kothari C, 2004). So it is considered as a suitable research design for the purpose of description about the practices and the effects of professional ethics in20/80 condominium projects of Addis Ababa city. It used both quantitative and qualitative methods.

The quantitative approach involves the generation of data in quantitative form which results with an accurate quantitative analysis in an objective manner. The emphasis of quantitative approach is collecting and analyzing numerical data; it concentrates on measuring the scale, range, frequency etc. of the phenomena. There are different types of quantitative data collection techniques, such as questionnaire, experiment, recording events etc (Kothari C, 2004). From the different types of quantitative data collection techniques this study used questionnaire by taking the professionals working on the 20/80 condominium projects.

The other research design which is qualitative research approach is more subjective in nature than quantitative approach and it involves investigating intangible aspect of the research subject like their attitudes, values, opinions and behavior (Kothari C, 2004).The most commonly used qualitative data collection techniques can be in depth interview, observation methods, and document review. In this study in-depth interview data collection technique is

used. The type of interview used was semi structured. Semi-structured interview allows the researcher and participant to engage in a dialogue whereby initial questions are modified according to the participants' responses. The researcher will be able to explore interesting and important questions which are raised in the middle of the dialogue. It facilitates rapport, allows a greater flexibility of coverage, allows the interview to go into details which might not be included in the questioner, and it tends to produce richer data.

The reasons behind the selection of quantitative, qualitative or combination approaches depended on the research question and the constraint. It is also to meet the basic requirement which is what is to be measured and to ensure the validity and reliability of the data (Baker, 2010).

Both approaches have their own strengths and weaknesses. Quantitative approach enables the researcher to make use of statistical techniques to that leads to generalization about the population. Since the data in quantitative approach are numerical, the numbers are readily collected, coded, summarized and analyzed. At the same time, the major weakness of a quantitative approach is that, the answers are limited answers and lack qualitative depth.

On the other hand, qualitative approach describes the phenomena in words instead of numbers or measures. In qualitative methodology the researcher follows induction, as the researcher collects open-ended data with the primary intent of developing theory from the data. The main benefit of using qualitative approach is that the information gathered is of no fixed variety hence, it represents open system view. The openness of the approach becomes very useful when it comes to developing hypothesis in the early stages of investigating a topic. However, the disadvantages of qualitative researches is the fact that the data cannot be quickly, easily, or efficiently summarized nor is it often impossible to generalize from given qualitative observation to another situation (Kothari C, 2004).

Many researches use a combination of both quantitative and qualitative approach to achieve the objective of their research. Likewise, this research adopted mixed research approach to get accurate and trustworthy information. Mixed approach (triangulation) or multi method is the combination of qualitative and quantitative techniques to study on a certain topic. Triangulation means the use of multiple sources and methods to gain a better understanding.

It brings together the two approaches for the purpose of gaining better insight into a social experience (Baker, 2010). Baker (2010) also argues that, using mixed method approach is better than using only one of the methods because it provides not only more information but also gives better quality of information and reduces disadvantages of each individual approach while gaining the advantages of each. Considering this, the researcher uses both the qualitative and quantitative approaches together. The researcher also used a sequence of steps illustrated in the Figure3.1 below.

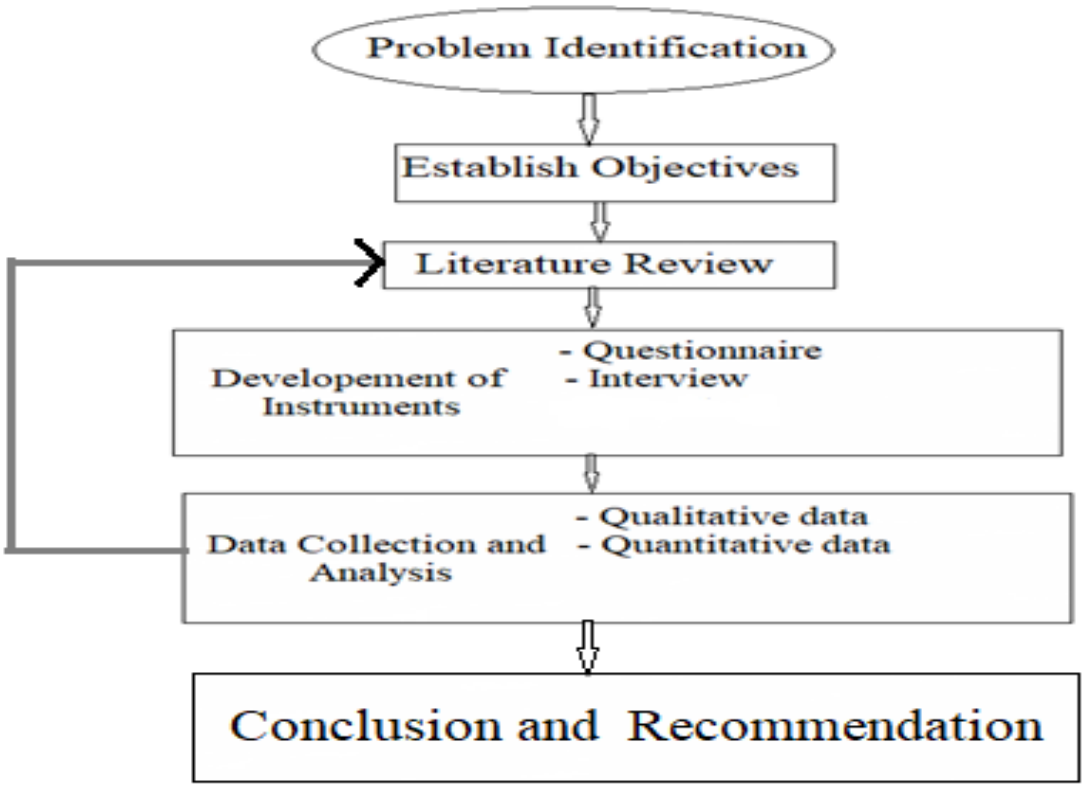


Figure 3.1 Flow Chart of Research Process: (Adapted from Mudzvokorwa, 2016)

3.4. Data Sources

To study a certain phenomena, data can be gathered in various ways i.e. interviewing, focus group discussions, questioners or combination of the two or more methods. For the purpose of this study, data is collected from both primary and secondary sources, so as to answer the basic questions of this research. Primary sources which are first hand materials, such as interviews and questioner were used in the study. The vital element to be considered about

primary sources is that they are explanations or analyses of a raw data, direct personal observations or records. This is called taking the information from the horse mouth, involving the ones that are directly participating on the area of discussion. Secondary sources are writings about primary sources, or about information extracted from them. Detail review of literatures about the various experiences of professional ethics of different countries, the contributing factors for unethical behaviors and its effect is used as a secondary data.

All the data collected for analysis purpose are primary data while secondary data are used in literature review. The primary data which are collected using questionnaires, semi-structured interviews are original in character. Whereas secondary data used are those which are collected by other researchers and have been analyzed to meet a certain objective. As secondary data, relevant journals, reports, books, dissertations and the internet were used. The secondary data provided rich insights for the researcher to come up with questions that can address the very main problems and meet the research objectives.

In this study it is believed that information obtained from different groups of respondents gives clear picture of the existing situation about the practice and effects of professional ethics in 20/80 condominium projects undertaking in Addis Ababa city. To get first hand and original information from the main sources the study focused on those who have direct relation with the issue to be studied. In this case the subjects are going to be the contractor, consultants and quantity surveyors who are on the side of the consultants that were involved. Only professionals are involved in this study.

3.5. Methods of Data Collection

Two data collection methods were used for this research, questionnaire and semi-structured interview. Questionnaires are used from quantitative approach and interviews are used from qualitative approach. The type of research and data needed determines what type of data collection methods to be used. In addition, confidentiality, sensitivity, ease of collection, cost, time and so on can limit the choice of data collection method (Kumar, 2011). Considering these limitations, both questionnaire and semi-structured interview methods are used to enrich the study with the required ingredients and come up with a valid and representative result. It also helped to increase the precision of the result.

A survey is used to collect data. The survey strategy is usually associated with the deductive approach. It is a popular and common strategy in research and is most frequently used to answer who, what, where, how much and how many kind of questions. It therefore tends to be used for exploratory and descriptive research. Surveys are very common because they allow the collection of a large amount of data from a large population in a highly economical way. Often obtained by using a questionnaire administered to a sample, these data are standardized, allowing easy comparison. In addition, the survey strategy is considered as reliable by people in general and is both comparatively easy to explain and to understand (Mark Saunders, 2009).

The survey strategy allows you to collect quantitative data which you can analyze quantitatively using descriptive and inferential statistics. In addition, the data collected using a survey strategy can be used to suggest possible reasons for particular relationships between variables and to produce models of these relationships.

Using a survey strategy gives more control over the research process and when sampling is used, it is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for the whole population. Ensuring if the sample used is representative and designing and piloting the data collection instrument is very important. The researcher need to spend time ensuring that your sample is representative, designing and piloting your data collection instrument and trying to ensure a good response rate (John W. Best, 2006).

3.5.1. Questionnaire

A questionnaire is a popular method of collecting primary data mainly in case of many enquiries, which consists of several questions printed in a distinct order on a form or set of forms. It is an instrument that consists of a series of questions for the purpose of gathering information from respondents. Questionnaire can either be a structured, semi-structured or unstructured questionnaire (Kothari C, 2004). Structured questionnaires have definite and distinct questions that are prepared well in advance. The questions are presented with exactly the same wording and in the same sequence to all respondents. However, unstructured questionnaires are ordinarily formulated around open questions (Kothari C, 2004). Structured questionnaire was used in the study to collect the actual, perception and

attitudes of the respondents. It is because structured questioner is a fast and relatively easy method of collecting data and is more accurate when starting processing and analyzing of the data. Since it takes lesser time to respond and analyze the questions, accurate and higher rate of response can be achieved. It is also relatively time and cost effective.

The questionnaire was used as quantitative approach to gather information, gain insights and to understand the practice of professional ethics, the prevalence of unethical practice, the factors that are contributing for unethical practice and the effect on 20/80 condominium projects of Addis Ababa sub cities. Three different questionnaires were designed and distributed, in order to obtain primary and reliable data from the respondents. The respondents were the contactor, the consultant and the quantity surveyor which are on the side of the consultants. The differences of the questionnaires were only on the third part which is identifying the most prevalent unethical practice in the projects. This difference is made to avoid externalizing problems and for every professional to see what unethical practice is actually there from the perspective of their own specific job on the projects.

Since the questionnaires are used to investigate attitudes, beliefs, feelings, opinions, knowledge and experience, a list of close ended questions were prepared. The professionals went through it based on their knowledge, attitude and experience. A five-point Likert-scale was used in the second, third and fourth part of the questionnaire; responses ranging from very low to very high. The five points were numbered 1–5 with the following meanings: 1, Very low, 2, Low, 3, Medium, 4, High, and 5, Very high. Yes or No question was used for the second and fifth part of the questionnaire.

To know the reliability of the data and to make sure it can be easily administered, questionnaire should be piloted initially by small group of respondents. It gives a very good indication if the study should go as planned or some of the components have to be changed. Pilot test will test whether the questions are understandable, easy to answer, unambiguous and so on. Considering these advantages, a pilot questionnaire was given to eight expertise who have well-regarded experience on the research area to evaluate the quality of questionnaire to check whether the questions are relevant and easily understood by the respondents. The pilot questionnaire was also checked by my advisor for further comments. Finally, combining all feedbacks the questionnaire was revised for better quality

questionnaire. Therefore, the original questionnaire with long and complex sentences were replaced with shorter and clear ones, the size of the questionnaire was also kept to the minimum. The final questionnaire was designed and organized in to six parts.

- The first part was about the general background information of the respondents. This includes the demographic questions about the respondents, age, sex, years of experience, academic qualification and job classification. This information helped the researcher to validate the outcome of the survey.
- The second part was about the overall existence level of professional ethics in 20/80 condominium projects. The evaluation scale was a five-point Likert scale (Very High=5, High = 4 Medium=3, Low=2 Very Low=1). The practice of using code of ethics is also included in this part as a yes or no question.
- The third part is about the prevalence of unethical practices in 20/80 condominium projects. The evaluation scale was a five-point Likert scale (very high=5, High = 4 Medium=3, Low=2 Very low=1)
- The fourth part asked professionals about the factors contributing to unethical practices in 20/80 condominium projects. The evaluation scale was a five-point Likert scale (very high=5, High = 4 Medium=3, Low=2 Very low=1)
- The fifth part was about the effect of professional ethics on 20/80 condominium projects. This part consists of both a Likert scale measurement and a yes or no question.
- The sixth part which is the last one, asked the professionals opinion on ways to improve professional ethics in 20/80 condominium projects.

Since questionnaire data are primarily used for statistical analysis and discussion, sampling procedure and total population for questionnaire are discussed separately in section 3.6.

3.5.2. Interview

In addition to the questionnaires, interview with construction professionals were made. Oral interactions are questions that are presented to the respondent orally and where an oral response from the interviewee is expected (Wilkinson, 2003). Instead of writing the response, the subject or interviewee gives the needed information orally and face-to-face. With a skillful interviewer, the interview is often superior to other data gathering devices.

One reason is that people are usually more willing to talk than to write. After the interviewer gains rapport or establishes a friendly, secure relationship with the subject, certain types of confidential information may be obtained that an individual might be reluctant to put into writing.

In this study the informant interview involves asking questions, expressing interest and recording what will be said using tape recorder and taking notes. Concerned party will be interviewed using semi structured questions. The questions will be used to obtain ideas on practical experiences by role players and their day to day activities. The interviews were done in the form of one to one discussions. The purpose of the interview is to determine the understanding of the actual practice of professional ethics and the roles of different parties and also to determine their response and the effects thereof.

By having a face to face systematic conversation between an interviewer and the interviewee, important information is achieved that can answer the research questions broadly. Interviews can also be conducted electronically via, telephone or computer using video conferencing. There are four types of interview which can be used in a research study; a structured interview, unstructured interviews, semi structured interviews and focus group interviews (Dawson C. , 2007).

In this research, semi-structured interview is used to collect qualitative data. Semi-structured interview type is chosen because it used both the advantages of the structured and unstructured interview approach. In semi-structured interview, interviewer and respondents engage in a formal interview. Semi-structured interviews include a list of questions and topics that need to be covered during the conversation. However, if there are some relevant topics to be addressed in the conversation, the dialogue might be flexible and get away from the originally prepared structured form (Wellington, 2015).

A purposive sampling method which is a non random (non-probabilistic) sampling was used to select interviewees sample for the study. As described by Sakyi I (2015) purposive sampling approach gives far less emphasis on generalizing from sample to population rather greater attention is given to a sample ‘purposely’ selected subjects and dig out perspectives from its reflective and rich information sources. This technique is adapted due to the fact that, the aim of this semi-structured interview data is not to generalize but to get the

experience of the professionals from 20/80 condominium projects on the topic. Further, this data was collected using face to face contact, which takes longer time to address many samples.

Interviewees are selected from contractor, consultant and the quantity surveyors who are on the side of the consultants, based on their educational level and work experience in 20/80 condominium projects. Those professionals who have more than 5 years experience in the projects were purposely selected.

3.6. Sampling Methods and Procedures

In this research, Sampling is an important step because it determines the 20/80 condominium projects that are going to be selected for the study. By having this fact in mind, considering reasonable amount of sample size and appropriate sampling technique is essential. This study mainly focused on the 20/80 condominium projects that are located in the five randomly selected sub cities out of ten sub cities found in Addis Ababa. The 5 sub cities which were randomly selected can be representative to the rest of the sub cities in Addis Ababa and valid generalization can be made on the practice of professional ethics and the effects it has on 20/80 condominium projects in Addis Ababa.

3.6.1. Population

The first step in developing any sample design is to clearly define the set of objects, technically called the universe (population), to be studied (Kothari C, 2004). Burns N. and Grove K. (2003) defined population as the total number of study units from which data can be collected, and this includes individuals, artifacts, events or organizations. In this research, the population of the study has comprised of professionals working on five randomly selected sub cities of 20/80 condominium projects. The randomly selected sub cities were Bole, Yeka, Lideta, Kolfe Keraniyo and Arada, respectively. The random selection is made using Microsoft excel. Contractors that are working on active (ongoing) projects of these sub cities were 220. Fig 3.2 indicates the total number of contractors in each sub city of Addis Ababa. The total numbers of consultants taking part in these sub cities were 9 in number.

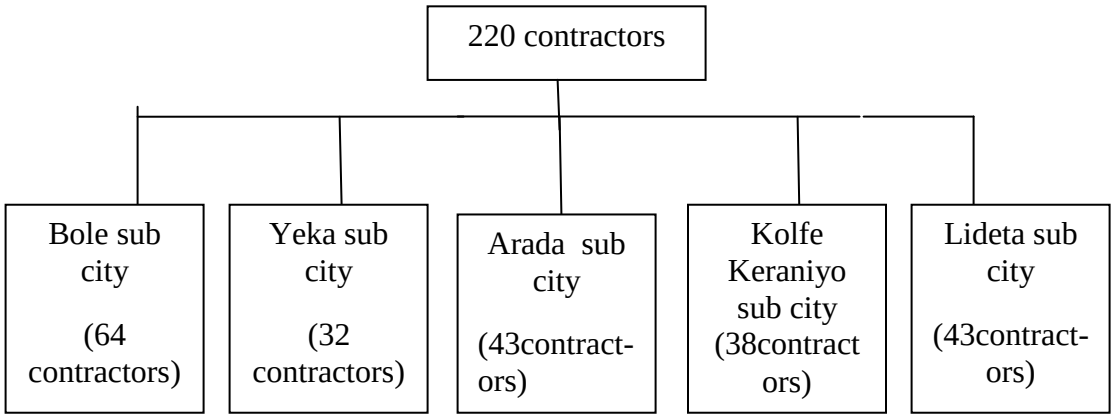


Fig 3.2 Five sub cities selected

3.6.2. Sample Size Determination and Sampling

Sampling refers to the number of items to be selected from the population to establish a sample. Kumar (2011) defined sampling as the process of selecting a sample from the study population to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the population. A sample is a part of the total population that represents this population and sampling allows a representative section of a population to be studied and the results are extrapolated back to the population as a whole (Kothari C, 2004).

The advantages of using sampling includes, reducing time and cost of the study. According to Kumar (2011), studying sample can be more accurate than studying the entire population because it gives the researcher a lot more control over the subjects and also statistical manipulations are much easier with smaller data set. On the contrary the disadvantage of using a sample is that the research will not find out the information about the population's characteristics of interest but only estimate or predict them. The basic criteria to determine sample size is representativeness of the data for the study area without neglecting reliability of data. For this research, the desired precision was taken to an acceptable confidence level of 94% to calculate the sample size. To determine the sample size for population of contractors (Kish, 1965) cited by (Felix Quentin Biketi, 2017) equation3.1 was used, which is:

$n = n' / [1 + (n'/N)]$ ……..…….. [Eq.3.1]

Where:

N = total number of populations

n= sample size from finite population

n' = sample size from infinite population = S^2/V^2;

Where, S^2 is the standard error of population elements, S^2= P (1-P); maximum at P=0.5

V is a standard error of sample population equal 0.06 for the confidence level 94%.

Contractor sample calculation

n= n'/ [1+ (n'/N)] n'= S^2/V^2 = (0.5)2/ (0.06)2 = 69.44

Population (N) = 220 contractor

n= 69.44/ [1+ (69.44 / 220)] = 52.78 n= 53

The sample of the contractors calculated with the formula is 53. In table 3.1 summary of sample size indicates the total number of contractor in each sub city proportioned to a sample size of contractors in each sub city. Total population sampling is done for the consultants since there are only nine consultants in all the selected sub cities

Table 3.1 Summary of Sample size

Addis Ababa Sub cities	Total contractors in each	Sample contractors in each sub city	Total consultants in each sub city
Bole Sub city	64	(64/220)53=15.4~16	2
Arada Sub city	43	(43/220)53=10.3~10	2
Yeka Sub city	32	(32/220)53=7.7~ 8	2
Lideta Sub city	43	(43/220)53=10.3~10	2
Kolfe Keraniyo Sub city	38	(38/220)53=9.15 ~9	1
Total	220	52.85~53	9

Following sample size calculation, simple random sampling technique which is one of the probability sampling methods was used to choose sample of contractors to be studied from the total population of contractors in each 5 sub cities of Addis Ababa. In simple random sampling technique, each member of the population has an equal chance of being selected. Total population sampling was used for the consultants since the population size is relatively

small in number. The same goes true for the quantity surveyors since they are on the side of the consultant.

