A Student Perspective of Ethics in the Zambian Construction Industry

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Abstract

The importance of ethical considerations in the construction industry is acknowledged. This is particularly the case that the industry plays a significant part in a nation's development. The Zambian construction industry has seen an increase in activity due, in part, to massive infrastructure development programs adopted by successive governments, increase in foreign direct investment and housing development. The Zambian construction industry, like any other, is not immune to unethical behaviour. This study investigated students' perception of the prevalence of unethical practices in the Zambian construction industry. A review of literature demonstrated that a number of contextual factors including location can influence the perception of unethical practices. A focus on Zambia was therefore considered necessary.

One hundred and twenty one students took part in a questionnaire survey to examine their perception of the extent to which unethical practices were prevalent in the Zambian construction industry.

The findings suggest that students perceived bribery/corruption and political /societal influences as the two most common unethical practices, while the least prevalent unethical practices were perceived to be alcohol/drug abuse and workplace violence. The findings are largely consistent with previous studies investigating the ethical perception of professionals in the Zambian construction industry. In addition, the findings suggests that when year of study and program of study is taken into consideration, the differences in perception of unethical practices, is evident for these demographic groups.

This study provided an added dimension to the understanding of ethical issues in the Zambian construction industry as it was the first of its kind involving students' perceptions. This paper therefore contributes to the list of countries where similar studies have been undertaken.

Introduction

The consideration of ethics is increasingly seen as an important one. This is particularly the case with the construction industry. It is argued that the industry is one that is prone to unethical practices such as bribery and corruption (Sohail and Cavill, 2008). The impact of unethical behaviour can have significant consequences such as overpriced construction projects, poor quality, abandoned projects, collapsed buildings, lost opportunities to local communities etc.

The Zambian construction industry, like many other, developed or developing, is not immune to unethical practices. The industry has seen a significant increase in construction output over the years due in part to increased public sector investment in infrastructure and foreign direct investment. Considering that the industry is prone to unethical practices, efforts to combat such

practices should be stepped up. Studies by Mukumbwa and Muya (2013) and Sichombo et al (2009) show the prevalence of unethical practices in the Zambian construction industry. It is therefore important that the industry should be seen to be proactive in putting in place measures that can help enhance ethical conduct.

A review of literature suggests that Governments, professional institutions, individual companies and education establishments have a significant part to play in fostering an ethical environment. While there are many practices that have been put forward to help enhance the ethical culture of organisations and professionals, ethics training is seen as an important potential early intervention in the quest for professional ethical behaviour. Ethics education can be seen to be a significant foundation stone for professionals as they embark on their career (Adnan et al, 2012).

This study considers that education and training is a contributor to fostering an ethical culture and therefore universities can play a significant role. This is particularly the case as universities are at the forefront of training students who are the decision makers of tomorrow. Aydemir and Demirci (2008, p165) argue that *"universities have considerable influence on students' ethical values and they must assume responsibility towards improving the students' ethical values actively"*. There has been various context for research on ethics for students undertaking built environment related courses. One of the strands of research has focused on the ethical perception of students in different countries. This study follows the same path and seeks to examine students' perception of the prevalence of unethical practices in the Zambian construction Industry.

Having set out the context of the research, the remaining part of the paper proceeds as follows: literature review; methodology; results and discussion; and conclusions and recommendations.

Ethics and the construction industry

There is no one standard definition of ethics. Generally, however, ethics implies consideration of what is right and wrong and also touches on issues of morality. Crane and Matten (2016) suggest that ethics is concerned with the study of morality and the application of reason to highlight specific rules and principles that determine right and wrong for any given situation. Flach (2010, p. 8) defined ethics as *"a tendency or disposition, induced by our habits, to have appropriate feelings",* while Mason (2009, p. 2) defines ethics as the *"degree of trustworthiness and integrity of how companies conduct business".* Similalry Adnan (2012) viewed ethics as a system of moral principals, which impact on peoples judgement of actions, whether such actions are wrong or right.

Raqus and Matic (2015) provides a distinction between professional ethics and business ethics and suggest that business ethics is part of the professional ethical environment as one is exercising ethical conduct within a business environment. They defined business ethics as "a form of professional ethics that focuses on ethical principles and moral or ethical issues that arise in a business environment" and that "it applies to all aspects of business conduct and it is also pertinent to the conduct of individuals in an organisation and business organisation as a whole" (Raqus and Matic (2015, p89). Consideration of business ethics is an important one for the construction industry in light of the ethical scandals many construction companies have found themselves to be embroiled in. The Office of Fair Trading's (OFT, 2009) investigation

on collusion activities by major construction companies is an example, providing the need for consideration of business ethics (The OFT, 2009).

The ethical behaviour of construction professionals has been a subject of many studies. It is particularly important considering the potential impact of unethical behaviour on projects, stakeholders and society in general. The construction industry is a significant contributor to economic performance and development of any nation. However, it is seen as one of the major areas where unethical practices, in particular, corruption, fraud and collusion are rife. For example, The Transparency International (2008) bribery payers' survey, ranked construction as the most prone to corruption other industries.

The construction industry is seen as one which is particularly prone to unethical practices and that unethical practices can happen at any stage in the construction life cycle (Sohail and Cavill, 2006; Oyewobi *et al*, 2011; CIOB, 2013). This is seen as one of the weaknesses in developing strategies to combat unethical practices in that opportunities to engage in such, span across many stages of the construction process, and concerns multiple stakeholders (Patterson and Chaudhuri, 2007).

There has been various reasons put forward to explain why the industry is prone to unethical behaviour. Some suggests that the competitive nature of the industry with tight profit margins is a breeding ground for unethical behaviour (Abdul Rahman 2013). Kang and Shaharay (2013) suggests that the relative large number of stakeholders on projects can result in an increase in differences in ethical standards. As such, this can result in ethical conflicts. Zhang et al (2017) investigated the causes of business to government corruption and concluded that flawed regulation systems, negative encouragement, lack of professional ethics and codes of conduct, illegitimate gains, and lack of competitive and equitable bidding practices as some of the reasons for corrupt practices between private sector companies and government officials in China. Mukumbwa and Muya (2013) identified political influence on public works, bureaucratic nature of procurement, competitive nature of projects and legal loopholes in the tendering process as some of the main reasons why the Zambian construction industry is prone to unethical behaviour. Flawed regulatory systems can also be a contributor to unethical practices (Le et al (2014). Aigbavboa et al (2016) suggested a number of factors that can contribute to unethical behaviour including greed, favouritism, political influence, monopoly of bigger firms over smaller ones and pressure to meet unrealistic targets.

The seriousness of the need for ethical behaviour is demonstrated in literature. It is generally acknowledged that such practices can have both financial and human costs (Brown and Loosemore, 2015). The World Bank (2006), suggests that, while unethical practices are a problem world-wide, the effects of such practices are felt more in developing countries in terms of opportunity costs and lost economic growth. Unethical practices have been shown to result in inflated project costs (Kenny, 2007), collapsed buildings (Mathege, 2012), abandoned works (Mathege, 2012); poor quality (Halis et al, 2007; Abdul Rahman et al., 2013); and use of substandard materials (Sichombo et al, 2009 see World Bank report). Arain (2008) linked causes of insolvency with unethical practices. Aigavboa et al (2016) concluded that unethical behaviour could lead to dissatisfied clients, poor workmanship, poor quality of projects and loss of public trust. Inuwa et al (2014) attributed the increased requirement for maintenance works, time and cost overruns as some of the main consequences of unethical practices in the Nigerian construction industry. The cost implications of unethical practices to construction industry companies can also be astronomical. For example, the CIOB (2013) study found that

10% of respondents, to a questionnaire survey, estimated the annual costs of corruption/fraud to their organisations to be more than £1 million.

The impact of unethical practices, such as corruption goes beyond the confines of the project and immediate stakeholders. Kenny (2007, p1) for example, suggests that *"corruption that leads to poor quality projects and poor project selection and insufficient maintenance can significantly reduce the economic return on investment and carry significant human costs in terms of injury and deaths"*. Kenny (2007, p5) goes on to argue that *"corruption is one of the "factors behind the pressure to overspend on new construction rather than maintenance of existing infrastructure"* … "*even though maintenance of existing infrastructure stock is key to preserving the economic value of infrastructure*" (page 5).