After taking the total population of the consultants and determining the sample of contractors to be studied in each sub city, then came the selection of those who will respond to the questionnaires on the particular sample project sites. This means that the questionnaire had been distributed to; Contractors, quantity surveyors from consultant side and the consultants (resident engineers, office engineers are included).The Researcher adopted a purposive sampling method to select the professionals to respond to the questionnaire. Purposive sampling technique involves selecting a sample based on experiences or knowledge of the group to be sampled. Purposeful sampling allows the researcher to select those participants who will provide the researcher the richest information, those who are most interesting, and those who manifest the characteristics of most interest to the researcher.

From each party, only professionals have participated in the questionnaire, since the study mainly focused on professional ethics. A total of 9 consultants that are Resident Engineers, office Engineers and 9 quantity surveyors were taken from the consultant side. As indicated in table 3.2 a total of Fifty three (53) respondents from contractors' side, nine(9) consultants and nine (9) quantity surveyors from consultant side participated in the questionnaire. Totally seventy one professionals are included to respond in the survey.

Table 3.2 Summary on the number of Questionnaire Respondents

Addis Ababa Sub cities	Respondents from contractor side	Respondents from consultant side	Respondents from Quantity surveyor side
Bole Sub city	16	2x1=2	2x1=2
Arada Sub city	10	2x1=2	2x1=2
Yeka Sub city	8	2x1=2	2x1=2
Lideta Sub city	10	2x1=2	2x1=2
Kolfe Keraniyo Sub city	9	1x1=1	1x1=1
Total	53	9	9

Although the calculated sample size was 53, as it is indicated in table 3.3, the questionnaire was distributed to 60 contractors to overcome the risk of not responding from the respondents and to reflect higher reliability and benefits of the study. For the same reason twelve questionnaires were distributed for both the consultants and quantity surveyors each. According to Kalton (1971), the obtained response rates as shown in table 3.3 are reasonable and can reflect very good results and outputs. The contractors have a response rate of 84%, the consultants 83.3% and 91.67% response rate for the quantity surveyors.

Table 3.3 Rate of respondents

Population Category	Total Population	Calculated sample size	Questionnaires distributed	Number of respondents	Response rate
Contractor	220	53	60	54	84%
Consultant	9	9	12	10	83.3%
Quantity surveyor	9	9	12	11	91.67%

3.7. Data Quality

To assure the quality and the validity of the data some tasks like pre testing and amendment of questionnaire, pilot testing, close supervision and cross checking of responses should be done. By doing so, the validity and reliability of the data can be ensured, which directly means the quality of the data is ensured.

3.7.1. Validity and Reliability

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity (Al-sweity, 2013).

3.7.1.1. Content Validity

Validity test indicates the degree to which an instrument measures what it is intended to measure. In this research content validity test is utilized to evaluate instrument validity. Content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study. Content validity involves evaluation of questionnaire in order to ensure that it includes all the items that are essential and eliminates undesirable items to a particular construct domain. This is ensured using literature review and use of a panel

discussion to ensure that the questions in the questionnaire are 'essential', 'useful but not essential' or 'not necessary (Sakyi I, 2015). So to ensure the content validity of this research, literature review was used to look for the most prevalent unethical practices in construction projects of different parts of the world, the most contributing factors to poor professional ethics and their effect on the projects and the general public in wider sense.

Secondly, pilot study was done to test whether the questionnaire was relevant to the study area, understandable, unambiguous and easy for respondent to understand and respond. In addition, content validity of the questionnaire is the first statistical test used to test the validity of the questionnaire.

The spearman correlation coefficient for the overall level of professional ethics, the most unethical practices prevalent, the contributing factor, the effect and the way of improving professional ethics in 20/80 condominium projects is checked. The p-values (Sig.) are all less than 0.05, so the correlation coefficients of all items are significant at $\alpha = 0.05$, so it can be said that the items are valid to measure what it was set for.

3.7.1.2 Criteria related validity test of the Questionnaire

Criteria related validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of likert scale (Al-sweity, 2013). In addition to content validity the researcher used Criterion-related validity test (Spearman test) to insure the validity of the questionnaire. This test was used to measure the correlation coefficient between each item in the field and the whole field of the questionnaire that have the same level of similar scale(Al-sweity, 2013).To test criterion-related validity test, the correlation coefficient for each item of the group factors and the total of the field is achieved. The p-values (Sig.) are less than 0.05 or 0.01, so the correlation coefficients of all the fields are significant at α=0.01 (p-value < 0.01) or α= 0.05 (0.01 < p-value < 0.05), so it can be said that the fields are valid to measure what it was set for.

3.7.1.3. Reliability

The test of reliability is another important test of a sound measurement in which measuring instrument is reliable, if it provides consistent results (Kothari C, 2004).Reliability refers to

the consistence, stability or dependability of the data. To call one measurement reliable it needs to have the same results when measured for the second time as it did the first time. If the results are different, then the measurement is unreliable (Sakyi, 2015). There are lots of reliability coefficients that are used to estimate reliability measurement tools. Cronbach's Alpha (α) is the most common measure of reliability of data. If Cronbach's α is less than 0.3, the data is not reliable and cannot be accepted. If Cronbach's Alpha (α) is greater than 0.70 is acceptable for analysis (Cohen, 2010). The reliability of an instrument is the degree of consistency that measures the attribute it is supposed to measure (Mark Saunders, 2009) . As it is discussed in the previous section, the lesser the variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Table 3.4 shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from Cronbach's Alpha (0.735 to 0.932). This range is considered as good and acceptable; the result ensures the reliability of each fields of the questionnaire. In addition, Chronbach's Alpha for the entire questionnaire equals 0.896, which indicates good reliability of the entire questionnaire. There by, it can be said that the questionnaire is valid and reliable.

Table 3.4 Cronbach's Alpha for the professionals' response

No.	Parts of Questionnaire	No. of items	Cronbach's Alpha
1	Overall level of professional ethics	6	0.838
2	Contractor's prevalent unethical practice	15	0.898
3	Quantity surveyor's prevalent unethical practice	8	0.855
4	Consultant's prevalent unethical practice	10	0.850
5	Factors for unethical practice	10	0.887
6	Effects of poor professional ethics	6	0.932
7	Ways of improving	8	0.894

3.8. Ethical Consideration

Ethical concerns are major concerns when planning to do a research, seek access to organizations and to individuals, collect, analyze and report your data. In the context of research, ethics refers to the appropriateness of your behavior in relation to the rights of those who become the subject of your work, or are affected by it. Ethics is defined as the norms or standards of behavior that guide moral choices about our behavior and our relationships with others. Research ethics therefore relates to questions about how to come up with a research topic, design research questions and how to gain access to answer those questions, collect data, process and analyze the data and write up the research findings in a morally acceptable way. This means the research has to be designed in a way that ensures both methodologically sound and morally appropriate to all those who are involved. But sometimes, what is morally defensible behavior as researchers will be affected by broader social norms of behavior. A social norm indicates the type of behavior that a person ought to adopt in a particular situation (Mark Saunders, 2009). So taking the social norms of the respondents into consideration helps for the study to be successful.

This study was conducted according to the ethical guidelines of research requirements. For this purpose, before going to conduct the questionnaire and the interview, permission was asked and the objective of the study was clearly described to the participants. The school identification card that ensures the researcher is a student and letter of permission from Addis Ababa University that indicates a study is being done was shown to the respondents. This was done to make sure as recommended by Sakyi I (2015), the participants would not suffer from deliberate physical harm, discomfort, mental distress, humiliation or loss of privacy. Consequently, the respondents are free to respond without bias since confidentiality is kept. The researcher makes sure that no action is taken without their consent and confirmed that their responses only serve for academic purpose, so they can be honest and share what they know and experience freely.

3.9. Processing and Analysis of Data

The collected data must be processed and analyzed so that it will be meaningful and bring out the answers for the research questions. By processing data, it means editing, coding, classification and tabulation of the raw data collected so it can be ready for analysis. The

term analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data groups (Kothari C, 2004). These are an essential part of any research and thus, in this sub-section discussion was made about how collected data are processed and analyzed.

Measurement is the most precise and universally accepted process of description, assigning quantitative values to the properties of objects and events. The word statistics is sometimes used to describe the numerical data gathered. Statistical data describe group behavior or group characteristics abstracted from a number of individual observations that are combined to make generalizations possible (John W. Best, 2006).

3.9.1. Processing of Data

Data processing is a step before analysis which involves editing, coding, classification and tabulation of collected data for ease of analysis. Editing of data is a process of examining the collected raw data to detect errors and omissions and to correct these when possible (Kothari C, 2004). In this research, questioner that was incomplete was not used since it gives invalid result in the analysis. Only completely and properly filled questioners are used to make sure the data was accurate, consistent and valid to facilitate coding and tabulation.

On the other hand, coding refers to the process of assigning numerals or other symbols to answers so that responses can be put into a limited number of categories or classes (Kothari C, 2004). For this research, coding of collected data was made for interview responses. I1 for response of interviewee 1, I2 for interviewee 2, I3 for interviewee 3, I4 for interviewee 4, I5 for interviewee 5,I6 for interviewee 6, I7 for interviewee 7, I8 for interviewee 8 and I9 for interviewee 9. Most research studies result in a large volume of raw data which must be reduced into homogeneous groups to get meaningful relationships. This fact necessitates the third type of data processing called classification. Classification of data is the process of arranging data in groups or classes on the basis of common characteristics (Kothari C, 2004).

In this research data classification is made prior to collecting questionnaire. For example, factors contributing to unethical practices are arranged in one category. Prevalent unethical practices are categorized in different groups, the effect of professional ethics and ways to

improve professional ethics in 20/80 condominium projects are all grouped differently. The last type of data processing is tabulation of data. This procedure becomes necessary for the researcher to arrange and analyze in concise and logical order. Thus, tabulation is the process of summarizing raw data and displaying the same in compact form (i.e., in the form of statistical tables) for further analysis (Kothari C, 2004). In a broader sense, tabulation is an orderly arrangement of data in columns and rows.

3.9.2. Analysis of Data

The study was analyzed based on descriptive statistics analysis. The descriptive statistics was employed to quantitatively describe variables using mean, standard deviations, frequency or mode. Standard deviation was used to describe to what extent the factors deviated from the mean. The analysis of data in this research gives an indication about the practice of professional ethics in general and presents the most prevalent unethical practices, the factors contributing to the prevalence of unethical practices and the effect it is causing on 20/80 condominium housing projects.

The data collected through questionnaire were analyzed and presented in the form of diagrams, charts, and tables using SPSS (Statistical Package for Social Science) software version 24 and computer programs including Microsoft excel sheet. Mean score result was used to rank factors based on frequency. As it is indicated in equation 4.1, the factors and their effects are measured using five-point Likert scale, where 1=very low, 2= low, 3=medium, 4=high and 5=very high and calculate the mean score for each factor that is used to determine the relative ranking.

$$M = \frac{1N1 + 2N2 + 3N3 + 4N4 + 5N5}{\sum N} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots [Eq.\ 4.1]$$

Where; M= average mean;

N1 = Number of respondents for very low (1)

N2 = Number of respondents for low (2)

N3 = Number of respondents for medium (3)

N4 = Number of respondents for high (4)

N5 = Number of respondents for very high (5)

$\sum N$ = Total number of respondents.

Data collected from the semi-structured interview are analyzed with the use of qualitative data analysis technique. The interviewees were asked about the overall level of professional ethics in the 20/80 condominium projects, the most prevalent unethical practices in the projects, the factors contributing to the unethical practices, the effect on the projects and the possible ways to improve professional ethics. The answers of the interviewees have been recorded and notes were taken. Since the data was qualitative no statistics were used to analyze the findings.

Spearman (Rho) rank correlation coefficient was used for measuring the differences in ranking between 3 groups of respondents scoring (contractors, consultants and quantity surveyors) except on the most prevalent unethical practice in 20/80 condominium housing. As it is indicated in equation 4.2, Spearman (Rho) rank correlation coefficient is given by the following formula (Naoum, 1998):

Spearman's coefficient of correlation (or ρ) $=1-\frac{6\sum di^2}{N(N^2-1)}$……..[Eq. 4.2]

Where:

Rho (ρcal) – Spearman rank correlation coefficient

di – The difference in ranking between each pair of factors

N – Number of factors (variables)

But for this study the Spearman rank correlation coefficient is done using SPSS version 24. Accordingly, after determining the mean values for all variables described in the questionnaire, ranks were given based on their respective mean value of ratings calculated. Then, since the respondents for the questionnaire were from three groups of professionals, rank correlation coefficients were determined. Based on rank order correlation coefficients the agreement between the three groups- contractors, consultants and quantity surveyors were checked by hypothesis testing.

Procedure for hypothesis testing:

- Define the null hypothesis (H0) and the alternative hypothesis (HA).
- Choose a value for P. (i.e. choose level of significance)
- Calculate the value of the test statistic, Rho (ρ cal).
- Compare the calculated value with a table of the critical values of the test (Annex C).

- If the calculated value of the test statistic is less than the critical value from the table, accept the null hypothesis (H0). If the absolute (calculated) value of the test statistic is greater than or equal to the critical value from the table, reject the null hypothesis (H0) and accept the alternative hypothesis (HA).

The Null Hypothesis (H0): There is no agreement in the ranking order between the groups of respondents.

The Alternative Hypothesis (HA): There is agreement in the ranking order between the three groups of respondents.

The detailed data analysis and discussion were presented in the next chapter of the study.

3.10. Summary

In this chapter, discussion was made for all the procedures that were followed in the processing and analysis of the study. Table 3.5 shows the summary of the methodology and the analysis of the data.

Table 3.5 Summary of the methodology

Questionnaire survey	
Purpose	➢ To assess the overall level of professionals ethics in 20/80 condominium projects ➢ To identify the most prevalent unethical practice in 20/80 condominium ➢ Identifying the factors contributing to unethical practice in 20/80 condominium projects ➢ To identify the effects of professional ethics on 20/80 condominium projects of Addis Ababa ➢ Identifying the best solution to improve professional ethics
Population	220 Contractors , 9 consultants and 9 quantity surveyor from 5 randomly selected sub cities
Sampling	➢ Multi stage sampling:- 1. Five sub cities were randomly selected from 10 sub cities of Addis Ababa. 2. Contractors were randomly selected from each sub city based on their quota. Total population sampling was conducted on the Consultants and quantity surveyors of each sub city selected. ➢ Respondents: 53contractors, 9 consultants and 9 quantity surveyors.

Data collection instrument	Questionnaire
Data analysis	➢ Percentage and Frequency method ➢ Likert scale of five ordinal measures were used to calculate: ▪ Mean score (MS) and standard deviation ▪ Ranking ➢ Correlation using spearman's rank correlation coefficient
Result presented	Table or charts
Interview	
Purpose	To cross check questionnaire results as part of data triangulation
Population	Contractors, consultants and quantity surveyors from 5 randomly selected sub cities
Sampling	Purposive sampling
Sample size	9 interviewees
Data collection instrument	Semi- structured interview
Data analysis	Descriptive analysis
Result presented	Tables and Discussion

4. RESULTS AND DISCUSSION

4.1. Introduction

This chapter deals with the analysis and discussion of the data gathered through questionnaire and interview about the practice of professional ethics and its effect on 20/80 condominium projects of Addis Ababa city. It presents the result of data collected from professionals who are working as contractor, consultant and quantity surveyor using questionnaire and interview.

4.2. Questionnaire Data and Analysis Results

4.2.1. Response Rate

A total of 60 questionnaires were sent to the contractors, 12 for the consultants and 12 for the quantity surveyors. As it is shown in table 4.1 below, out of 60 questionnaires sent to the contractors 54 completed questionnaires were received and 1 was discarded due to incomplete response. The rest was not returned back. It has a response rate of 84%. Since a number of questionnaires were added to protect the data from being discarded and to avoid the risk of incomplete responses, the researcher was able to find the calculated sample size of data. Out of the 12 questionnaires given for the consultants 10 completed questionnaires were returned back. This gives a response rate of 83.3%. Out of 12 questionnaires given for the quantity surveyors 11of them were completed and returned back. This made a response rate of 91.67%.

For any study, the response rate of a questionnaire is very important to the reliability of the findings. A low response rate may decrease the statistical power of the data collected and weaken the reliability of the results. Even if there is no universally accepted figure to describe an ideal or even a minimally acceptable survey response rate, the University of Texas (2007) stated the acceptable response rate based on how the survey was administered, 50% response rate is good for questionnaires administered through email and 70 % is good for those administered face to face. Since these research questionnaires were administered face to face, 89.28 % response rate is acceptable.

Table 4.1 Summary of questionnaires distribution and responses

Description	Contractor	Consultant	Quantity surveyor	Total
Questionnaires Distributed	60	12	12	84
Questionnaire Returned	54	10	11	75
Percentage of responses	84%	83.3%	91.67%	89.28%

4.2.2. Educational Level

The educational level of the contractors was found to be, 9.4% (5) of the respondents have a Masters degree and 90.6% (48) of the respondents were Bachelor degree holders. Educational background of the consultant showed 77.8% (7) of the respondents have bachelor degree and only 22.2%(2) are qualified with masters degree.100% (9)of the respondents of quantity surveyors are qualified with bachelor degree, which means every quantity surveyor that is included in the sample have no masters degree. Educational level plays a significant role on the validity and reliability of responses in terms of understanding the questions and relating it with their day to day work experience. It also shows the professionals competence which is one of quality that makes an ethical professional (Code of ethics ,2017). Thus, the study shows that most of the professionals that are working in 20/80 condominium projects are not upgrading themselves academically. Figure 4.1 illustrates these results.