Unethical behaviour can manifests in different forms. However, corruption, fraud and collusion are particularly rife in the construction industry (World Bank 2010). It is not surprising therefore to see that corruption, collusion and bribery are ethical issues which have received significant attention in literature. It is evident that such unethical practices are a problem for both developed and developing countries. A World Bank report (2010) provides examples from around the world of unethical behaviour in particular, corruption, fraud and collusion, in road projects. In developed countries such as the UK (CIOB 2013) and Australia (Brown and Loosemore, 2015), evidence suggest that such unethical practices are not uncommon. The CIOB (2013) study, for example, found that forty nine percent of respondents believed corruption was common within the UK construction industry. Evidence of such unethical behaviour is also found in many developing countries including, South Africa (Bowen et al, 2007), Nigeria (Adeyemo and Amade, 2016; Ameh and Odusami, 2010), Zambia (Mukumbwa and Muya (2013), Kenya (Mathenge, 2012) Malawi (Shakantu and Chiocha, 2009) and many others.

A survey of literature demonstrates that generally the extent of the prevalence of unethical practices differs from country to country. Adnan et al (2012) conducted a study on contractors' perception of unethical behaviour in the Malaysian construction industry. They concluded that the most common unethical behaviour experienced by the respondents were cover pricing, bid cutting, poor documentation, late and short payments, subcontractors' lack of safety ethics and unfair treatment of contractors in tender/final account negotiations. Others included competitors' overstatement of capacity and qualifications to secure work, competitors' falsification of experience and qualifications and bureaucratic, government policy. Bowen et al (2007) examined ethical behaviour in the South African construction Industry. They grouped such behaviour as collusive tendering, bribery, professional negligence, fraudulent behaviour, dishonesty and unfairness behaviour as the main forms of unethical practices in the construction industry. Similarly Aigbavboa et al (2016) found that the most prevalent unethical practices in the South African construction industry were bribery and fraud, falsification of experience, illegal award of contracts and collusive tendering. Other unethical behaviour noted in the industry included: exposure of confidential information, and extortion of kickbacks by client and government officials. Legae and Adeyemi (2017), in their study of the Botswana construction industry identified bribery in form of cash inducement, gifts, favours and kickbacks as some of the most common forms of corruption in the industry.

Vee and Skitmore (2003) conducted a study on professional ethics in the Australian construction industry and found that at least all the respondents had experienced unethical behaviour in various forms including unfair conduct, negligence, conflict of interest, collusion, fraud, confidentiality and proprietary breach, bribery and violation of environmental ethics.

Brown and Loosemore (2015) also conducted a study examining behavioural factors influencing corruption in the Australian construction industry. They noted kickbacks, fraud and bribery as the most common corrupt actions experienced in the industry. Mukumbwa and Muya (2014) acknowledged that unethical practices, in the construction industry occur in all phases of the construction process. They identified issues such as political interference, bribery and corruption, design malpractices, poor quality monitoring and delays in decision making as some of the key unethical practices in the Zambian construction industry. Sinchombo and Muya's (2013) work on the Zambian construction industry and concluded that issues such as contractor fraudulent qualifications, manipulation of prequalification, disclosure of lowest quotation, use of poor quality materials, increased variation claims are some of the prevalent unethical practices in the Zambian construction industry. It is therefore important that ethical conduct has to continue as a subject of conversation in both industry and academia as such a neglect can be costly to the government, companies and individuals in terms of both reputation and financial damage (Fatoki and Marembo, 2012).

Role of education in shaping ethical behaviour

The importance of ethics training is reflected in the many studies that have been conducted to examine, for example, student perception, inclusion of ethics in course curriculum and investigation of the relationship between ethics training and ethical conduct. Mukumbwa and Muya (2013), in their study on ethics in the Zambian construction industry identified that ethics training and education was weak and that this was one of the contributing factors to the continued high levels of unethical practices. It is therefore argued that it is important that students, who are the construction professionals of tomorrow need to have some ethical training if the trend is to be checked. The role of education in shaping ethical behaviour has been debated. Cole and Smith (1995) for example suggest that direct ethics training through ethics classes does not significantly impact on students ethical sensitivity; Similarly Manbugh (2003) suggests that while ethics training can help increase students' ethical sensitivity, it does not seem to impact on the actual ethical behaviour. Ooi and Tan (2015) examined the effectiveness of an ethics workshop in influencing ethical conduct and concluded that while knowledge of ethics did not significantly improve, evidence suggested that the workshop provided a motivation for participants to act ethically.

Atesh et al (2016) examined the impact of ethics education on engineering students' ethical perceptions. The study involved focus group discussions with two groups. One group did not attend an ethics training while the other did. Their findings suggested that there was no significant variations among the participants in these two groups regarding ethical decision making. However they noted a difference in the decision making process of two groups- with the 'trained' ground being more consistent than the 'untrained' group. i.e. that students in the 'untrained' group had a tendency to make many changes in their ethical positions before making a final judgement. Similarly, Riter (2006) conducted a study on the impact of ethics training on ethical behaviour with a sample drawn from two business classes. One class was exposed to ethics training while the other did not. The study showed that there were no significant differences between the two groups. However it was noted that gender was a significant differentiating factor as women in the group that attended ethics training showed significant improvement in their moral awareness and decision making processes than women in the other group.

Ludlum and Sergey (2005) however suggests that training can also help to encourage students to act more ethically. Similarly Steele et al (2016) demonstrated a generally positive linkage between ethics training and ethical decision making of students. While the present study does not concern itself with the relationship between ethics training and ethics conduct, it considers that the awareness of unethical behaviour by students is an important step in influencing their ethical conduct. It is the importance of ethics that has drawn many to examine students' ethical judgements and perceptions of unethical practices. Zarkada-Fraser et al (1998), for example, conducted an empirical study on attitudes of final year construction management students towards ethical issues in the tendering process. They used scenario-based questions to examine the student's ethical judgements. Others, such as Alutu (2007) focused on student awareness of unethical behaviour.

The many studies that have examined student ethical perceptions demonstrate that contextual differences can result in differences of perceptions. While Mukumbwa and Muya (2013) examined the views of construction industry professional, clients, and other interest groups, the primary aim of the present study was to investigate the extent to which students perceived certain unethical practices are prevalent in the Zambian Construction industry. It can be argued that the perception of prevalence should be based on professional experience. However, it is possible that students would have some conceptions of what is going on in their industry through both education/training and any industrial experience they may have. Alutu (2007) surveyed Nigerian students' perceptions of the prevalence of unethical practices and suggested that the students perceptions of unethical practices could be informed by practical experiences during their studies and through knowledge gained in class. In addition their personal ethics can have an influence on their perceptions of unethical behaviour in the industry. Stappendbelt (2013) examined the personal ethical perceptions of engineering students and placed ethical training as a process of reinforcing students ethical inclinations and as a motivation to students to act in an ethical manner consistent with their beliefs. In some ways, the professional ethics is seen as an extension of their personal ethics. This study, similar to Alutu's (2007), acknowledges that as the student sample used in the survey, start gaining practical experience in their third year of study, they are provided with opportunities to construct their perceptions of the prevalence of unethical practices based on this experience and generally from the class discussions of construction industry practices.

Students Ethical Perception

The recognition of unethical behaviour is a necessary step if the problem is to be dealt with. As such there has been a number of studies that have focused on ethical perceptions of students. See for example: Atesh et al (2016), Bageac et al (2011) and Chung et al (2008). Different approaches have been used to investigate students' ethics perceptions. A significant proportion have examined students' attitudes towards business ethics. See for example: Fatoki and Marembo (2012), Nejati et al (2010), Nguyen and Pham (2015) and Raguz and Matic (2016). Others have assessed students' recognition of ethical dilemmas (Sinha et al, 2007) or used vignettes/scenarios to assee students' recognition of ethical issues (Chung et al, 2008). The consideration of such factors as geographical location, culture, year of study in explaining the reasons for the potential differences in ethical perception has also been studies. Examples of such studies are discussed below.

Aydemir and Demirci (2008) examined ethical perceptions of Turkish University students and examined the impact of gender, class, income, academic major, job experience on ethical

perceptions. They found that there is a relationship between students' ethical perceptions and some of the demographic disposition of students. Fatoki and Marembo (2012) also conducted a study and analysed the ethical perceptions of students in USA. They took into consideration the impact of gender, level of study and nationality of the students. Interestingly they noted a significant difference in perception of ethical practices between students in different level of studies. However they did not observe significant differences when gender or nationality was taken into consideration. Steele et al (2016) compared ethical perceptions of graduate students from the US and international students studying in the USA and concluded that nationality of students had a significant impact on the students' ethical perceptions. Lin (1999) compared the ethical perceptions of company employees and university students. While concluding that significant differences between the two groups existed, the ethical perceptions of the two were also found to have some similarities. Raqus and Matic (2015) investigated the attitudes towards business ethics by students from five Croatian universities. They concluded that there are significant differences between demographics and personal characteristics in relationship to perceptions towards business ethics. They found differences in perceptions based on gender, level of study and university the students attended. Ludlum and Moskaloinox (2005) also argued that student's level of study can influence a student's ethical attitude, with students in higher levels likely to take greater ethical risks than those in the early years of their university.