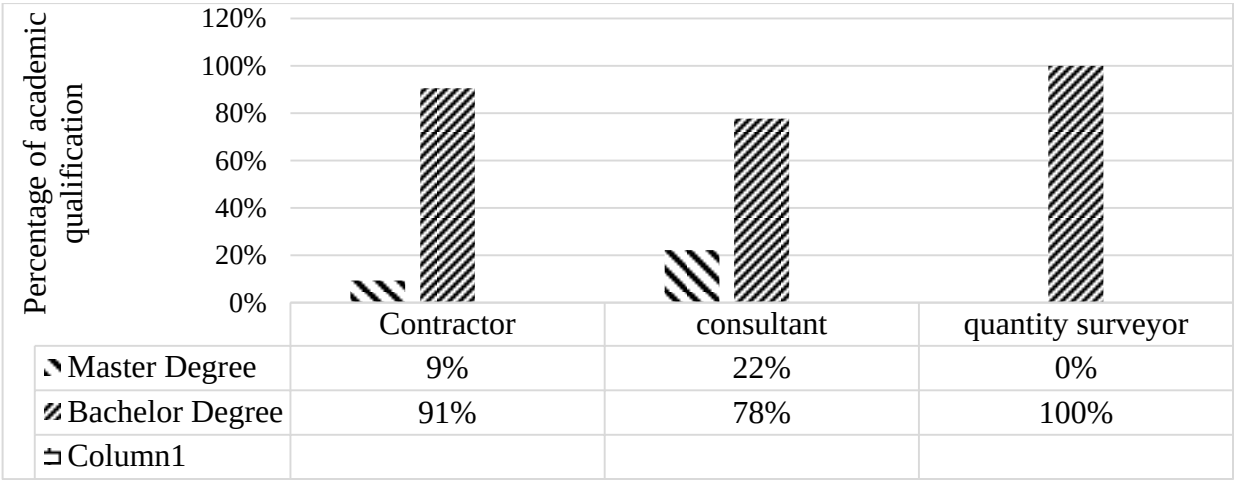
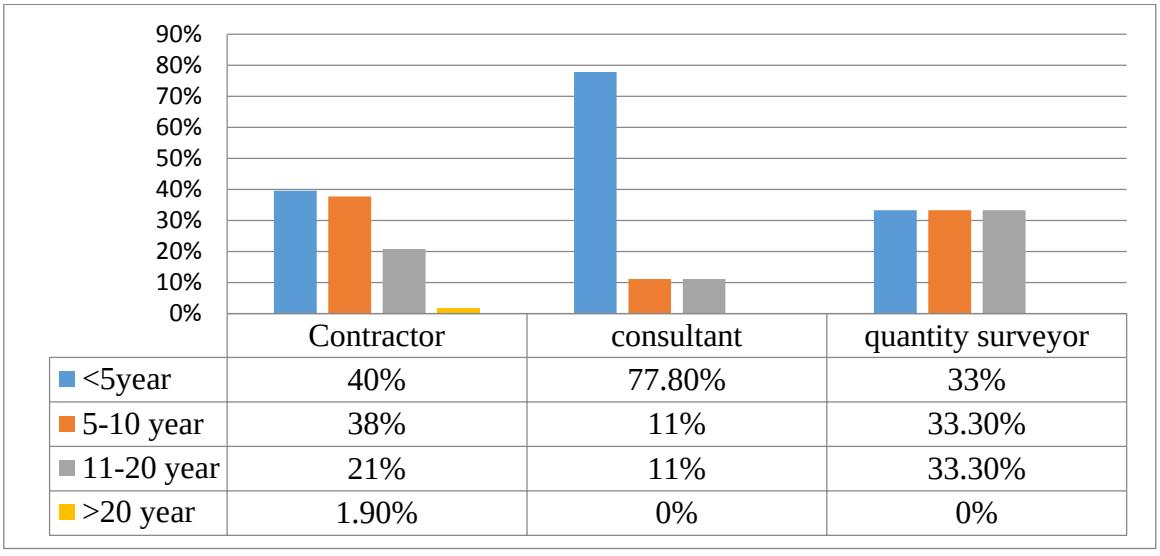


Figure 4.1 Percentage breakdowns by respondents' academic qualification

4.2.3. Experience of Respondents

Experience of the respondents is another important factor that plays role in making this study valid and reliable. An experienced professional have a better skill of understanding the questions in relation to the reality he/she has been working on for years. Especially on this specific topic, the longer one stayed on the job the more he/she can understand the ethical gaps that usually prevails on the projects and might have better insight on what to do to improve the professional ethics in 20/80 condominium projects. The contractors experience shows that majority of the respondents 39.6% (21) have less than five years of experience in the construction industry followed by 37.7% (20) respondents that have between 5 to 10 years of experience. 20.8%(11) of the respondents have 11 years up to 20 years of experience and the rest 1.9%(1) of the respondent has above 20 years of experience. From the consultants 77.8% (7) of the respondents have less than 5 years of experience. 11.1% (1) of the respondent has worked between 5 to 10 years and 11.1(1) has between 11 to 20 years of experience. 33.3% (3) of the quantity surveyors have less than 5 years of experience and 33.3% (3) of them have between 5 and 10 years. The rest 33.3% (3) have between 11 and 20 years of experience. The above result indicates the information submitted from the respondents would be relatively reliable and valid. Figure 5.2 shows the respondents' years of experience.

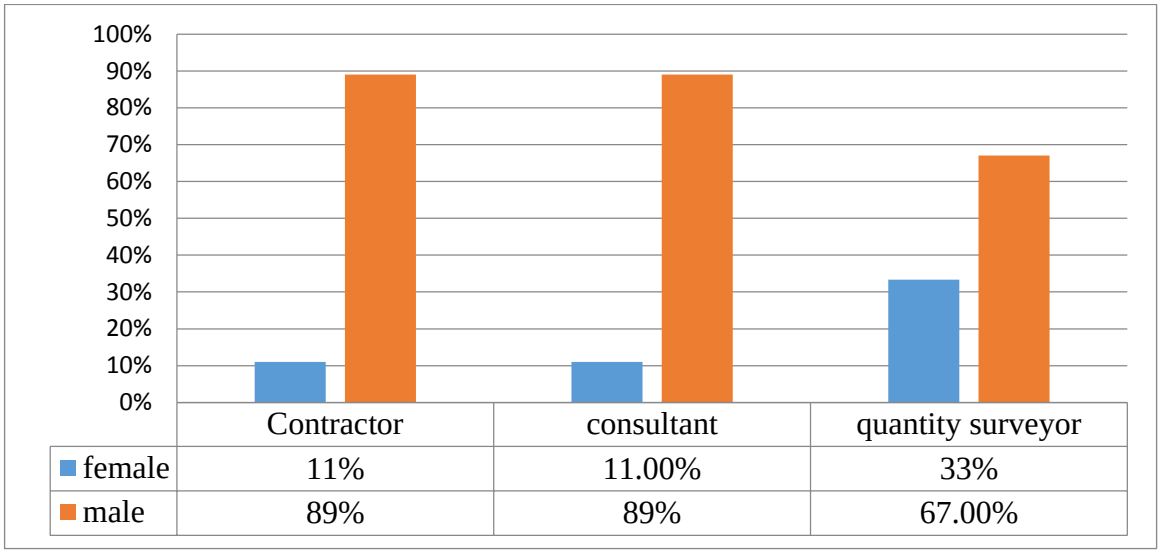


	Contractor	consultant	quantity surveyor
<5year	40%	77.80%	33%
5-10 year	38%	11%	33.30%
11-20 year	21%	11%	33.30%
>20 year	1.90%	0%	0%

Figure 4.2 Work experiences of respondents

4.2.4. Sex of respondents

As it is illustrated on fig 5.3, 89% (47) of the total contractor respondents are male, while only 11% (6) are female. The same goes true for the consultants, which is 89% (8) were male and only 11% (1) were female. For quantity surveyors 66.7% (6) were male and the rest 33.3% (3) were females. This implies most of the projects of 20/80 condominium are male dominated. To change this male dominance in the projects and create fair representation of qualified females, encouragement and equal opportunities has to be given to learn and work on their qualified profession.



	Contractor	consultant	quantity surveyor
female	11%	11.00%	33%
male	89%	89%	67.00%

Figure 4.3 Sex of respondents

4.2.5. The Overall level of professional's Ethical conduct in 20/80 condominium projects

4.2.5.1. Overall level of professional's ethical conduct

Professionals in the construction industry are susceptible to unethical conducts. As Hamzah Abdul-Rahman (2013) stated in the study, construction industries provide the best opportunities for ethical dilemmas. They are also considered as one of the most deceitful industries in most parts of the world (Transparency International, 2005). The survey result shows that 40.6% of the contractor respondents felt, the overall level of professionals' ethical conduct in 20/80 condominium projects is low. 38.8 % of respondents said it is medium and 20.6% of the contractors responded high.

Taking the quantity surveyors, most of the respondents(55.6 %) felt there is low level of professional's ethical conduct. 22.2% of them responded there is somehow medium level and the rest 22.2% responded high level of professional's ethical conduct is observed in 20/80 condominium housing projects.

In the third group of professionals 55.6% of the consultants felt there is low level of overall professional's ethical conduct. 22.2% responded medium and the rest 22.2% responded high. The survey result indicates that most of the professionals feel that there is low level of professional ethics which support Schuafelberger (2014) study that argues, the construction industry creates a good ground to misbehave as a professional.

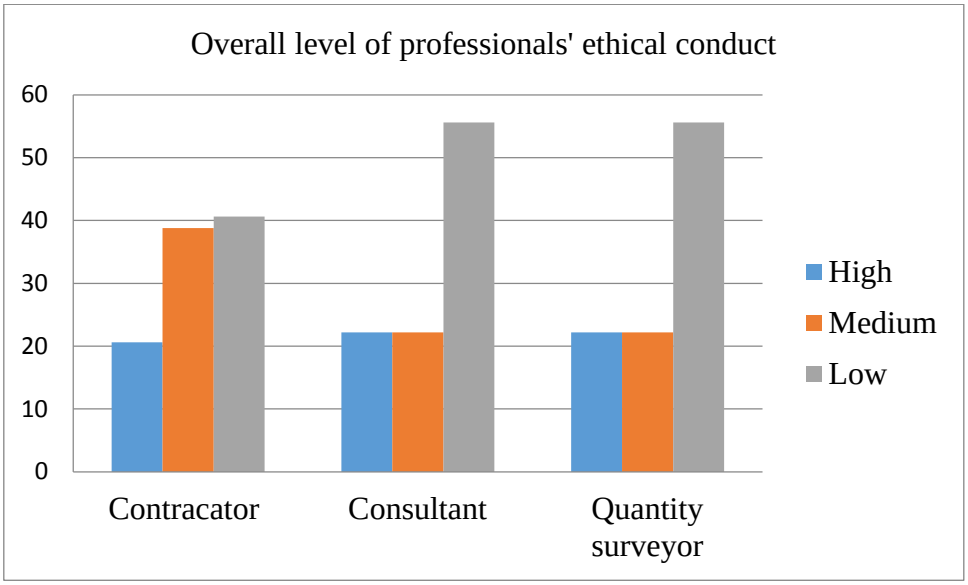


Figure 4.4 Overall level of professionals' ethical conduct

4.2.5.2. Professional's Loyalty to their job

According to the study of AyatYousef Al-sweity (2013), loyalty is the most important factor in the construction industry. Professionals must basically be loyal to the ethics of their profession, since that will help them achieve their loyalty to their client and to the wider public. Taking that as a ground a survey was made and the result as it is indicated in the figure 4.5, 45.3% of contractor respondents felt there is medium level of professional's loyalty to their job. 33.9% of contractor respondents answered there is low level of professional's loyalty to their job. 20.8% responded high level of loyalty.

The second group of professionals involved in the study which are quantity surveyors responded that there is medium level of professional's loyalty on doing their job. Most of the respondents (44.5%) responded medium and some of them (33.3%) responded that there is low level of loyalty in 20/80 condominium projects and the rest 22.2% of the respondents answered high.

From the consultant, 44.5% responded medium and 33.3% of the respondents answered there is low level of loyalty and 22.2% of respondents said there is high level of loyalty in 20/80 condominium projects.

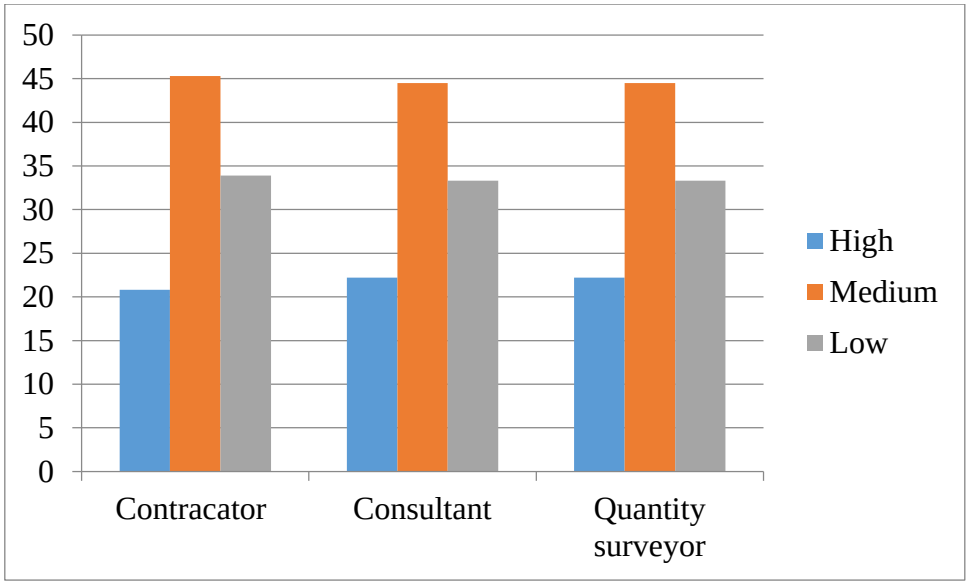


Figure 4.5 Professionals loyalty to their job

4.2.5.3. Professional's knowledge about professional ethics

The study of Sunil K. Sinha (2007) shows, there is a lack of awareness in construction industry regarding how to integrate social awareness and ethical behavior into professional practice. There are several challenges in the construction industry regarding ethical issues and due to the fact that professionals fail to know the framework to make ethical decisions. Most of the contractor respondents (56.6%) felt the knowledge of the professionals about professional ethics is medium. 32.1% answered high and 11.3% of the respondents answered low.

Most quantity surveyor respondents (44.5%) responded there is high level of professional's knowledge in 20/80 condominium projects and 33.3% responded medium and 22.2% of respondents answered low level of professional's knowledge.

66.7% of the consultant respondents answered there is medium level of professional knowledge and 33.3% of respondents answered there is low level of professional knowledge in 20/80 condominium projects. This study finding agrees with AyatYousef Al-sweity (2013) study in that most of the professionals have a medium level of awareness about professional ethics.

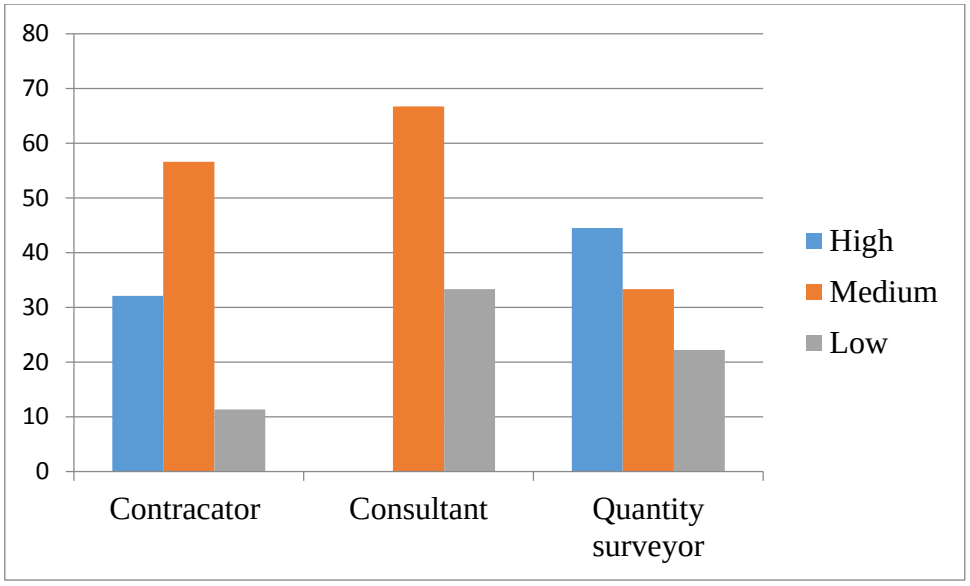


Figure 4.6 Professionals' knowledge about professional ethics

4.2.5.4. Professional's temptation to act unethically

The findings of the study by K. T. Odusami and O. J. Ameh (2009), agrees with the findings of this study in that, they both indicate construction professionals have a higher desire or temptation to act unethically on their job. In this study it is indicated that most of the professionals have medium to high level of temptation to act unethically in the projects.

As it is indicated in figure 4.7 below, the contractor respondents (43.4%) believed there is high level of temptation to act unethically. Whereas 37.7% of them responded there is medium level of temptation to act unethically and 18.9% responded low.

Most quantity surveyor respondents (66.7%) felt that there is high level of temptation to act unethically and 22.2% responded medium level and only 11.1% responded low in the survey.

Most of the consultant side respondents (77.8%) felt there is high level of temptation to act unethically and only 22.2% responded there is medium level of temptation among professionals.

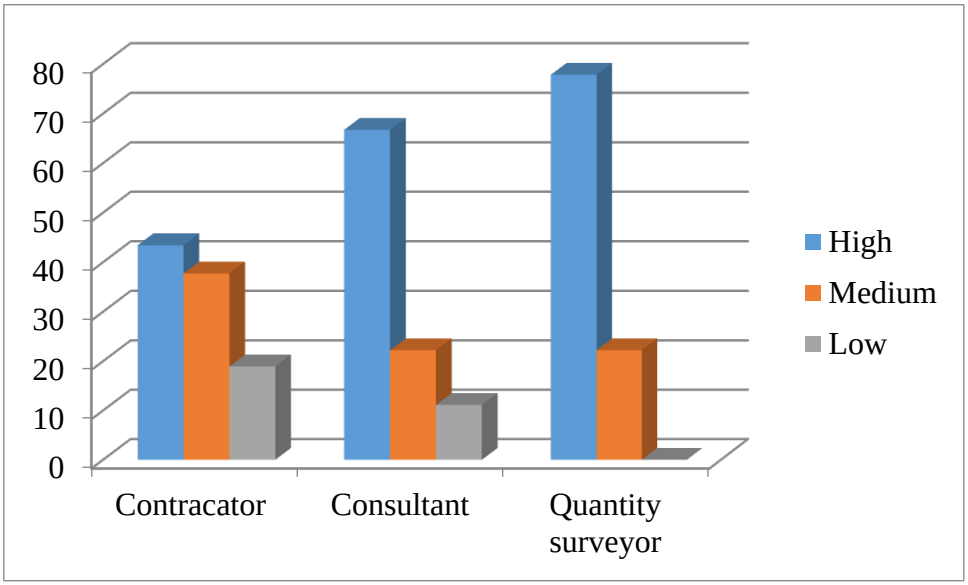


Figure 4.7 Professionals temptation to act unethically

4.2.5.5. Professional's serving the public interest more than their client's or their own interest.

As Mathenge (2012) discussed it in his study, a professional has to know where the balance should be kept in keeping the clients interest and in the serving the public. It also discussed that it is highly unethical to take advantage over the wider public to meet one's own personal interests. As it is indicated in figure 4.8 below most of the professionals responded there is medium level of tendency to serve the public interest more than the client's or one's own interest. The study finding indicates that 52.8% of the contractor respondent's responded medium, while 22.7 % of them answered low and only 24.5% responded there is high level of professional's interest to serve the public more than their own or their client's interest.

33.3% of Quantity surveyor respondents answered there is low level of interest in serving the public. Another 33.3% respondents answered medium level and the rest 33.3% responded high level of interest in serving the public more than the client or one's own personal benefits.

Most of consultant respondents(44.4%) felt there is medium level of interest in serving the public more than the client or one's own personal needs. 22.2% responded low and the rest 33.4 % responded high. This study finding agrees with Ehsan N et al. (2009) result, which shows high prevalence of scarifying the public interest for one's own personal benefits that may be caused due to love of money or greed.

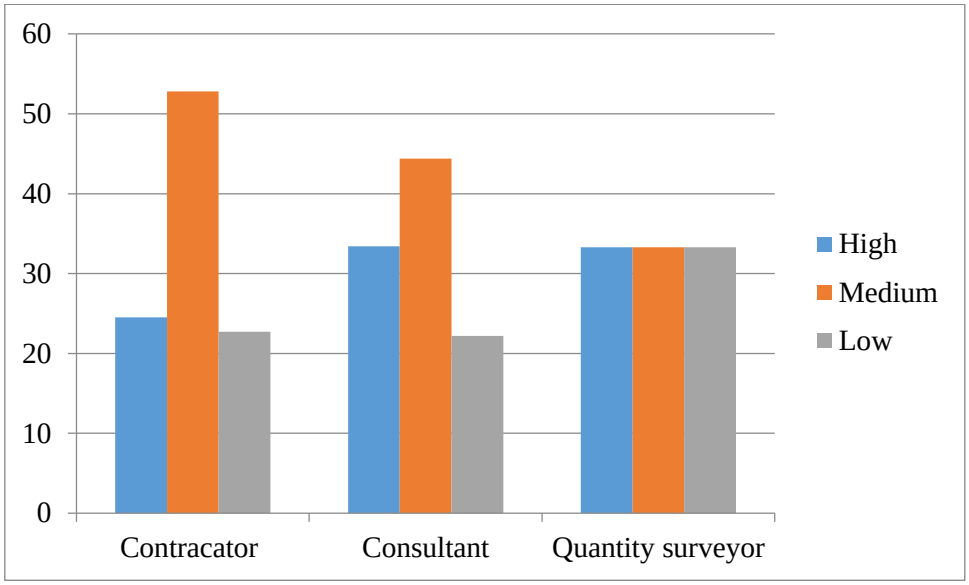


Figure 4.8 Professionals serving the public interest more than their client/their own

4.2.5.6. Professionals commitment to do their job ethically

The study finding of Ayat Yousef Al-sweity (2013) indicates that there is lack of commitment among professionals and it is related with the high degree of absence of loyalty to execute one's job properly. In this study as it is illustrated in figure 4.9 below, 37.7% of the contractor respondents felt that, there is medium level of commitment of professionals on doing their job ethically. 34% of the contractors felt low and 28.3% felt there is high level of commitment.