Other studies, however, have demonstrated that there are significant differences in ethical perceptions between students from different countries. Bageac et al (2011), for example, compared French and Romanian students attitudes to business ethics and found significant differences between the two groups; Simalarly Chung et al (2008) compared data from students from USA, China, Japan amd Republic of Korea. Other comparison include: USA and Hong Kong (Danon-Leva et al, 2010); USA, Finland and China (Comegys et al (2013); Australia, Isreal, Taiwan and USA (Lin 1999); USA and Vietnam (Nguyen and Pham, 2015); and Iran and Malaysia (Nejati et al, 2011) among others. Similar to many other country-comparison studies, they identified some of the significant differences in attitudes to business ethics between the two countries.

It is against this background that the present study, with a focus on students based in Zambia was undertaken. The literature reviewed above suggested that the locational consideration of participants can play a significant influence in perception of unethical behaviour. Nejati et al (2011, p68) argue that a *"study about business ethics attitude would help to understand the specific behavioural practices in a country resulting in minimising the costs of doing business in that country through avoiding misunderstanding and ethical conflicts".* The present study takes a similar approach to that adopted by Alutu (2007) where students' perception of unethical conduct in the Nigerian construction industry was the focus. The present study focused on student perceptions of unethical practices in the Zambian construction industry.

Methodology

The findings reported in this paper was part of a wider study that sought to investigate student perceptions on various issues in the construction industry. It adopted a survey methodology and data was collected using a questionnaire. This is a common approach used in many other studies on student perceptions of ethical issues as it enables the collection of data from a larger sample size. The study was based on a purposive sample of students as the intention was to

gather views of students from different disciplines. Tangco (2007) suggests that purposive sampling is effective when one wants to capture views on a certain cultural domain with knowledge experts represented in the sample. This approach ensured that students from different years of study and courses were represented in the study. The focus of the study was on students in their third, fourth and fifth year within a university department offering degree courses in architecture, quantity surveying, construction management, civil engineering, planning and real estate.

1 shows the demographic make-up of the sample based on year of study [Year 3= 41%; Year 4= 27%; Year 5 = 32%). Students at the case study institution take a five-year degree course. However only students in their third, fourth and fifth year of study were selected to participate in the study. As indicated in the introduction, these are students who would be considered to have started formulating their perceptions of unethical practices based on their practical experiences and through their learning of construction industry practices. As part of the program design, students in their third and fourth year of study are required to go for industrial experience at the end of the academic year. As such, students in their fourth and fifth years of study would have had practical experience, while students in their third year would have been prepared to go for their initial industrial experience. Table 2 shows the different courses taken by the sample students. The study was based on a purposeful sampling approach and as can be observed, it included students from six undergraduate courses offered by the department. These include, architecture, building, civil engineering, quantity surveying, planning and real estate management.

Table 1: Sample Demography- Year of study

Table 2: Sample Demography- Course

The items used in assessing the ethical perceptions was based on the unethical practices identified in literature. The initial list was drawn from items used by Kang and Shaharay (2013) who compared unethical practices in South Korea and previous studies. A comparison of these practices with those identified by Mukumbwa and Muya (2014) and Sichombo et al (2009) is made. Mukumbwa and Muya (2014) and Sichombo et al (2009) focused on ethical issues in the Zambian construction industry. Further, the unethical practices identified by Alutu (2007), who used a similar sample type to evaluate unethical practices in the Nigerian construction industry, are considered. A further review of literature as discussed in the previous section show that these unethical practices are generally identified in various other studies. As such the unethical practices presented in table 4 represents a wider selection of ethical malpractices based on the review of literature.

Preliminary analysis of the measurement model based on factor analysis was used to test the factorial validity of the measurement model. This measures the internal consistency of the measurement model. Table 3 presents the results of reliability analysis based on Cronbach alpha (0.878). The measurement model was considered to be reliable as Cronbach alpha values of > 0.7 are considered to represent an acceptable measurement model (Pallant 2001).