Most respondents of quantity surveyor(44.4%) answered there is low level of commitment of the professionals in 20/80 condominium housing projects.33.4% of respondents responded by saying there is medium level of commitment and only 22.2% respondents felt there is high level of commitment.

Most of the respondents(55.6%) in the consultant side felt there is medium level of commitment among professionals and 33.3% of the respondents felt there is low level of professional's commitment in 20/80 condominium projects and only 11.1% of the respondents felt there is high level of professionals commitment to do their job. Thus, this finding supports the finding of AyatYousef Al-sweity (2013).

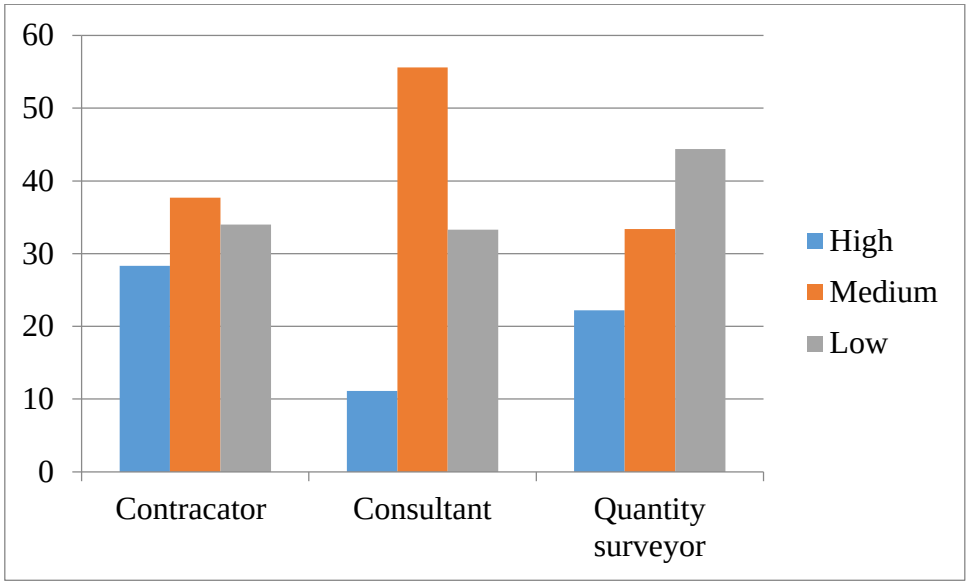


Figure 4.9 Professionals commitment to do their job ethically

4.2.6. Practice of code of ethics on 20/80 condominium projects

1.Existence of code of ethics on the projects

A. Contractors response

There are different ways of dealing with the prevalence of unethical practices in the construction industry such as code of ethics. Vee and Skitmore (2003) suggested that, the high number of respondents who belonged to organizations that had codes of ethics is a good indication that some form of the ethical structure within their organizations exist which can guide them in making decisions of ethical content and guard both the professionals and

the projects against unethical behavior. The study of Schuafelberger et al (2014) in the mean time argues that, existence of code of ethics alone is no guarantee to have an ethical organization. To clear the argument this study findings came up with the answer on both the existence of the code of ethics and its implementation step by step. The pie chart indicated in figure 4.10 below shows that 60% of the respondents agreed that there is code of ethics on the projects and the rest 40% agree that there is no code of ethics which indirectly means the professionals are working with the previous trend and their commonsense.

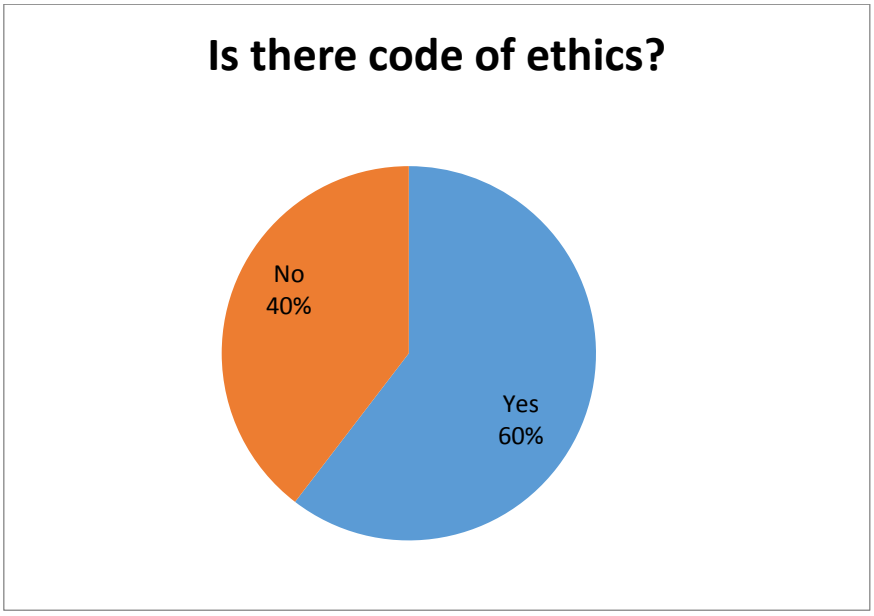


Figure 4.10 Contractors response on the existence of code of ethics

B. Consultants response

More than half of the consultants (56%) as it is indicated in Figure 4.11 agreed on the existence of code of ethics on the projects. While the rest 44% responded that they have never seen a code of ethics on their stay at 20/80 condominium projects. A study by Hamzah Abdul-Rahman (2013) which was conducted in Malaysia construction found out similar result where the majority (77.3%) of the respondents' has their own code of ethics/conduct in their firms. Another 22.7% of the respondents indicated that they got no formal code of ethics.

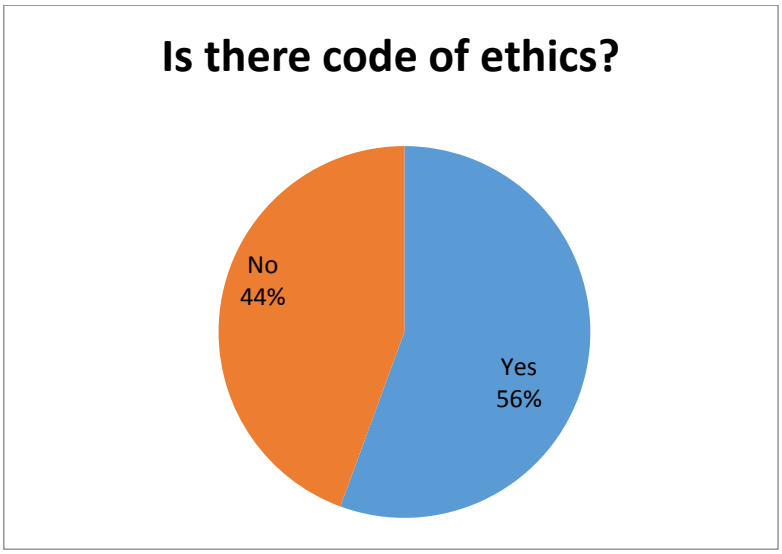


Figure 4.11 Consultants response on the existence of code of ethics

C. Quantity surveyors response

In this result as it is indicated in figure 4.12, more than half (56%) of the quantity surveyors responded there is no code of ethics on 20/80 condominium projects and 44% of the respondents answered yes there is.

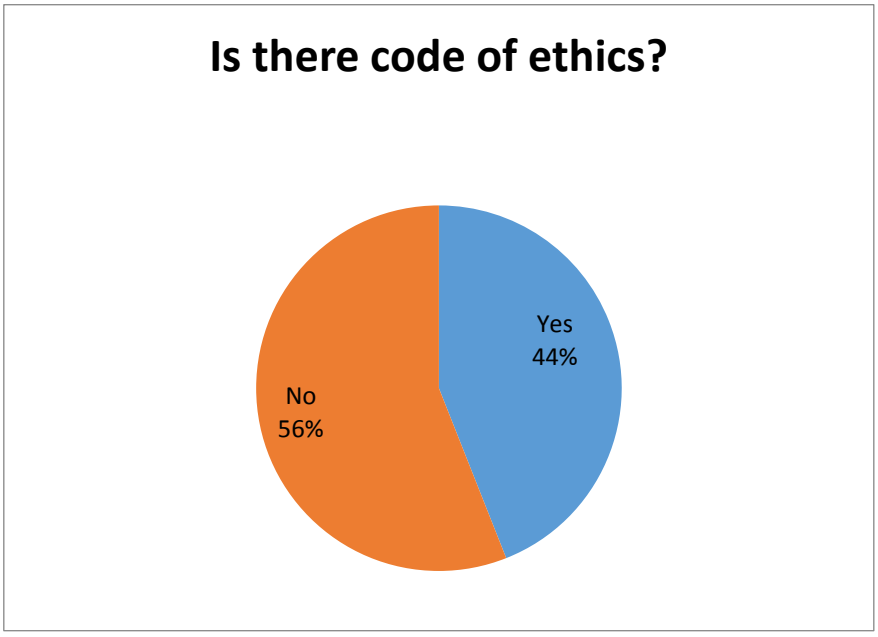


Figure 4.12 Quantity surveyors response on the existence of code of ethics

2. If yes, have you read it?

According to Ehsam N et al (2009) the result of the study that was made in the professionals of Pakistan reveals that even though code of ethics exists in the projects, the professionals did not usually care to read or get the access to read it. The questionnaire revealed that although all (100%) the engineers, constructors and consultants are members of Pakistan Engineering Council but many (65%) did not know about the existence of code of ethics and code of conduct of Pakistan Engineering council. Out of those who knew about it (35%), about 50% had never read these codes. This study has also found a similar result to that of Ehsam N et al (2009), where 40.5% of the contractors responded no for the above question that asked if there is a code of ethics in the projects so they skipped the yes or no question of this part. Where 46.3% of the contractors responded that they have read the code of ethics and 13.2% of the contractors responded even if it is available but have never come across to it and took time to read it. 44.6% of the second group of professionals that are the consultants responded the absence of the code of ethics so they did not take part in the yes or no question. 44.3% of them answered that they have read it and the rest 11.1% of the respondents said though they know the code of ethics exist in the project but they have never read it. Out of 44.4% of respondent who agreed on the presence of code of ethics on 20/80 condominium projects 33.3% of them have read the code of ethics and only 11.1% responded that they have not read it. Table 4.2 shows the percentage of professionals that read the code of ethics.

Table 4.2 Percentage of professionals that read the of code of ethics

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyors	Percentage of quantity surveyors
Valid	if no for the above	22	40.5	4	44.6	5	55.6
	yes	24	46.3	4	44.3	3	33.3
	no	7	13.2	1	11.1	1	11.1
	Total	53	100.0	9	100	9	100

3. Implementation of code of ethics

According to Schuafelberger et al (2014), the construction industry provides a number of ways of dealing with unethical issues such as a code of conduct by various professional bodies. Yet, if the change does not begin at the individual level, the code of conduct will not do much to change the situation. Having that in mind the implementation of the code of ethics has been studied.

The finding of the survey indicates that more than half (64.2%) of the contractor respondents as it is shown in table 4.3 agreed that the code of ethics is not actually implemented while doing the projects. While 35.8% of the respondents have agreed that it is implemented according to the code of ethics. Again, more than half (55.6%) of the consultants responded that code of ethics is not actually implemented and the other 44.4% of respondents agreed that it is being implemented. As the result shows, the same is true for the quantity surveyors. More than half (66.7%) of the respondents agreed that the projects are not actually being constructed taking code of ethics into consideration. While 33.3% agreed that the projects are implemented taking the code of ethics into consideration. The survey result supports the study of Ho (2010), that uncovers most construction projects are not constructed taking the code of ethics as a guide line which make the code of ethics a useless paper that is found somewhere in the drawer. The existence of the code of ethics alone is no guarantee for the implementation so an effort has to be made on how the professionals can actually take it into consideration.

Table 4.3 Percentage of implementation of code of ethics

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyors	Percentage of quantity surveyors
Valid	yes	19	35.8	4	44.4	3	33.3
	no	34	64.2	5	55.6	6	66.7
	Total	53	100.0	9	100	9	100

4. Difficulty to implement code of ethics

The study of B Mukumbwa & M Muya (2014) which was made to study the professional ethics in the construction industry of Zambia has identified the level of existence of the code of ethics in the projects but failed to assess the degree of implementation. But this study has addressed the concern of implementation in detail. As it is indicated in table 4.4, more than half of the contractors (54.6%) agreed that applying code of ethics is difficult in 20/80 condominium projects and 45.4% of the respondents agreed it is not difficult to apply. 55.6% of the consultant respondents felt it is difficult to apply code of ethics while 44.4% of the respondents felt it is not difficult to apply. 66.7 % of the quantity surveyors also responded that they think applying code of ethics is difficult. Whereas 33.3% responded it is not difficult.

Table 4.4 Percentage of difficulty to apply code of ethics

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyors	Percentage of quantity surveyors
Valid	yes	29	54.6	5	55.6	6	66.7
	no	24	45.4	4	44.4	3	33.3
	Total	53	100.0	9	100	9	100

5. Reasons it is difficult to implement code of ethics

A. Contractors response

As it is clearly illustrated on figure 4.13, 45.4% of the contractors are those who thought applying the code of ethics is not difficult. The rest 54.6% of the contractors responded that it is difficult and the highest reason as per that result of the data is the accessibility issue. 18.9% of the respondents agreed that code of ethics is not accessible for the professionals. And the second reason is the existence of weak accountability system which accounts for 15%. But as of the finding of AyatYousef Al-sweity(2013) study, which was made in Gaza strip ,it stated that weak accountability system of the government was the highest and most reason why the professionals fail to implement code of ethics. So the contractors survey

result doesn't support the finding of AyatYousef Al-sweity(2013) study. 11.3% of the respondents agreed that past trend of the construction industry is the third reason code of ethics is not implemented. The last and the fourth reason where 9.4% of the contractors agreed with is that the strict rule of the code of ethics.

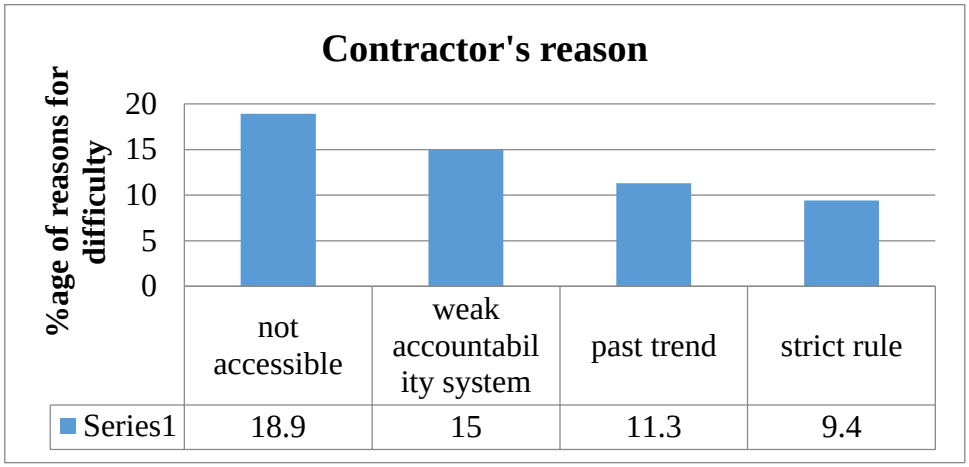


Figure 4.13 Contractors' reasons of difficulty

B. Consultants response

Some of the consultants (44.4%) felt that it is not difficult to implement code of ethics, so they skip this part where the rest of the consultants respond to the reasons of difficulty to implement code of ethics. Most of the consultants (22.2%) agreed that the presence of weak accountability system is the reason why code of ethics is not implemented. This finding is compatible with the study of AyatYousef Al-sweity (2013), were weak accountability system of the government was found to be the highest and most reason why the professionals fail to implement code of ethics. The problem of accessibility of code of ethics is the second reason most consultants agree with and it accounts for 13.1%. 11.1% of the consultants agreed that the past trend of the construction industry is the third reason why implementation of code of ethics is difficult. The last and the fourth reason which accounts for 9.2% is that code of ethics is difficult to understand and interpret. Figure 4.14 illustrates consultants' reasons of difficulty.

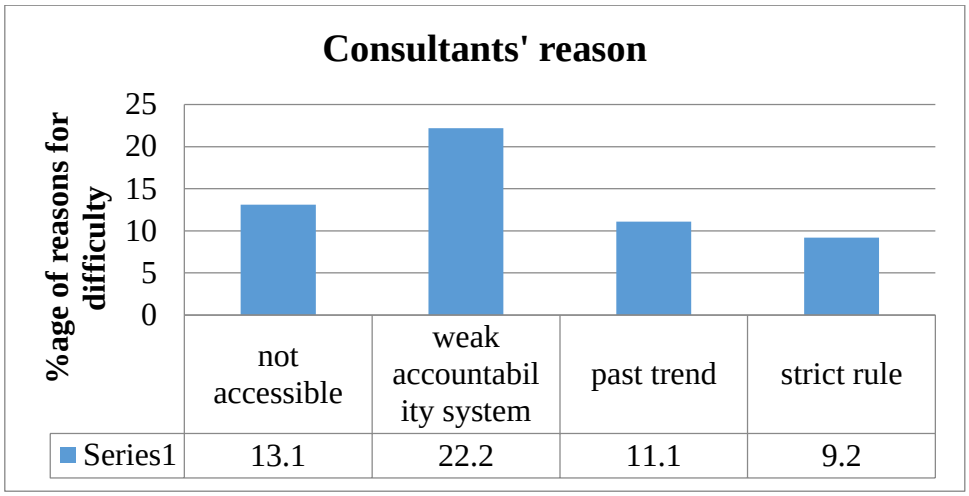


Figure 4.14 Consultants' reasons of difficulty

C. Quantity surveyors response

Out of all, 33.3% of the quantity surveyors felt that it is not difficult to implement the code of ethics, so they skip this part where the other quantity surveyors responded to the reasons of difficulty to implement code of ethics. Most of the quantity surveyors as indicated in figure 4.15 agreed that the problem of accessibility is the first reason why code of ethics is not implemented. 22.3% of the quantity surveyor agreed that the past trend of the construction industry is the second reason why implementation of code of ethics is difficult and the presence of weak accountability system is found to be the third reason where quantity surveyors agree with and it accounts for 11.1%.

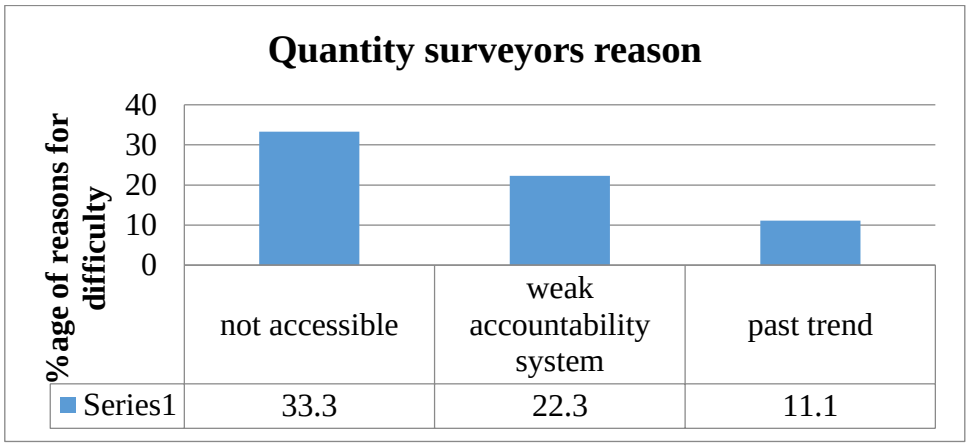


Figure 4.15 Quantity surveyors' reasons of difficulty

4.2.6.1. Summary about the code of ethics

In controlling professional ethics, one common measure is the code of ethics (R. K. Shah and M. Alotaibi, 2017).Table 4.5 summarizes the answers about the code of ethics. The results indicate that even there is code of ethics in the projects; the professionals fail to implement the code of ethics properly. As it is clearly shown in the table more than half (53%) of the professionals responded that there is code of ethics on the projects but only 41.3% of the professionals have read it. The professionals also agreed that there is poor implementation of the code of ethics. As it is shown in table 4.5, only 37.8% of the professionals responded that it is implemented. The study of Hamzah Abdul-Rahman (2013) indicates that the majority (77.3%) of the respondents' firms practice their own code of ethics/conduct. Another 22.7% of the respondents indicated that they do not have a formal code of ethics/conduct. But the study has failed to study the level of implementation and the reasons behind poor implementation. The same is true with the study of B Mukumbwa & M Muya (2014) which fails to study the issue of implementation. This study has filled that gap and found out that more than half (59%) of the professionals felt that it is difficult to apply the code of ethics and the main reason behind that is the absence of accessibility of the code of ethics.

Table 4.5 Summary about the code of ethics

	Percentage Contractors responded yes	Percentage of consultants responded yes	Percentage of quantity surveyors responded yes	Average percentile
Is there a code of ethics	60	56	44	53.3
Have you read it	46.3	44.3	33.3	41.3
Are the projects implemented according to that	35.8	44.4	33.3	37.8
Is it difficult to apply	54.7	55.6	66.7	59

4.2.7. Measures to take witnessing unethical practices

1. Contractors response

The study of Doran (2004) stated that 61 percent of respondents to his study in the construction sector in the USA agreed that the industry was polluted with unethical practices. Eighty four percent of sampled respondents that included clients, architects, construction managers, contractors and sub-contractors agreed that they had experienced, encountered or observed unethical practices in the construction sector (Doran, 2004). But the study has failed to identify what action the professionals had taken while witnessing unethical acts. In this study the measures the professionals will take when any unethical practices are witnessed is studied.

As it is indicated in figure 4.16, the majority of the contractor respondents (66%) answered that if they witness unethical practice on the projects they will try to correct it rather than reporting to the top management or any judiciary body that is concerned to keep such kind of cases accountable. 17% of the respondents responded that if they witness unethical practice they will report to the top management. Whereas 9.4% of them responded they will report to the judiciary bodies and the rest 7.5% of contractors responded that they will keep silent. The finding is found to be compatible with the study of AyatYousef Al-sweity (2013). Both findings indicate that most of the professionals take a corrective measure if any unethical practice took place at their sight. According to J. Mason (2009) of moral principles, this measure lacks objectivity and it will not reduce unethical practices.

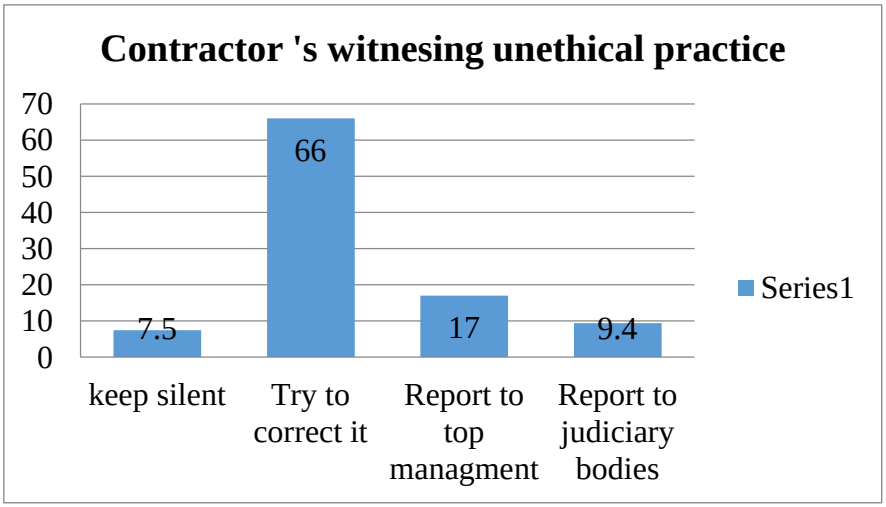


Figure 4.16 Contractors' witnessing unethical practice

2. Consultants response

As it is presented in the figure 4.17, the majority of the consultant agreed that if they witness unethical practice they will try to correct it. The second most responded answer is keeping silent. Reporting to top management is ranked as the third measure to be taken as of the respondents.

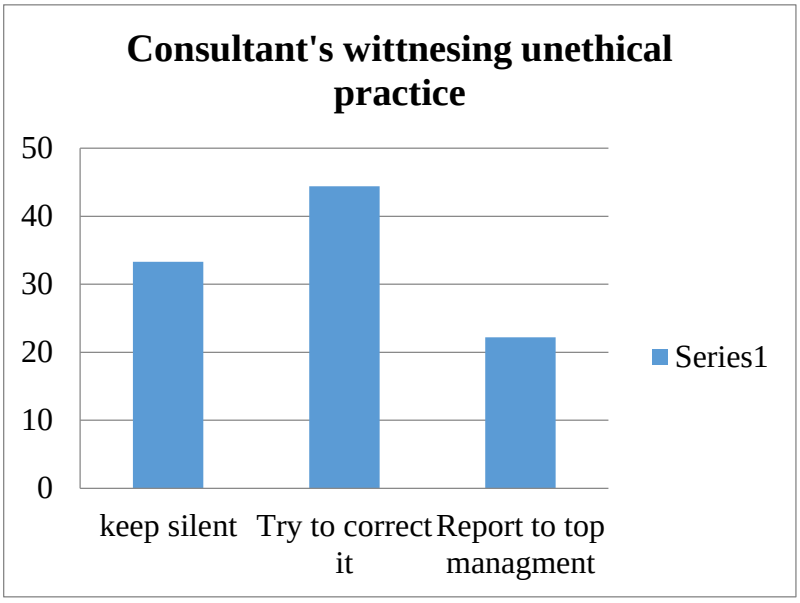


Figure 4.17 Consultants' witnessing unethical practice

3. Quantity surveyors response

The majority of the respondent (44.4%) agreed that they will try to correct the unethical practice witnessed. 33.3% of the quantity surveyors responded that if they come across any unethical practice they will automatically report to the top management and the rest 22.3% responded they will take no measure instead they will keep silent. In general most of the professionals as it is illustrated in the figure 4.18 below agreed that they will correct any unethical practice witnessed.

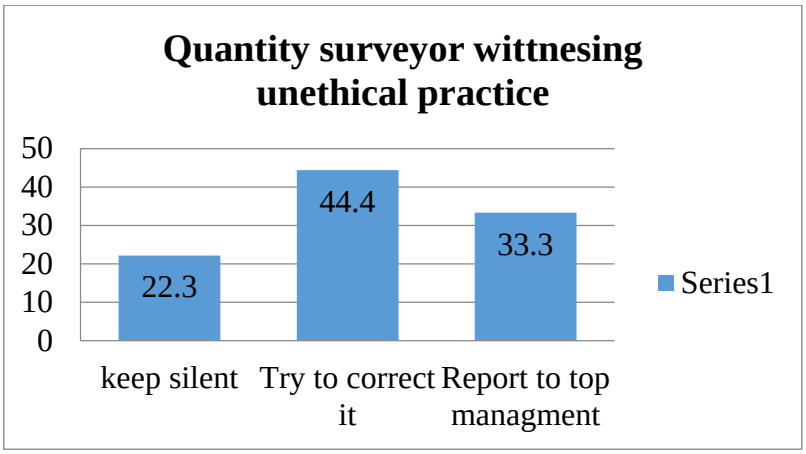


Figure 4.18 Quantity surveyors' witnessing unethical practice

4.3. The prevalent unethical practices in 20/80 condominium housing projects

4.3.1. Contractors perspective of prevalent unethical practices

As it is shown from the result of the analysis in table 4.6, the contractors responded that theft of materials has the highest mean score so it is found to be the most prevalent unethical practice in 20/80 condominium projects. But the interview result indicates that, usually theft is not committed by the professionals but more of, by the people living on the projects nearby. The 2nd most unethical practice as of the respondents' response is Illegal bidding practice. In the third order purchasing substandard materials in order to save money and negligence are the most prevalent in 20/80 condominium projects. Lack of adequate qualification and experience together with the lack of ensuring health and safety of the employees are found to be the 4th most prevalent unethical practice. Not paying the employees as per agreed is found to be on the 5th most unethical practice. The 6th most prevalent unethical practice is knowingly hiding defects and giving clients poor quality work. Bribery and forcing employees to do unethical conduct is the 7th most unethical practice in 20/80 condominium projects. As of the contractors response the 8th highest mean score for the unethical practices is fraud in the amount of items in the bill of quantities omitting or supplying items without the specification. The 9th most prevalent unethical practice is omitting or supplying items regardless of the specification. Doing personal business at working hours is the 10th prevalent unethical practice on 20/80 condominium projects. Fraud like illogical request for time extension is on the 11th rank and poor environmental practice is found to be the least prevalent practice in 20/80 condominium

housing projects. Most of these unethical practices were also identified by Vee and Skitmore (2003), Ehsan et al. (2009), Aftab Hameed Memon (2012) and B Mukumbwa & M Muya (2014) in the Australia, Pakistan, Malaysia and Zambia respectively.

Table 4.6 Descriptive statistics of contractors' unethical practice

Descriptive Statistics

Unethical practices	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Purchasing substandard materials to save money	53	3.4340	1.27866	1.00	5.00	3
Illegal bidding practices	53	3.5094	1.12014	1.00	5.00	2
Knowingly hiding defects and giving clients poor quality work	53	3.0943	0.96604	1.00	5.00	6
Omitting or supplying items regardless of the specification	53	2.9245	0.93745	1.00	5.00	9
Not paying employees as per agreed	53	3.2264	1.06774	1.00	5.00	5
Not ensuring health and safety of the employees	53	3.3208	1.18927	1.00	5.00	4
Poor environmental practice	53	2.8302	1.18866	1.00	5.00	12
Forcing employees to do unethical conduct	53	3.0566	1.19960	1.00	5.00	7
Fraud like illogical request for time extension	53	2.8491	1.08124	1.00	5.00	11
Fraud in the amount of items in the bill of quantities	53	2.9245	1.07147	1.00	5.00	8
Lack of qualification	53	3.3208	1.18927	1.00	5.00	4
Theft of materials	53	3.5472	1.18591	1.00	5.00	1
Bribery	53	3.0566	1.09921	1.00	5.00	7
Negligence	53	3.4340	1.13526	1.00	5.00	3
Doing personal business in working hours	53	2.8868	1.13782	1.00	5.00	10

4.3.2 Consultants perspective of prevalent unethical practices

According to the finding of B Mukumbwa & M Muya (2014) the most prevalent unethical practice was found to be lack of regular and quality monitoring and inspection, where as in this study as indicated in table 4.7 below, the most prevalent unethical practice in 20/80 condominium projects is found to be negligence among professionals. The 2nd most prevalent unethical practice as responded by the consultants is lack of loyalty and transparency to the client. Together with that, Bribery in kind and in cash takes place with different parties for one's own personal benefit is also on the 2nd rank. The bribery includes taking incentives from contractors to accept work of a poor standard or agree to approve variation claims. The 3rd most unethical practice that is prevalent is compromising quality for one's own personal need. The 4th one is found to be illegal bidding practices.

Lack of regular inspection and monitoring and lack of team working as a team with other professionals comes as the 5th most unethical practice in 20/80 condominium projects. The 6th most unethical practices as the mean score indicates is that there is lack of consultant's adequate skill and experience on the projects.

The other unethical practice on the 6th rank is rather than doing what they are supposed to on working hours, some of the professionals use the time for their own personal issues. The 7th unethical practice as indicated in the table is lack of protection of the environment and safety of the employees. This is found to be the least prevalent unethical practice in 20/80 condominium projects of Addis Ababa.

Most of these unethical practices were also identified by Vee and Skitmore (2003), Ehsan et al. (2009), Aftab Hameed Memon (2012) and B Mukumbwa & M Muya (2014) in Australia, Pakistan, Malaysia and Zambia respectively.

Table 4.7 Descriptive statistics of consultants' unethical practices

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Illegal bidding practices	9	3.4444	0.88192	2.00	5.00	4
Lack of consultant adequate skill and experience	9	3.1111	1.26930	1.00	5.00	6
Lack of team work skills	9	3.2222	0.97183	2.00	5.00	5
Lack of Regular inspection and monitoring	9	3.2222	0.66667	2.00	4.00	5
Lack of protection of the environment& safety of employees	9	3.0000	0.70711	2.00	4.00	7
Compromising quality for one's own personal need	9	3.5556	0.52705	3.00	4.00	3
Lack of loyalty and transparency to the client	9	3.6667	1.11803	2.00	5.00	2
Bribery in cash form, gift, favors	9	3.6667	0.50000	3.00	4.00	2
Negligence	9	4.1111	0.92796	2.00	5.00	1
Doing personal business in working hours	9	3.1111	0.92796	2.00	4.00	6

4.3.3 Quantity surveyors perspective of prevalent unethical practice

Most of the unethical conducts of the quantity surveyors identified are compatible with the study of O. J. Ameh and K. T. Odusami (2010) which was conducted in Nigeria. The survey finding which was carried out by the quantity surveyors revealed that over measurement of quantities of various trade items in bills of quantities is commonly observed. Others include covering up unexecuted item of works in the periodic valuation; over blowing cost of design variation; and remeasurement; inflation in figures of day work account and fluctuation in prices of item of work as well as bribery just to mention but a few.

As of this study, the quantity surveyors response revealed the first most unethical practice prevalent on 20/80 condominium projects which is fraud in the BOQ for financial purposes. To cut the money down the right amount of quantity for the construction is compromised.

The 2nd most unethical practice is if there is a condition where excess cost can be shared estimating high amount of cost is one big problem. Two unethical practices are ranked as the 3rd most prevalent. The first one is Negligence of the professionals when preparing BOQ and value estimation. The second one is taking a biased measure or value of the work that is constructed on site. The 4th most unethical practice is the professionals doing personal business at working hours instead of being committed to the job they are hired to accomplish. Bribery in form of cash, gift, and favor is found to be the 5th most prevalent unethical practices in 20/80 condominium projects. Lack of adequate skills and experience of the professionals is also on the 5th rank. The quantity surveyors response indicates that the 6th and the last unethical practice is found to be theft. Table 4.8 shows the descriptive statistics and the rankings of quantity surveyors unethical practice. Most of these unethical practices were also identified by Vee and Skitmore (2003), Ehsan et al. (2009), Aftab Hameed Memon (2012) and B Mukumbwa & M Muya (2014) in Australia, Pakistan, Malaysia and Zambia respectively.

Table 4.8 Descriptive statistics of quantity surveyors' unethical practices

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Fraud in the BOQ for financial purposes	9	3.4444	1.01379	2.00	5.00	1
High cost estimation to share excess cost	9	3.2222	0.83333	2.00	5.00	2
Lack of adequate skills and experience	9	2.7778	0.97183	1.00	4.00	5
Negligence on preparing BOQ and value estimation	9	3.1111	0.92796	2.00	4.00	3
Take biased measure/value of the work done on site	9	3.1111	0.78174	2.00	4.00	3
Bribery in form of cash, gift, favor	9	2.7778	0.97183	1.00	4.00	5
Doing personal business at working hours	9	2.8889	1.26930	1.00	4.00	4
Theft(in kind or in cash)	9	2.4444	1.58990	1.00	5.00	6

4.4. Factors contributing to unethical behaviors in 20/80 condominium projects

4.4.1. Contributing factors of the contractors

Table 4.9 shows the result from spss analysis. The mean, standard deviation and their scores according to their mean of each respondent to every question is shown in the table. As of the contractors response the first most contributing factor for the prevalence of unethical practices is poor management or leadership of 20/80 condominium projects. While staying on the projects to collect the data, the researcher has also witnessed there is a very poor management system and that most of the projects lack project managers and the contractor themselves are the ones managing the projects. This finding agrees with the study findings of AyatYousef Al-sweity(2013) which states that inefficient management is the critical factor for the prevalence of unethical practices. Another study made in Zambia also indicates that most respondents agreed with the statement that poor quality monitoring procedures contributed to unethical behavior during project execution and supervision (B Mukumbwaa and M Muyab, 2014). The system of the government with loose legal system that held professionals accountable and lack of sense of accountability of the professionals themselves comes as the 2nd most contributing factor. Poor evaluation of each stage is considered as the 3rd most contributing factor. Proper evaluation is important to make sure if the project is actually going on the scheduled time frame, the planned budget and the expected quality.

Absence of heavy punishment on those who committed unethical conducts is also another contributing factor on the third rank. Two factors ranked as the 4th most contributing factor for unethical practices. The first one is poor implementation of the code of ethics. The existence of code of ethics is meaningless unless the professionals take them seriously and act accordingly. The second one is unsatisfactory salary. Especially professionals working on the side of the contactors are not satisfied with how much they are paid.

Absence of code of ethics on the projects and lack of sufficient ethical education in schools is found to be on the 5th rank. The professionals not being thought enough about ethics and what it means by profession and professionalism is believed to bring problems when students graduate from schools and join the job world. It is hard for them to make ethical decisions, which makes the professionals personal benefit oriented. The study of B

Mukumbwa & M Muya (2014) also mentioned that lack of proper ethical guidelines on every stage of the construction makes the construction industry prone to unethical practices. The 6thand the least contributing factor was found to be personal beliefs and values of the professionals in 20/80 condominium projects of Addis Ababa.

Table 4.9 Descriptive statistics of contributing factor of the contractor

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Personal beliefs and values	53	3.2642	.92302	1.00	5.00	6
Absence of code of ethics	53	3.3962	1.06228	2.00	5.00	5
Poor implementation of code of ethics	53	3.4151	1.02721	1.00	5.00	4
Poor evaluation of each stage	53	3.4340	1.29362	1.00	5.00	3
No sense of accountability	53	3.5094	1.18683	1.00	5.00	2
Absence of heavy punishment	53	3.4340	1.29362	1.00	5.00	3
Lack of sufficient ethical education in schools	53	3.3962	1.06228	2.00	5.00	5
Unsatisfactory salary	53	3.4151	1.15082	1.00	5.00	4
Poor management	53	3.5472	1.16958	1.00	5.00	1
System of the government	53	3.5094	1.18683	2.00	5.00	2

4.4.2. Contributing factors of the Consultants

The first most contributing factor is found to be consistent with the study of O. J. Ameh and K. T. Odusami (2010) which identified low public sector salaries as the key factors that influence the prevalence of unethical practices. The consultants as indicated in table 4.10 responded that 1st most contributing factor for the prevalence of unethical practices is unsatisfactory salary and poor management. The respondents put two factors as the 2nd most contributing factor in 20/80 condominium projects. The first one is lack of sense of accountability and the second one is absence of heavy punishment. Since the professionals have nothing to fear about their consequences of their action, the prevalence of unethical

practices is increasing. There is no clear cutting line on who is doing what and who should do what and that created a gap so no one would be held accountable for what is actually done. The third one is found to be poor evaluation of every stage of the project. The other factor on the 3rd rank is the system of the government. The loose system of the government is also held accountable for the prevalence of unethical practices. As of the consultants' absence of code of ethics, even if there is poor implementation of the code of ethics and lack of sufficient ethical education in schools are the 4th most contributing factors for unethical practices to prevail in 20/80 condominium practice. The consultants claim that even if there is code of ethics on some projects, it is not actually implemented and it is less likely for the professionals to consider it and work accordingly as a guide. Personal beliefs and values are found to be on the 5th rank. This indicates that personal beliefs and values are the least contributing factor in relation to other factors as of the consultants. Most of the contributing factors are mentioned in Aftab Hameed Memon (2012), Ehsan N (2009) and J Masson (2009).

Table 4.10 Descriptive statistics of contributing factor of the consultant

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Personal beliefs and values	9	3.5556	0.72648	3.00	5.00	5
Absence of code of ethics	9	3.7778	0.66667	3.00	5.00	4
Poor implementation of code of ethics	9	3.7778	0.66667	3.00	5.00	4
Poor evaluation of each stage	9	3.8889	0.78174	3.00	5.00	3
No sense of accountability	9	4.0000	1.000	2.00	5.00	2
Absence of heavy punishment	9	4.0000	0.70711	3.00	5.00	2
Lack of sufficient ethical education in schools	9	3.7778	0.66667	3.00	5.00	4
Unsatisfactory salary	9	4.2222	0.83333	3.00	5.00	1
Poor management	9	4.2222	0.83333	3.00	5.00	1

System of the government	9	3.8889	0.78174	3.00	5.00	3

4.4.3. Contributing factor of Quantity surveyor

Table 4.11 shows the descriptive statistics and the rankings of the quantity surveyors. The respondents from the quantity surveyor side answered that the first most contributing factor for prevalent unethical practices is unsatisfactory salary and poor management. The finding is consistent with the study of O. J. Ameh and K. T. Odusami (2010) which identified low public sector salaries as the key factors that influence the prevalence of unethical practices. The 2nd most contributing factor is found to be lack of sense of accountability for the wrong doings. Absence of heavy punishment of the professionals is the 3rd contributing factor together with poor evaluation of each stage. Measures are not usually taken when someone is caught doing unethical practices, and this will make the professionals to get into an unethical act without fear. In addition if the progress of the projects whether they are going as planned or not is not checked properly, time cost and quality will probably be compromised by the end of the project.