Table 3: Reliability test

Results and Discussion

General Ethical Perceptions

The primary focus of this study was to examine the perception of students of the prevalence of unethical practices in the Zambian construction industry. Students were asked to rate the extent to which they perceived the listed unethical practices where prevalent in the Zambian construction industry. The aggregate results for all the students is presented in table 4. The mean score was used to rank the perceived extent of the prevalence of unethical practices. As can be observed from the data, the most prevalent form of unethical practice as perceived by students was bribery and corruption. This, in the top five, is followed by improper political or society involvement [conflict of interest], lack of protection to the environment, lack of quality or quality control of work [including failure to practice whistle-blowing] and favouritism, discrimination and harassment. The least prevalent unethical practices were perceived to be alcohol and drug abuses, workplace violence, mishandle sensitive information, improper bidding practices and improper drawings practices. These findings are largely consistent with both Mukumbwa and Muya (2013) and Sichinsombo et al (2009). For example, Mukumbwa and Muya (2013) found that political interference, bribery and corruption (in the inception and tender stage) and low quality monitoring procedures (in the construction stage) were some of the top ranked unethical practices in the Zambian construction industry as perceived by industry professionals. Sinchombo et al (2009) identified a number of unethical practices in both the pre-contract and post-contract stages. Their findings indicated that all the malpractices scored a frequency index of above 50% implying that they were quite frequent. The findings in table 4 shows that all ethical malpractices had a mean score of above 3.00, with the exception of workplace violence (2.42) suggesting that students perceived the unethical practices to be quite prevalent.

Table 4: Prevalence of unethical practices: Aggregate scores

Ethical Perceptions- Intergroup Differences

The data was assessed to determine the potential differences in perceptions between the different demographic groups based on year and program of study. Such demographic context were demonstrated in the literature review to have a significant impact on ethical perceptions and judgement of students. The data is presented in table 5 and table 6.

Table 5 presents a comparison of perceptions between the different year groups. A review of the data in table 5, shows that there is also an agreement of the top two unethical practices- bribery and corruption and political influence Inadequate quality control (year 3 and 4) and violation of environmental ethics (year 3 and 5) are also identified as some of the top 5 factors. However, there are differences in the overall list concerning the top five factors across the groups. It is possible that this may be a reflection of the level of knowledge of what goes on in the construction industry especially that third year students would have constructed their perception based on their class learning while fourth and final year students would have been be influenced by their knowledge gained during their practical experience period. The data also suggest a general agreement relating to the least prevalent practices. While the order of perceived prevalence is different, the least five factors identified by students in year four is

largely same as those items identified by students in year five. In addition, four of the five unethical practices identified as the least prevalent by year three students were also identified by students in their year four and five as among the least five prevalent unethical practices.

An evaluation of the potential differences in perceptions, between the groups based on year of study, was tested using Kruskal Wallis H-Test. A composite ethical perception value was calculated and the results are presented in table 7. The data in tables 7 shows that there was no statistically significant difference in perception of prevalence of unethical behaviour between students in different years of study, [H(2) = 0.786, p=0.675, with mean rank values ranging from 57.62 for year 4, 59.27 for year 5 and 64.12 for year 3. Individual item differences were also tested to examine whether significant differences would be observed between students from different course and years of study. The Kruskal-Wallis test scores are reported in table 5 columns 8 to 10. When the year of study is taken into consideration, the only significant differences noticeable relate to over design and workplace violence. A post-hoc pairwise comparison suggests that the differences are between years 4 and 3 and years 4 and 5 regarding perception towards over design; the difference is also noticeable between 5 and 4 when examining perceptions towards workplace violence.

Table 5: Prevalence of unethical practices: Impact of year of study: Top five unethical practices

Table 6: Prevalence of unethical practices: Impact of year of study: Bottom five unethical practices.

The data in 6 show that there is generally a level of agreement of the top two most prevalent unethical practice- that is bribery/corruption and political influence. In addition there is generally an agreement of the two least prevalent unethical practices [work place violence and alcohol/drug abuse]. It is noted also that in all programs of study, the top five most prevalent practices are in the top seven of the aggregate ranking. The picture is similar when the bottom 5 for each program of study are considered as in each case these are within the bottom 6 of the aggregate ranking. A further review of the data suggests some subtle differences between groups. As can be seen there are differences between the groups, while there is generally an agreement on the top two and least prevalent practice, the differences in rankings are noticeable. In comparison to the year based comparison where the rankings are generally in line with the aggregate rankings, the data shows notable differences in rankings based on programme of study as the rankings seems to be more spread out.