Poor implementation of the code of ethics and the system of the government are ranked as the 4th most contributing factors. The existence of the code of ethics by itself is no guarantee for its implementation. The 5th most contributing factor is lack of sufficient ethical education in schools. The professionals are not well thought of the ethics engineering profession takes and most of them are more into making money out of it. The other contributing factor on the 5th rank is personal beliefs and values of the professional. If one has low moral values and believes and has a thought that it is okay to do the wrong things as long as they bring benefits to one ‘s own self, then it’s most likely he/she will engage themselves in an ethical act.

The last factor which is on the 6th rank is absence of the code of ethics on the projects. This indicates as of the quantity surveyors absence of code of ethics is the least contributing factor in relation to other factors listed.

Table 4.11 Descriptive statistics of contributing factor of quantity surveyors

	N	Mean	Std. Deviation	Minimum	Maximum	Rank
Personal beliefs and values	9	3.1111	0.92796	2.00	4.00	5
Absence of code of ethics	9	2.8889	0.92796	2.00	4.00	6
Poor implementation of code of ethics	9	3.2222	1.20185	1.00	5.00	4
Poor evaluation of each stage	9	3.3333	1.32288	1.00	5.00	3
No sense of accountability	9	3.6667	0.86603	2.00	5.00	2
Absence of heavy punishment	9	3.3333	1.32288	1.00	5.00	3
Lack of sufficient ethical education in schools	9	3.1111	1.05409	2.00	5.00	5
Unsatisfactory salary	9	4.7778	0.44096	4.00	5.00	1
Poor management	9	3.7778	1.09291	2.00	5.00	1
System of the government	9	3.2222	1.39443	1.00	5.00	4

4.4.4. Correlations test among the professionals on the ranking of factors contributing to unethical practices

The purposes of this correlation analysis was to determine if there is any relationship with in the ranking order of factors contributing to unethical practices among the three groups of professionals. The rank order correlation test among the three groups of respondents was checked using Spearman rank correlation coefficients, to see if there was a difference in ranking between the three groups of respondents; contractors, consultants and quantity surveyors.

The purpose of a hypothesis test is to avoid being deceived by chance occurrences; the tests also helped to evaluate whether consensus of opinions exist among respondents. In order to decide whether to accept or reject the null hypothesis, which is no relationship exists between the response of the groups of professionals, the level of significance 95% (P = 0.05)

was used. This allowed to state whether or not there is a relationship between respondents response.

The spearman's correlation coefficient was computed using spss version 24 and the result is tabulated as shown below in Table 4.12. The correlational analysis was done to test whether there is correlation between these factors. Different studies show that the correlation coefficient of two variable greater than 0.8 is generally described as strong, whereas correlation less than 0.5 generally described as weak. On the other side, the P-value is less than the specified significance level, $P<0.05$ or $P<0.01$ which indicates there is a strong significant relationship between, but the P-value greater than $P>0.05$ or $P>0.01$weak significant relationship between categorized variables. When $P < 0.01$ or $P<0.05$ level means there is 1% or 5% from in a 100% chance of there no relationship in variables, but the difference is P-value less than 0.01 is stronger than P-value less than0.05.

As it is shown in table 4.12, the summarized spearman correlation coefficient indicates that there is strong correlation between the three groups (contractors, consultants and quantity surveyor) on the ranking order of the 10 factors contributing to unethical practices in 20/80 condominium projects. Therefore the null hypothesis which is no significant relation between the respondents is rejected i.e. the null hypothesis is rejected and the alternative hypothesis shall be accepted.

From Table 4.12 it can be concluded that there is strong correlation between the attitudes of the respondents and hence the null hypothesis should be rejected and the alternative hypothesis shall be accepted. This means that contractors, consultants and quantity surveyors, the professionals involved in the survey have the same kind of perception about the factors contributing to unethical practices.

Table 4.12 Correlation coefficient table

			contractor	Consultant	Quantity surveyor
Spearman's rho	contractor	Correlation Coefficient	1.000	.749*	.714*
		Sig. (2-tailed)	.	.013	.020
		N	10	10	10
	Consultant	Correlation Coefficient	.749*	1.000	.925**
		Sig. (2-tailed)	.013	.	.000
		N	10	10	10
	Quantity surveyor	Correlation Coefficient	.714*	.925**	1.000
		Sig. (2-tailed)	.020	.000	.
		N	10	10	10

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

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

4.4.5. Summary of factors contributing to unethical practices of the professionals

The professionals agreed that the highest factor for the prevalence of unethical practices on 20/80 condominium projects is unsatisfactory salary. Study findings of B Mukumbwa & M Muya (2014) indicated that high poverty and low income levels of professionals is one factor that makes the construction industry prone to unethical practices, so it supports the finding of this study. Poor management of the project is considered as the 2nd most contributing factor. The study of Ephrem Girma Sinesilassie (2017) also stated that project manager's ignorance and lack of knowledge are found to be damaging to the schedule performance of Ethiopian public construction project (Ephrem Girma Sinesilassie, 2017).

The professionals result indicates lack of sense of accountability is the 3rd most important factor that is contributing for the prevalence of unethical practices. The 4thfactor for the professionals to act unethically is the absence of heavy punishment on those who committed

unethical practices. The poor evaluation of the projects at every stage is found to be the 5th important factor that is contributing for the prevalence of the unethical practice. The 6th factor as of the result is the system of the government.

Poor implementation of the code of ethics is the 7th contributing factor of the professionals. Professional's lack of sufficient ethical education in schools is the 8th factor. Absence of code of ethics and personal belief of the professionals seems to have the least contribution being the 9th and 10th factors respectively. The table below shows the summary of the contributing factors for unethical practices.

Table 4.13 Summary of factors contributing to unethical practices of the professionals

Contributing factors	Contractors mean score	Consultants mean score	Quantity surveyors mean score	Average mean score	Rank
Personal beliefs and values	3.2642	3.5556	3.1111	3.3103	10
Absence of code of ethics	3.3962	3.7778	2.8889	3.3543	9
Poor implementation of code of ethics	3.4151	3.7778	3.2222	3.4717	7
Poor evaluation of each stage	3.4340	3.8889	3.3333	3.552	5
No sense of accountability	3.5094	4.0000	3.6667	3.725	3
Absence of heavy punishment	3.4340	4.0000	3.3333	3.5891	4
Lack of sufficient ethical education in schools	3.3962	3.7778	3.1111	3.428	8
Unsatisfactory salary	3.4151	4.2222	4.7778	4.138	1
Poor management	3.5472	4.2222	3.7778	3.849	2
System of the government	3.5094	3.8889	3.2222	3.5401	6

4.5. Effects of poor professional Ethics on 20/80 condominium projects

4.5.1. Delay as an effect

This study supports the findings of B Mukumbwa & M Muyathe (2014) which was conducted in Zambia that indicates, unethical practices in the construction industry have caused delays on the construction process. The same holds true for this survey finding. As it is shown in table 4.14, 81.1% of the contractors agreed that the practice of poor professional ethics is causing time overrun in 20/80 condominium projects. 88.9% of the consultants also believed there is delay in the projects due to unethical practices. The third group of professionals also agreed that unethical practices are causing delay and amazingly all of the quantity surveyors supported the existence of delay. From this result, it is clear that most of the professionals have the same thought and experience that poor professional ethics is causing delay on the projects of 20/80 condominium houses.

Table 4.14 Percentage of poor professional ethics causing delay

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyor	Percentage of quantity surveyor
Valid	yes	43	81.1	8	88.9	9	100
	no	10	18.9	1	11.1	0	0
	Total	53	100.0	9	100	9	100

4.5.2. Cost overrun as an effect

As it is clearly shown in table 4.15, more than half of the professionals have agreed that the existence of poor professional ethics is causing cost overruns in the projects of 20/80 condominium housing. 88.1% of the contractor respondents responded yes and 88.9% of the consultants also agreed. More than half of the quantity surveyor respondents (88.9%) also agreed that unethical practices are causing unethical practices. This study finding is compatible with CIOB (2006), O. J. Ameh and K.T.Odusami (2009) studies which both state that unethical practices have a negative effect on the cost of the projects.

Table 4.15 Percentage of poor professional ethics increasing cost

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyor	Percentage of quantity surveyor
Valid	yes	45	88.1	8	88.9	8	88.9
	no	8	26.4	1	11.1	1	11.1
	Total	53	100.0	9	100	9	100

4.5.3. Site accidents as an effect

More than half of the contractor respondents as it is indicated in table 4.16, 69.8% agreed that unethical practices on the site are causing site accident. 77.8% of the consultants and 77.8% of the quantity surveyors also accepted that not acting professionally in the project sites is causing site accidents. This indicates most of the professionals believe that unethical practices are causing accidents on the site. Ivan Esparragoza (2018) mentioned that due to poor ethical decisions and different unethical practices in the construction industry accidents that cost human life are caused.

Table 4.16 Percentage of poor professional ethics causing site accidents

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyor	Percentage of quantity surveyor
Valid	yes	37	69.8	7	77.8	7	77.8
	no	16	30.2	2	22.2	2	22.2
	Total	53	100.0	9	100	9	100

4.5.4. Bad image of the profession as an effect

According to Sakyi I (2015), due to high prevalence of unethical practices in the construction industry a popular image is given as being dangerous, macho and opportunistic. The result in table 4.17 also shows that, 81.1% of the contactors believe that the current trend of professional ethics on 20/80 condominium projects is contributing for the bad reputation of the construction industry and construction professionals. 88.9% of the quantity surveyors responded that it is for sure portraying bad image and 88.9% of the consultants

agreed that it does too. This indicates that most of the professionals think that lack of professional ethics is portraying bad image on the professionals and 20/80 condominium projects of Addis Ababa city. This might affect the construction industry in general by portraying bad image about the job and the people doing the job which will create mistrust between the professionals and the public that deserves to get service from the professionals.

Table 4.17 Percentage of poor professional ethics causing bad image

		Frequency of contractors	Percentage of contractors	Frequency of consultants	Percentage of consultants	Frequency of quantity surveyor	Percentage of quantity surveyor
Valid	yes	43	81.1	8	88.9	8	88.9
	no	10	18.9	1	11.1	1	0
	Total	53	100.0	9	100	9	100

4.5.5. Environmental Problems as an effect

Table 4.18 indicates that, more than half of the contractor respondents(62.3%) believed poor professional ethics is causing environmental problems . 66.7% consultants and 66.7% of the quantity surveyors also agreed on the existence of environmental problems that are caused due to poor professional ethics. This result is a good indication that most of the professionals agree on the adverse effects of unethical practices causing on the environment. According to Arsido (2019), code of environmental ethics should be prepared for the professionals and they should be more concerned about the environment which they are part of it themselves than their personal needs.

Table 4.18 Percentage of poor professional ethics causing environmental problems

		Frequency of contractors	Percent of contractors	Frequency of consultants	Percent of consultants	Frequency of quantity surveyors	Percent of quantity surveyors
Valid	yes	33	62.3	6	66.7	6	66.7
	no	20	37.7	3	33.3	3	33.3
	Total	53	100.0	9	100	9	100

4.5.6 Quality as an effect

As most of the literatures indicate quality is ignored to maximize the profit or to compensate the delayed time. Besterfield et al. (2003) suggested that quality depends upon the ethical behavior of the professionals, whereby quality and ethics are highly interrelated and share a common foundation, which doing right things right and it is a proven way to reduce costs, improve competitiveness, and create customer satisfaction. It is also proved in their study that low ethical standards among construction professional will lead to quality problems.

According to Hamzah Abdul-Rahmana et al (2013) findings, the majority of the respondents strongly agree that unethical acts were causing quality related problem in the construction industry. This indicates Hamzah Abdul-Rahmana et al (2013) findings are compatible with this study finding. This study finding clearly shows that, professionals felt there is low quality of construction and lack of professional ethics is one contributing factor.

In this study, the Likert scale to classify the level of quality of 20/80 condominium projects of Addis Ababa city used is, mean scores from 1 to 1.90 represents very low, from 1.81 until 2.60 represents low, from 2.61 until 3.40 represents medium, from 3.41 until 4.20 represents high and from 4.21 until 5.00 represents very high (Hamzah Abdul-Rahman, 2013).

1. Contractors Response

As it is indicated in table 4.19 the mean score to evaluate the quality of the projects is 2.4528 which indicate a range of low level. The contractors also believed lack of ethics is highly affecting the quality and production efficiency of 20/80 condominium projects, since the mean score is 3.5472 which makes it in a range of high level.

Table 4.19 Descriptive statistics of contractors' response on quality as an effect

	N	Minimum	Maximum	Mean	Std. Deviation
evaluate quality of the projects	53	1.00	4.00	2.4528	0.82196
lack of ethics affecting quality and production efficiency	53	2.00	5.00	3.5472	0.69520
Valid N (listwise)	53				

2. Consultants response

As it is indicated in table 4.20 the mean score to evaluate the quality of the projects is 2.5467 which is at a range of low level. The consultants also believed lack of ethics is highly affecting the quality and production efficiency of 20/80 condominium projects, since the mean score is 3.7778 which makes it in a range of high level.

Table 4.20 Descriptive statistics of consultants' response on quality as an effect

	N	Minimum	Maximum	Mean	Std. Deviation
evaluate quality of the projects	9	2.00	3.00	2.5467	0.50000
lack of ethics affecting quality and production efficiency	9	3.00	5.00	3.7778	0.66667
Valid N (list wise)	9				

3. Quantity surveyor Response

As it is indicated in table 4.21 the mean score to evaluate the quality of the projects is 2.5556 which are found at a range of low level. The quantity surveyors also believed lack of ethics is highly affecting the quality and production efficiency of 20/80 condominium projects, since the mean score is 3.5556 which makes it in a range of high level.

Table 4.21 Descriptive statistics of Quantity surveyors' response on quality as an effect

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
evaluate quality of the projects	9	1.00	3.00	2.5556	0.72648
lack of ethics affecting quality and production efficiency	9	3.00	4.00	3.5556	0.52705
Valid N (listwise)	9				

As the result indicates all the three professionals have evaluated that there is low quality construction in 20/80 condominium projects and the agreement of professional ethics in affecting the quality and production efficiency of the projects is found to be high.

4.5.7. Summary on the effect of professional ethics on 20/80 condominium projects

As the result shows in table 4.22 the most common problem where the professionals agreed as an effect is portraying bad image of the profession and the construction industry. So it is ranked as the 1st effect on 20/80 condominium projects. The 2nd effect of poor professional ethics is it is causing delay on the project and the projects are running way behind schedule. Cost overrun is taken as the 3rd effect by most professionals, whereas site accidents are taken as the 4th effect. The least ranked as of the professional is environmental problems. This indicates that environmental problems are not that serious problem that is caused due to lack of ethical practices.

As it is indicated in table 4.19, table 4.20, table 4.21, the professionals have labeled the 20/80 condominium projects as low quality and have agreed poor professional ethics is affecting the quality of the projects and highly affecting the production efficiency of the 20/80 condominium projects.

Table 4.22 Summary on the effect of poor professional ethics

Effects	Percentage of contractors	Percentage of consultants	Percentage of quantity surveyors	Mean percentage	Rank
Delay	81.10	88.90	100.00	89.36	2
Cost overrun	88.10	88.90	88.90	83.8	3
Site accidents	69.80	77.80	77.80	75.13	4
Bad image on the profession	81.10	88.90	88.90	93.7	1
Environmental problems	62.30	66.70	66.70	65.2	5

4.5.8. Correlations of the rank on the effect of poor professional ethics on 20/80 condominium projects

The rank correlation as it is shown in table 4.23 below, there is a very strong correlation among the professionals response. This is a good indication that most of the professionals have agreed that poor professional ethics is causing an adverse effect on 20/80 condominium projects by portraying bad image on the profession, causing delay, cost overrun, site accidents and environmental problems as a least effect.

Table 4.23 Rank correlation coefficient on the effects of poor professional ethics

		Contractor Rank	Consultant Rank	Quantity Surveyor Rank
Contractor Rank	Pearson Correlation	1	0.965**	0.833*
	Sig. (2-tailed)		0.002	0.040
	N	5	5	5
Consultant Rank	Pearson Correlation	0.965**	1	0.939**
	Sig. (2-tailed)	0.002		0.006
	N	5	5	5
Quantity surveyor Rank	Pearson Correlation	0.833*	0.939**	1
	Sig. (2-tailed)	0.040	0.006	
	N	5	5	5

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

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

4.6. Ways of improving professional ethics in 20/80 condominium projects

1. Contractors response

As it is clearly indicated in figure 4.19, the contractors responded the first important way to improve professional ethics is by giving ethical awareness and trainings regularly for the professionals so they can be ethical professionals. It is also suggested in Paul Bowen et al (2007) study that schools should give more emphasis on moral values so the students can

develop the culture of ethics early on. The second way as of the result is found to be the presence of good managers that could serve as a role model in the projects. The third way of improving professional ethics is by regularly monitoring and evaluating the projects in every aspect i.e. cost, Schedule, quality and so on. The fourth way mentioned as a way is making the code of ethics accessible to every professional. Imposing heavier penalties in those who commit unethical practices is found to be the fifth and the last way to improve professional ethics. This study finding agreed with the studies of Paul Bowen et al (2007), Alotaibi (2017) and Ehsan N (2009) findings.

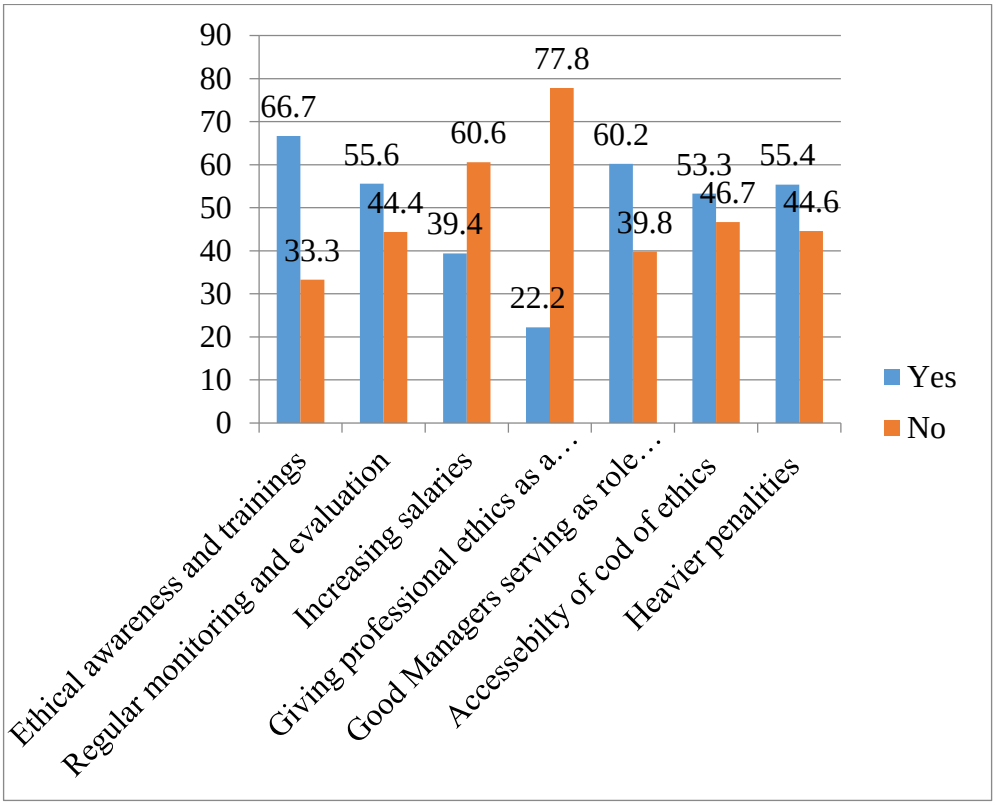


Figure 4.19 Contractors' way of improving professional ethics

2. Consultants

As it is clearly indicated in the figure 4.20, the consultants responded the first important way to improve professional ethics is by giving ethical awareness and trainings regularly for the professionals so they can be ethical professionals. The second way as of the result is found to be the presence of good managers that could serve as a role model in the projects and increasing salaries of the professionals. The third way of improving professional ethics is by

regularly monitoring and evaluating the projects in every aspect i.e. cost, Schedule, quality and so on. The fourth way mentioned as a way is to impose heavier penalties in those who commit unethical practices is found to be the fifth and the last way to improve professional ethics. The fifth and the last way responded by the consultants is making the code of ethics accessible to every professional.

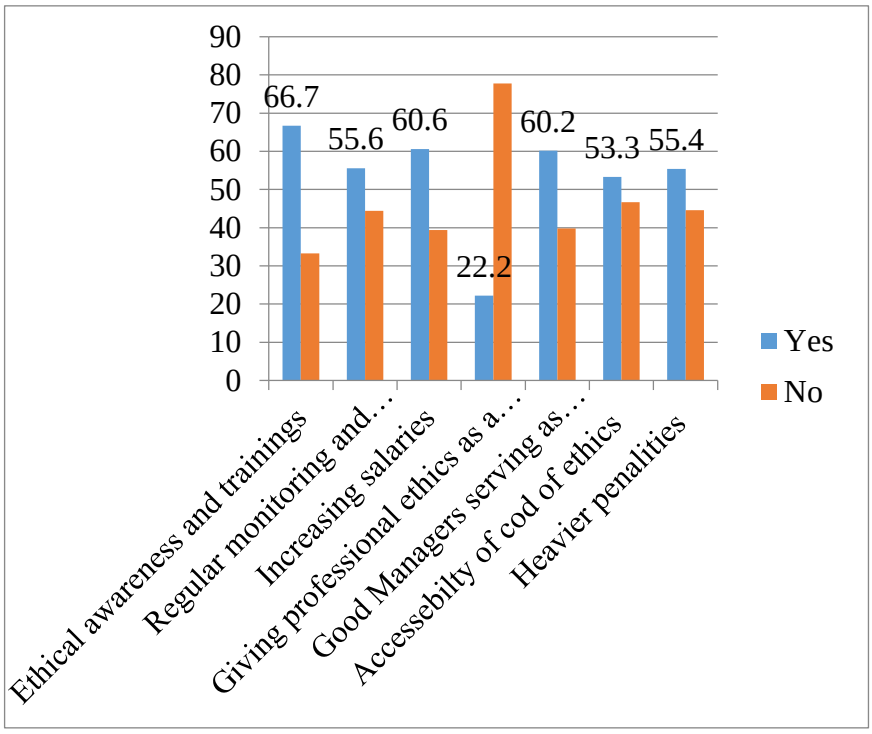


Figure 4.20 Consultants' way of improving professional ethics

3. Quantity surveyor

William F. Maloney (1983) study found that, there is lack of empirical research in the area where how motivation and performance of professionals in the construction industry is related. Thus, no valid theoretical framework exists to explain and predict worker motivation and performance in the construction industry. But on this study the result of the study indicates that the quantity surveyors believe increasing salaries and related motivations are very important to improve the unethical practices that are prevalent in the 20/80 condominium projects.

The result of the quantity surveyors in figure 5.15 show that, the first important way to improve professional ethics is by increasing salaries of the professionals. The second way as of the result is found to be giving ethical awareness and trainings regularly for the

professionals so they can be ethical professionals and the presence of good managers that could serve as a role model in the projects. The third way of improving professional ethics is by regularly monitoring and evaluating the projects in every aspect i.e. cost, Schedule, quality and so on. The fourth way mentioned as a way is to impose heavier penalties in those who commit unethical practices is found to be the fifth and the last way to improve professional ethics. The fifth and the last way responded by the quantity surveyors is giving professional ethics as a course in universities and college so the student can have high professional and moral values when working on the real world.

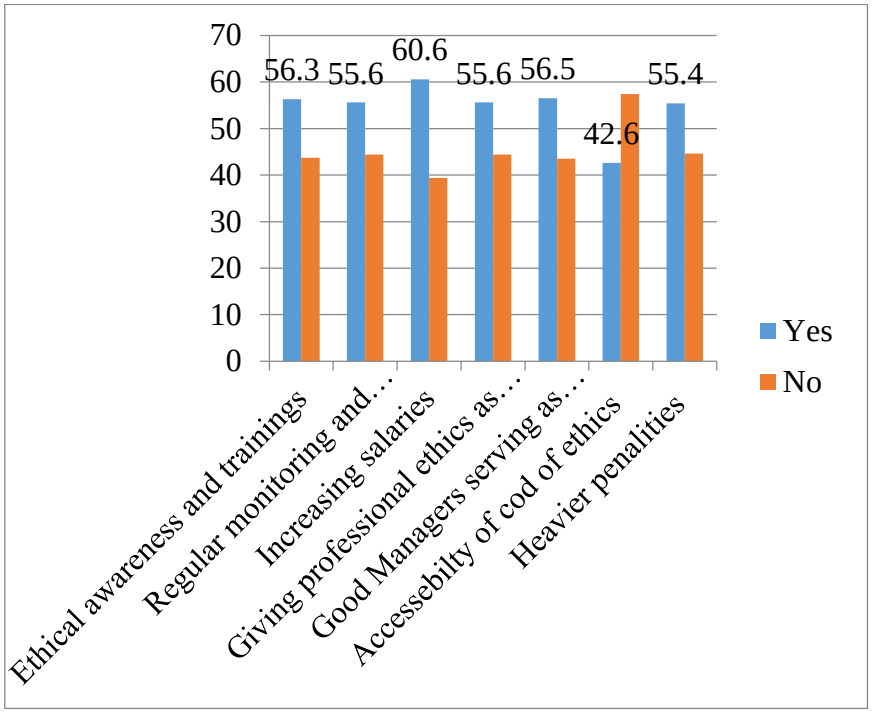


Figure 4.21 Quantity surveyors' ways of improving professional ethics

4.6.1. Summary on ways to improve professional ethics

The study findings of Hamzah Abdul-Rahman (2013), suggested different ways to boost professional ethics among construction professionals to achieve the success of construction projects. The ways suggested supports the findings of this study which are imposing heavier penalties on those who are found to act unethically, attending ethics-training programmes and having regular ethics awareness workshops. As it is indicated in Table 4.24, most professionals agreed that the first important way to improve professional practices on 20/80 condominium projects is giving ethical awareness and trainings on professional ethics and

moral values. The 2nd most important way is found to be good managers serving as a role model in the projects. Regular monitoring and evaluation of each stage of the construction is considered the 3rd important way to improve unethical practices. Imposing heavier penalties to those who commit unethical practices is taken as the 4th important way to improve unethical practices. As of the professionals the 5th way of improving professional practice on 20/80 condominium projects is increasing the salary of the professionals. Accessibility of the code of ethics is taken as the 6th way and the least effective way of improving professional ethics as of the professionals is, giving professional ethics as a course in the universities and colleges before the students go out to the real world and start a job. This finding is different from the study made by Sunil K. Sinha (2007), which suggests giving ethics as a course is very crucial in improving professional ethics. If not the professionals might consider it as not that important issue to be concerned with. It also helps to create a link between the ethical/social issues and technical contents of the profession. Knowing the technical skills is just one part of becoming a professional. Being first-class professionals involves commitment to a higher level of concern for those who will be affected by the products of civil engineering (Sunil K. Sinha, 2007).

Table 4.24 Summary on ways to improve professional ethics

	Percentage of contactors	Percentage of consultants	Percentage of quantity surveyors	Average	Rank
Ethical awareness and trainings	66.7	66.7	56.3	63.2	1
Regular monitoring and evaluation	55.6	55.6	55.6	55.6	3
Increasing salaries	39.4	60.6	60.6	53.5	5
Giving professional ethics as a course	22.2	22.2	22.2	22.2	7
Good managers serving as a role model	60.2	60.2	56.5	58.97	2
Accessibility of code of ethics	53.3	53.3	42.6	49.7	6
Heavier penalties	55.4	55.4	55.4	55.4	4

4.6.2. Rank correlation of ways to improve professional ethics

The rank correlation shown in the table 4.25 below indicates that there is very strong correlation (p= 0.007 and r=.893**) in rank between quantity surveyors and consultants. The correlation of the contractor with both quantity surveyors and consultants indicate that there is weak relationship and this mainly caused due to the difference in response in taking salary increment as a way of improving professional ethics. Both quantity surveyors and consultants responded that increasing salary is very important in improving professional ethics whereas contractors think it is not that important. This might be an indication that even if the contractors are not that concerned about financial issues; the results indicate that they still engage themselves in unethical practices. So, further study is needed if lack of money is the real problem behind committing unethical acts. This huge difference between their mean scores has created weaker correlation of contractors with both consultants and quantity surveyors.

Table 4.25 Rank Correlations among professionals on ways to improve professional ethics

		Contractor rank	Consultant rank	Quantity surveyor rank
Contractor rank	Pearson Correlation	1	0.643	0.429
	Sig. (2-tailed)		0.119	0.337
	N	7	7	7
Consultant rank	Pearson Correlation	0.643	1	0.893**
	Sig. (2-tailed)	0.119		0.007
	N	7	7	7
Quantity surveyor rank	Pearson Correlation	0.429	0.893**	1
	Sig. (2-tailed)	0.337	0.007	
	N	7	7	7

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

4.7. Interview Result and Analysis

Semi-structured interviews were carried out to enhance and validate questionnaire results as part of data triangulation. Compared to the quantitative questionnaire survey, the qualitative expert interview provides a direct, more in-depth interaction with the respondents. The interview targeted 9 professionals which were, 3 contractors, 3 consultant and 3 quantity surveyors. Interview participants were drawn from those who participated in filling the questionnaire for the reason of triangulating the data and to collect reliable and firsthand information. It takes 30-40 minute to interview each of the respondents. The interviews had some questions which were not included in the questionnaire in order to obtain more information specific to the practice of professional ethics in 20/80 condominium projects. The interviewees' were sampled using purposive sampling in order to obtain data from selected parties that were seen as best to provide the needed information. The selection of an individual was based on the experience in the construction industry. Those who have more than 5 years of experience were selected. The purpose was to obtain in-depth understanding about the practice of ethics and the factors contributing for unethical practices. Out of the targeted 12 respondents only 9 participated in the interviews. The interviewees were asked to state their position in their organization, the number of years of experience and their level of education. The personal profiles of the interviewees are presented in the table 4.26.

Table 4.26 Profiles of interviewees

Interviewee Code	Position	Education level	Years of experience	Organization
I1	Site Engineer	BSc	15	contractor
I2	Office Engineer	BSc	10	contractor
I3	Site Engineer	BSc	8	Contractor
I4	Resident Engineer	MSc	10	Consultant
I5	Resident Engineer	BSc	9	Consultant
I6	Office Engineer	BSc	7	Consultant
I7	Quantity surveyor	BSc	5	Quantity surveyor
I8	Quantity surveyor	BSc	9	Quantity Surveyor
I9	Quantity surveyor	BSc	5	Quantity surveyor

4.7.1. Overall Level of professional ethics on 20/80 condominium projects

Interviewees' were requested to respond on how they see the level of professional ethics and the level of commitment of the professionals in working properly. How prevalent unethical practices are in 20/80 condominium projects is also asked. Their responses have helped to know and analyze the current trend of construction in 20/80 condominium projects. The professionals have labeled the existence of professional ethics as very low. Most of the professionals lack commitment to their jobs and the respondents also agreed on very few of the professionals takes professional ethics into consideration but most of them doesn't even know what it is and doesn't even care to know.

4.7.2. The prevalent unethical practices and Factors contributing

The result of this study is parallel with a foreign research that was conducted by Hamzah Abdul-Rahman (2013), which revealed that the majority of survey respondents and all the interviewees agreed that the construction industry is spoiled by unethical acts among the construction professionals. Meanwhile, in this study all the interview respondents were on the view that, there are lots of unethical practices in 20/80 condominium projects.

1. **Contractor interviewees**

The contractor interviewees have agreed that there are a lot of unethical practices on 20/80 condominium projects. Among the many unethical practices prevalent the most common practice that attention has to be given to is only discussed. The interviewees have agreed that corruption is a very common practice in the condominium projects. As it is mentioned in the study of Hamzah Abdul-Rahmana (2013), this is especially prevalent in public projects where contractors and suppliers with the lowest tender bid are often awarded with tender. In such cases different kinds of corruptions are common unethical conducts noted. The term corruption in that study includes bribery, fraud, theft, negligence and improper tendering practices. Corrupted or bribed personnel will usually bypass basic inspections and work procedures required during construction, leading to sub-standard quality works that will affect the whole aspect of the construction. So the study of Hamzah Abdul-Rahmana(2013) supports the findings of this study.

Thefts of materials used for construction are one of the unethical practices that are prevalent in the site. Cements, rib bars, aggregates and finishing materials will be stolen from the site

due to lack of regular evaluation and monitoring in the projects. Mostly theft is committed not by the professionals but the residents that are found in the projects nearby. There are also professionals who engage themselves in the act of theft.

Purchasing substandard materials is also another unethical practice that is commonly seen in 20/80 condominium projects. Back in the days the government was the one responsible to deliver materials especially the finishing materials but for the sake of speeding up the flow of the work, this responsibility is given to the contractors. Some of the contractors working together with the consultants are using this advantage for their own benefits. Bribery usually takes place in this kind of situations and lot more. Substandard materials are purchased to save money and this is one of the reasons where quality is compromised. Lack of safety of the employees is another unethical practice that is very common on 20/80 condominium projects. Safety is considered as a luxury in the site. Lack of qualification of contractors is another common unethical practice to be taken seriously. Negligence to do things ethically is also another common unethical practice.

The contractors have also discussed the contributing factors behind all these prevalent unethical practices on 20/80 condominium projects. The major factor as of the contractors is the system of the bidding practice. Since the least competitive bidder is the one to be awarded in the project, the contractors submit lower price of materials and will complete the cost at the minimum possible cost. Then after winning the project the actual work will take higher cost, so to compensate that and to increase the benefit, contractors will get into different unethical practices.

Poor management system is also another contributing factor. Mostly in 20/80 condominium projects the contractor is the project manager himself. The absence of good project managers is one of the biggest contributing factors in 20/80 condominium projects. There is usually no one who manages how the construction is going on so the professional ethics and scientific work is left alone and the construction will proceed with the past trends.

The system of the government is another contributing factor. Since the contractors are given the opportunity to purchase on their own especially the finishing materials it has a very loose system in checking what kind of materials, if it is really as of the standard or not. Poor

evaluation of every stage is another factor discussed. The contactors have mentioned that it is less likely that the work done is evaluated as per the time schedule, cost and the required quality, instead everyone is rushing to complete the projects and get in to another and the how is usually missing. The lack of sense of accountability and heavy punishment on those who does wrong are also mentioned as an important factor. This is giving the professionals the freedom of acting unethically as long as they are getting personal benefit out of it.

The professionals have also agreed that the unethical practices in 20/80 condominium projects are causing adverse effect in the quality, time and cost overrun. So to improve this, the interviewees suggested that putting minimum acceptable price and seriously considering that might help to improve the prevalent unethical practices and from compromising quality.

2. Consultant interviewees

As of the consultant there are different kinds of unethical practices in 20/80 condominium projects. The major ones are as mentioned by the interviewees' negligence, bribery, compromising quality for personal needs by knowingly using substandard materials. By collaborating with the contractors purchasing materials not with appropriate bidding system rather with their own business men and share the benefits. Doing personal business on working hours are also the most common unethical practice.

The factors the interviewees thought and experienced while working in 20/80 condominium for years is mainly due to unsatisfactory salary. The interviewees said unsatisfactory salary is causing the professional to be negligent and lack motivation to do their job ethically. The other important factor is poor management. They have agreed that there is a very loose management system which the management itself exercises many unethical practices and this is causing an adverse effect in every aspect of the housing projects. Lack of heavier penalty and lack of sense of accountability are another important factors discussed. The professionals haven't witnessed any taken measure on the professionals who commit unethical practice and this initiate the other professionals to engage themselves with no fear of accountability.

The consultant interviewees also agreed that poor professional ethics is causing adverse effect in reputation of the profession and the industry, delay, quality and cost. To improve professional ethics all the interviewees suggested that increasing salary will be a positive

pushing factor for the professionals to do their job ethically. They all agreed that the negligence, the lack of motivation and engaging oneself into such kind of unethical practices is caused mainly due to low salary.

3. Quantity surveyor interviewees

The quantity surveyor interviewees have discussed the most common unethical practices in 20/80 condominium projects and the factors contributing to that. The most common unethical practice mention was while preparing the BOQ, much fraud will be done in decreasing or increasing the items so they can benefit either of the parties and share the excess cost. There is also high level of negligence in preparing the BOQ and also to estimate the value of the amount of work that has been executed. Bribery is also the most common unethical practice in 20/80 condominium projects.

The factors the interviewees thought and experienced while working in 20/80 condominium for years is mainly due to unsatisfactory salary. The interviewees said unsatisfactory salary is causing the professional to be negligent and lack motivation to do their job ethically. The other important factor is poor management. They have agreed that there is a very loose management system which the management itself exercises many unethical practices and this is causing an adverse effect in every aspect of the housing projects. Lack of heavier penalty and lack of sense of accountability are another important factors discussed. The professionals haven't witnessed any taken measure on the professionals who commit unethical practice and this initiate the other professionals to engage themselves with no fear of accountability.

The interviewees also agreed that poor professional ethics is negatively effecting the reputation of the profession and the industry, causing delay, quality problems and cost overrun. To improve professional ethics all the interviewees suggested that increasing salary will be a positive pushing factor for the professionals to do their job ethically. They all agreed that the negligence, the lack of motivation and engaging oneself into such kind of unethical practices is caused mainly due to low salary. Giving regular trainings about professional ethics, moral and values is also suggested as another important way to reduce unethical practice. Teaching the professionals what it takes to be an actual professional and to empower them with a strong gut to say no for unethical practices.

4.7.3. Existence of code of ethics

Since engineering is a very important profession, the professionals are expected to act to the highest standards of honesty and integrity. Engineering profession has a direct and critical impact on the quality of life for all people. Due to that, the services provided by the professionals require honesty, impartiality, fairness and equity, and must be committed in protecting the public health, safety, and welfare. Professionals must get along with the standard of professionals behavior that adhere to the highest principles of ethical conduct (Sunil K. Sinha, 2007).

All of the interviewees from contractor, consultant and quantity surveyor side have explained that most of the professionals do not actually care to know about the code of ethics. Even if it exists, it is mostly off no use practically. The professionals usually works like how it is used to be done, following the past trend.

The interviews have discussed the reason behind the poor implementation of the code of ethics is weak accountability system. There is no party that obligates the professional's to implement the code of ethics and make sure if works are being done taking that into consideration. The other reason mentioned by the interviewees is its accessibility. Some of the employees don't even know if such kind of things exists.

4.7.4. Effects of poor professional ethics in 20/80 condominium projects

All interviews' of the contractor side, the consultant and the quantity surveyor side have agreed that poor professional ethics is causing an adverse effect on 20/80 condominium projects. They have all agreed that the reputation of civil engineering profession is getting into question due to that. It is considered as the most unethical and where corruption is the most prevalent industry. The other most common problem is delay of the projects. As the interviews' discussed until today they haven't witnessed a single project that is completed as per the schedule. Being years behind the schedule is very common and considered as a normal thing. In relation with the delay cost overrun is the most common effect. The cost that was estimated for the project to come to completion three or four years before might not be completed until now. Taking inflation in consideration there will be a huge amount of difference in the cost of the projects. The interviews' also mentioned that both the professionals and the government basically focus on completing the projects and less attention is given to the how. Quality is compromised in the rush to complete the projects, in

negligence, for the sake of personal benefits and from lack of the deep knowledge the costs of low quality construction.

4.7.5. Ways of improving professional ethics

All the interviewees have agreed that ethical awareness and trainings are the most important in reducing the prevalence of unethical practices. The professionals as the interviewees stated does not have the core knowledge of professional ethics and does not understand the costs of poor professional ethics as a professional and in broader sense the cost it has a country. Since the construction industry plays a major role in the country's economy, killing the construction industry is directly or indirectly killing the country's economy, it is killing a nation. So awareness and trainings has to be given regularly for the professionals to change their values and think about sustainable and inclusive growth. They have also discussed about having good managers that serve as role model. As of the interviewees, a good manager makes a good employee. So having managers who are not involved in such kind of unethical practices can be an effective way of improving unethical practices. This finding is found to be compatible with Hamzah Abdul-Rahman (2013) that suggests, to improve professional ethics in the construction industry the project managers should be take formal trainings on professional ethics and exercise it themselves so they can enforce it on all other professionals. Managers serving as role models among the employees will influence the whole company because all staff will look up to them in day to day practice and it is most likely that a good leader will have a good employee.

Interviewees agreed regular evaluation of the stages of the projects according to the time schedule, the planned budget, if it is really being constructed as per the specification and the required quality has to be done. Imposing heavy penalties on professionals who commit unethical practice is also an effective way to reduce unethical practices in the projects. The consultant and quantity surveyor interviewees have strongly discussed that most of the negligence and lack of commitment comes from unsatisfactory salary. So as it is supported by William F. Maloney (1983), poverty might be a pushing factor for professionals to act unethically and motivations like increasing salaries is considered as a fuel in the engine where it creates less moral dilemmas to be entertained.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Based on the results and discussion from the previous chapters, the following major conclusions have been derived and summarized which indicates many construction related issues in 20/80 condominium projects are directly or indirectly related with professional ethics.

1. There exist significant areas of concern in 20/80 condominium projects as most of the ethical standards among construction professionals are compromised and there is medium to low level of professional ethics on the projects. The study finding has also identified the most prevalent contractor related unethical practices in 20/80 condominium projects to be theft, illegal bidding practices, purchasing substandard materials to save money, negligence and lack of qualification. Whereas consultant related unethical practices were found to be negligence, bribery and lack of loyalty and transparency to the client and compromising quality for one's own personal need. The third groups of professionals in the study, the quantity surveyors, were found to be fraud in the BOQ for financial purposes, high cost estimation to share excess cost, negligence on preparing BOQ and value estimation and take biased measure/value of the work done on site.
2. The study finding revealed the contributing factors for poor professional ethics on 20/80 condominium projects was found to be unsatisfactory salary, Poor management, no sense of accountability, absence of heavy punishment and poor evaluation of each stage. The findings of the research indicated that unethical practices are causing negative effect in terms of quality, duration, and cost of construction. The effect on the environment and the bad reputation of the professionals and the industry is another adverse effect which is caused due to poor professional ethics.
3. The study concludes the best ways to enhance professionalism is through ethical awareness and training for the professional regularly so they can have in-depth understanding what it means by an ethical professional and to be able to foresee the adverse effect it might cause in the long run, through good managers serving as role

models for the staff, regular monitoring and evaluation in every stage of construction, imposing heavier punishments and increasing salaries of the professionals. In general if every professional in the construction sector plays their part well, professionalism will be enhanced, thus eliminating construction related problems will be an easy task to accomplish.

5.2.Recommendations

Based on the results of the study and the different experiences pointed out by the respondents, these recommendations are made for the stakeholders, the ministry of construction and the government to improve professional ethics and reduce the effects of the critical factors that lead to unethical conducts in 20/80 condominium projects of Addis Ababa city.

1. Conducting regular monitoring and evaluation systems at the different stages of the project to make sure the projects are going according to the planned time, the planned budget and as per the required quality. Appointing independent monitoring and evaluating bodies also increase the effectiveness so that early intervention will take place before the problems get out of hand.
2. Ensuring heavier punishments for unethical practices at different stages of the construction will help the professionals to take lesson and stay out of it.
3. Promoting ethical awareness and giving regular trainings regarding the values of ethical behavior for the overall good of the professionals, the profession, the construction industries and the country at large on the site and at different forums and media platform.
4. Increasing the benefits for the employees by increasing their salaries or doing some kind of motivation so the professionals will have better work spirit and might reduce the negligence and the temptation to act unethically.

5.3.Suggestions for Future Work

- ✓ It is highly recommended that further studies and investigations are needed to take place on the area of professional ethics both in private and public sectors of the construction industry.
- ✓ It is advisable to further study professional ethics taking the client into consideration.

- ✓ Further study should also be conducted on the effects of professional ethics by taking the public satisfaction and the actual effects it is causing on the projects into consideration to know the depth of the problems.
- ✓ It is also recommended if professional ethics is studied taking every stages of construction into consideration.

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APPENDIX

APPENDIX A: QUESTIONNAIRE

Dear respondent,

This questionnaire is prepared to obtain necessary data for the partial fulfillment of an MSc thesis in Construction Technology and Management at Addis Ababa University. The topic of the research is **STUDY ON THE PRACTICE OF PROFFESSIONAL ETHICS AND ITS EFFECT ON 20/80 CONDOMINIUM PROJECTS OF ADDIS ABABA CITY.**

The objective of the study is assessing the practice of professional ethics and the effect it is causing on 20/80 condominium projects of Addis Ababa city. It is believed that your participation in this research will contribute in achieving the objectives of the research. Thus, the quality of your response towards the question items determines the quality of the research results. Therefore, please answer the questions as thoroughly, objectively and honestly as possible according to the instructions contained in the body of the questionnaire.

Lastly, I want to assure you that all information provided in this survey is only used for academic purposes and all information gathered will be kept strictly confidential.

Thank You in Advance for your cooperation!!

Regards,

Hanna Mulugeta

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Mobile: 0910442996

Questioner of the contractor

PART 1	**GENERAL INFORMATION**			
Position of respondents	Contractor ☐			
Sex	Female ☐		Male ☐	
Age	25-35 ☐	35-45 ☐	45-55 ☐	55 and above ☐
Years of experience	Less than 5 years ☐	5-10 years ☐	11-20 years ☐	More than 20 years ☐
Qualification	Doctor(PhD) ☐	Masters ☐	Degree ☐	Other ☐

PART 2	**LEVEL OF EXISTENCE**				
	Very low	Low	Medium	High	Very high
A. What is your opinion about the overall level of professionals ethics on 20/80 condominium projects					
A1. The overall level of professional's ethical conduct in 20/80 condominium projects.					
A2. Professional's loyalty to their jobs.					
A3. Professional's knowledge about professional ethics.					
A4. Professional's temptation to act unethically					
A5. Professionals serving the public interest more than his/her own interest or the client's interest.					
A6. Professional's commitment to do their job in ethical manner.					
7. Do you have code of ethics in your project? Yes ☐ No ☐					

8. If yes, Have you ever read it? Yes ☐ No ☐

9. Are the projects being implemented according to the code of ethics?

Yes ☐ No ☐

10. Do you think it is difficult to apply the code of ethics?

Yes ☐ No ☐

11. If the answer of the above question is Yes, Because of

- ☐ Strict rules.
- ☐ It is not accessible to every professional
- ☐ The past trend of the construction industry
- ☐ It is difficult to understand and interpret the code of ethics
- ☐ Weak accountability system
- ☐ Others

PART 3. What do you think about the prevalence of the following actions in 20/80 condominium projects

Types of unethical practices	Very low	Low	Medium	High	Very high
B 1. Purchasing substandard materials to save money.					
B 2. Illegal Bidding Practices					
B 3. knowingly hiding defects and giving clients a poor quality work					
B 4. Omitting items, or supplying products that do not conform to the project specifications.					
B 5. Not paying employees as per their agreed salaries at the agreed time.					
B 6. Not ensuring health and safety of the employees					
B 7. Poor environmental practices.					
B8. Putting pressure on their employees to do unethical conduct.					

B9. Fraud (illogical request for time extensions or compromise on quality)					
B10. Fraud in determining the amount of items in the bill of quantities for financial purposes					
B 11.Inadequate qualification/ experience/training					
B12. Theft of materials					
B 13. Bribery in form of cash inducement, gift, favors, trips					
B 14. Negligence					
B 15. Doing personal business in working hours of the day.					

PART 4	**Level of contribution**				
Factors contributing to unethical practices in 20/80 condominium projects	Very low	Low	Medium	High	Very high
C1. Personal beliefs and values					
C2. Absence of code of ethics on the projects					
C3. Poor implementation of the code of ethics					
C4. Poor evaluation of each stages in construction					
C5. No sense of accountability					
C6. Absence of heavy punishment					
C7. Lack of sufficient ethical education in schools					
C8. Unsatisfactory salary					
C9. Poor leadership/management					
C10. System of the government					

PART 5	**Effect of professional ethics on 20/80 condominium projects**

1. Lack of professional ethics is causing delay on the projects?

Yes ☐ No ☐

2. Unethical practices are increasing the costs of the projects?

Yes ☐ No ☐

3. Poor professional ethics is causing high rate of site accidents?

Yes ☐ No ☐

4. Poor professional ethics is portraying bad image on the construction profession and industry?

Yes ☐ No ☐

5. Environmental problems are caused due to lack of professional ethics in the projects?

Yes ☐ No ☐

6. How do you evaluate the quality of construction industry in 20/80 projects?

Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐

7. How do you think that unethical practices affect the quality and production efficiency in these projects?

Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐

PART 6	**Ways to improve ethical behavior**

1. How do you think we can improve ethical issues in 20/80 condominium projects?

- ☐ Ethical awareness and trainings on personal value developments.
- ☐ Regular monitoring and evaluation of the project.
- ☐ Increasing salary
- ☐ Giving professional ethics as a course in colleges and universities
- ☐ Good project Managers serving as role models.
- ☐ Setting standard of code ethics and making accessible to every professional.
- ☐ Heavier penalties.

Consultants' questioner

PART 1	**GENERAL INFORMATION**			
Position of respondent	Consultant ☐			
Sex	Female ☐		Male ☐	
Age	25-35 ☐	35-45 ☐	45-55 ☐	55 and above ☐
Years of experience	Less than 5 years ☐	5-10 years ☐	11-20 years ☐	More than 20 years ☐
Qualification	Doctor(PhD) ☐	Masters ☐	Degree ☐	other ☐

PART 2	**LEVEL OF EXISTENCE**				
	Very low	Low	Medium	High	Very high
A. What is your opinion about the overall level of professional ethics on 20/80 condominium projects					
A1. The overall level of professional's ethical conduct in 20/80 condominium projects.					
A2. Professionals' loyalty to their jobs.					
A3. Professional's knowledge about professional ethics.					
A4. Professional's temptation to act unethically					
A5. Professionals serving the public interest more than his/her own interest or the client's interest.					
A6. Professional's commitment to do their job in ethical manner.					

7. Do you have code of ethics in your project?

Yes ☐ No ☐

8. If yes, Have you ever read it? Yes ☐ No ☐

9. Are the projects being implemented according to the code of ethics?

Yes ☐ No ☐

10. Do you think it is difficult to apply the code of ethics?

Yes ☐ No ☐

11. If the answer of the above question is Yes, Because of

- ☐ Strict rules.
- ☐ It is not accessible to every professional
- ☐ The past trend of the construction industry
- ☐ It is difficult to understand and interpret the code of ethics
- ☐ Weak accountability system
- ☐ Others

PART 3. What do you think about the prevalence of the following practices in 20/80 condominium projects					
Types of unethical practices	Very low	Low	Medium	High	Very high
B 1. Illegal Bidding Practices					
B 2.Lack of adequate skill and experience.					
B 3. Lack of team work					
B 4. Lack of regular inspection and monitoring					
B 5.Lack of protection of the environment and safety of the employees					
B6. Compromising quality for one's own personal needs					
B7. Lack of loyalty and transparency to the client about the project					
B 8. Bribery in form of cash inducement, gift, favors, trips					
B 9. Negligence in controlling quality , lack of supervision, lack of safety ethics,					
B 10. Doing personal business in working hours of the day.					

PART 4	**Level of contribution**				
Factors contributing to unethical practices in 20/80 condominium projects	Very low	Low	Medium	High	Very high
C1. Personal beliefs and values					
C2. Absence of code of ethics on the projects					
C3. Poor implementation of the code of ethics					

C4. Poor evaluation of each stages in construction					
C5. No sense of accountability					
C6. Absence of heavy punishment					
C7. Lack of sufficient ethical education in schools					
C8. Unsatisfactory salary					
C9. Poor leadership/management					
C10. System of the government					

PART 5	**Effect of professional ethics on 20/80 condominium projects**
1. Lack of professional ethics is causing delay on the projects. Yes ☐ No ☐	
2. Unethical practices are increasing the costs of the projects. Yes ☐ No ☐	
3. Poor professional ethics is causing high rate of site accidents. Yes ☐ No ☐	
4. Lack of professional ethics is portraying bad image of the construction profession and industry. Yes ☐ No ☐	
5. Environmental problems are caused due to lack of professional ethics in the projects? Yes ☐ No ☐	
6. How do you evaluate the quality of construction industry in 20/80 projects? Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐	
7. How do you think that unethical practices affect the quality and production efficiency in these projects? Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐	

PART 6	Ways to improve professional ethics in the 20/80 condominium projects

A. How do you think we can improve ethical issues in 20/80 condominium projects?

- ☐ Ethical awareness and trainings on personal value developments.
- ☐ Regular monitoring and evaluation of the project.
- ☐ Increasing salaries
- ☐ Giving professional ethics as a course in colleges and universities
- ☐ Good project Managers serving as role models.
- ☐ Setting standard of code ethics and making accessible to every professional.
- ☐ Heavier penalties.

Quantity surveyors questioner

PART 1	GENERAL INFORMATION			
Position of respondent	Quantity surveyor ☐			
Sex	Female ☐		Male ☐	
Age	25-35 ☐	35-45 ☐	45-55 ☐	55 and above ☐
Years of experience	Less than 5 years ☐	5-10 years ☐	11-20 years ☐	More than 20 years ☐
Qualification	Doctor(PhD) ☐	Masters ☐	Degree ☐	other ☐

PART 2	**LEVEL OF EXISTENCE**				
	Very low	Low	Medium	High	Very high
A. What is your opinion about overall level of professional ethics on 20/80 condominium projects					
A1. The overall level of professional's ethical conduct in 20/80 condominium projects.					
A2. Professionals' loyalty to their jobs.					
A3. Professionals' knowledge about professional ethics.					
A4. Professional's temptation to act unethically					
A5. Professionals serving the public interest more than his/her own interest or the client's interest.					
A6. Professionals' commitment to do their job in ethical manner.					

7. Do you have code of ethics in your Organization?

Yes ☐ No ☐

8. If yes, Have you ever read it? Yes ☐ No ☐

9. Are the projects being implemented according to the code of ethics?

Yes ☐ No ☐

10. Do you think it is difficult to apply the code of ethics?

Yes ☐ No ☐

11. If the answer of the above question is Yes, Because of

☐ Strict rules.

☐ It is not accessible to every professional

☐ The past trend of the construction industry

☐ It is difficult to understand and interpret the code of ethics

☐ Weak accountability system ☐ Others

18. What will you do if you witness unethical behavior/practice?

Keep silent ☐ Try to correct it ☐ Report to top management ☐ Report to judiciary bodies ☐

PART 3. What do you think about the prevalence of the following unethical practices in 20/80 condominium projects

Types of unethical practices	Very low	Low	Medium	High	Very high
B 1. Fraud in determining the amount of items in the bill of quantities for financial purposes.					
B 2. High cost estimation of the project thinking about sharing the excess cost later					
B 3. Lack of adequate skills and experience					
B 4.Bribery					
B 5. Negligence on preparing bill of quantity and value estimation					
B 6. Serving the employer more than the public for one's own personal benefit					
B 7. Take biased measure and value of the work done on site					
B 8. Bribery in form of cash inducement, gift, favors, trips					
B 9. Doing personal business in working hours of the day.					
B10. Theft(in kind or in cash)					

PART 4	**Level of contribution**				
Factors contributing to unethical practices in 20/80 condominium projects	Very low	Low	Medium	High	Very high
C1. Personal beliefs and values					
C2. Absence of code of ethics on the projects					
C3. Poor implementation of the code of ethics					
C4. Poor evaluation of each stages in construction					
C5. No sense of accountability					
C6. Absence of heavy punishment					
C7. Lack of sufficient ethical education in schools					
C8. Unsatisfactory salary					
C9. Poor leadership/management					
C10. System of the government					

PART 5	**Effect of professional ethics on 20/80 condominium projects**
1. Lack of professional ethics is causing delay on the projects? Yes ☐ No ☐	
2. Unethical practices are increasing the costs of the projects? Yes ☐ No ☐	
3. Poor professional ethics is causing high rate of site accidents? Yes ☐ No ☐	
4. Poor professional ethics is portraying bad image on the construction profession and industry? Yes ☐ No ☐	

5. Poor professional ethics is causing users dissatisfaction?

Yes ☐ No ☐

6. Environmental problems are caused due to lack of professional ethics in the projects?

Yes ☐ No ☐

7. How do you evaluate the quality of construction industry in 20/80 projects?

Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐

8. How do you think that unethical practices affect the quality and production efficiency in these projects?

Very low ☐ Low ☐ Medium ☐ High ☐ Very high ☐

PART 6	**Ways to improve professional ethics**

A. How do you think professional ethics can be improved in 20/80 condominium projects?

- ☐ Ethical awareness and trainings on personal value developments.
- ☐ Regular monitoring and evaluation of the project.
- ☐ Increasing salaries
- ☐ Giving professional ethics as a course in colleges and universities
- ☐ Good project Managers serving as role models.
- ☐ Setting standard of code ethics and making accessible to every professional.
- ☐ Heavier penalties.

APPENDIX B: INTERVIEW

Dear Interviewee,

I am working on a research titled "STUDY ON THE PRACTICE OF PROFFESSIONAL ETHICS AND ITS EFFECT ON 20/80 CONDOMINIUM PROJECTS OF ADDIS ABABA CITY" for the partial fulfillment of the requirements for the degree of Master of Science (MSc) in Construction Technology and Management at Addis Ababa University, Addis Ababa Institute of Technology. The main objective of this research is to identify the practice of professional ethics and its effect on 20/80 condominium projects of Addis Ababa city. To meet this research objective, it is necessary to have the response of contractors, consultants, and quantity surveyors currently working on the scheme project and hence you are one of the professional recruited to respond this interview. In fact, I have conducted questionnaire survey on the project sites but also need to gather detailed information about the ethical practice and its effect to enhance the research findings through interview. I confirm that your response will be kept confidential and will be used only for the purpose of this research.

With Regards, Hanna Mulugeta

Advisor: - Abebe Dinku (Prof. Ing;-Dr.)

Thank you very much for your cooperation!

Part 1. Background information about the interviewee

PART 1	**GENERAL INFORMATION**			
Position of respondents	Consultant ☐		Contractor ☐	Quantity surveyor ☐
Sex	Female ☐		Male ☐	
Age	25-35 ☐	35-45 ☐	45-55 ☐	55 and above ☐
Years of experience	Less than 5 years ☐	5-10 years ☐	11-20 years ☐	More than 20 years ☐
Qualification	Doctor(PhD) ☐	Masters ☐	Degree ☐	other ☐

Part 2

1. Do you think there is professional ethics in 20/80 condominium projects? Do the professionals really know what it is and work according to the code of ethics?
2. Which unethical practice do you think is the most prevalent in 20/80 condominium projects?
3. What do you think are the factors for poor unethical practice in 20/80 condominium projects?
4. Do you think poor professional ethics is affecting the projects negatively? How?
5. What do think are the best possible solutions to reduce unethical practices?

APPENDIX C

Number of Subjects (data set)	Level of significance for one-tailed test			
	0.05	0.025	0.01	0.005
	Level of significance for two-tailed test			
	0.1	0.05	0.02	0.01
5	0.9	1	1	-
6	0.829	0.886	0.943	1
7	0.714	0.786	0.893	0.929
8	0.643	0.738	0.833	0.881
9	0.6	0.683	0.783	0.833
10	0.564	0.648	0.746	0.794
12	0.506	0.591	0.712	0.777
14	0.456	0.544	0.645	0.715
16	0.425	0.506	0.601	0.665
18	0.399	0.475	0.564	0.625
20	0.377	0.45	0.534	0.591
22	0.359	0.428	0.508	0.562
24	0.343	0.409	0.485	0.537
26	0.329	0.392	0.465	0.515
28	0.317	0.377	0.448	0.496
30	0.306	0.364	0.432	0.478

Note: When there is no exact number of subjects, use the next lowest number
Source: (Naoum, 1998)