Table 7Kruskal Wallis Test: Impact of course [Aggregate]

Table 8: Kruskal Wallis Test: Impact of Year of Study [Aggregate]

Table 8 presents the Kruskal Wallis test statistics and shows that there was no statistically significant difference in perception of prevalence of unethical behaviour between students on different course ($H(2) = 2.869$, $p=0.720$ with mean rank values ranging from 55.29 for Real Estate Studies students to 72.69 for Civil Engineering). Individual item differences were also tested to examine whether significant differences would be observed between students from different program of study. The data shows that there are significant differences in perceptions based on year of study regarding the following variables; violation of environmental ethics; political influence; workplace violence and over design of work. A post-hoc pairwise comparison was conducted to examine where the differences emanate from. The differences regarding violation of environmental ethics, political influence, and over design of work are between students on the Construction Management degree and Quantity Surveying; significant differences in perception are also noted between students on the Construction Management degree course and those on the Planning course. The difference in perception regarding workplace violence was between students on the Civil Engineering course and those on the Quantity Surveying course. It is note here that the two primary courses associated with the significant differences in perceptions are the building and quantity surveying degrees. This may be a reflection of their nature of work.

Conclusion

The study set out to explore student's perceptions of the prevalence of unethical behaviour in the Zambian construction industry. A review of literature suggests that contextual factors such as country, year of study, programme of study, gender etc. can have a differentiating impact on ethical judgements and perceptions. This study was the first known of its kind in the Zambian construction industry focusing on construction and built environment student perceptions on ethical practices. Based on the data presented, it can be said that there is a general agreement among the sample participants that they view bribery and corruption and political influences as two of the main unethical practices in the Zambian construction industry. This is consistent with the perception of professionals in the Zambian construction industry reported in other literature. Other unethical behaviour perceived to be the most prevalent include violation of environmental ethics, inadequate quality control and favouritism, discrimination and harassment. The least prevalent practices were perceived to be workplace violence, alcohol and drug abuses, over design of work, bidding malpractices, and disclosure of sensitive information. Perceptions such as low alcohol abuse and work violence could have been triggered by low number of offenders due to severe consequences that the practice attracts and that it is much easier to be noticed when involved in these practices as opposed to bribery which is normally done in secrecy. Extended studies to further categorise some of these unethical practices is necessary. An examination of the differences between the year groups and program of study suggests that, while there are similarities regarding the top two and bottom two unethical behaviour, some differences between these demographic groups are observed. This is also consistent with other studies that have observed such differences. This study demonstrated the realities of student perception of ethical behaviour in the Zambian construction industry. . The awareness of such unethical practices present an opportunity to teach students about the benefits of ethical compliance and consequences of unethical practices. A good understanding of the industry they are being trained for creates a platform for students to be prepared to make ethical decisions as they go into industry. Considering the scope of the present study, two key recommendations are made. First, a further study is proposed to

investigate the significance of factors that influence students' perceptions of ethical behaviours. Second, while the sample was adequate for evaluation of students' perceptions in general, a further study is proposed to test further the significance of the differences in perceptions between students from different programs.

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Tables

Table 1: Sample Demography- Year of study

Year of study	*n*	Percentage
Year 3	49	41%
Year 4	33	27%
Year 5	39	32%
Total	121	100%

Table 2: Sample Demography- Course

Course	*n*	Percentage
BSc Architecture	22	18%
BSc Construction Management	26	22%
BSc Civil Engineering	16	13%
BSc Quantity Surveying	11	9%
BSc Planning	25	21%
BSc Real Estate	21	17%
Total	121	100%

Table 3: Reliability test

Cronbach's Alpha	N of Items
0.878	17

Table 4: Prevalence of unethical practices: Aggregate scores

Unethical Practice	**Mean**	**SD**	**Rank**
1. Bribery and corruption	4.35	0.946	1
2. Political interference	4.10	0.898	2
3. Violation of environmental ethics	3.88	0.942	3
4. Inadequate quality control	3.85	1.070	4
5. Favouritism, discrimination and harassment	3.83	1.186	5
6. Abuse of company resources	3.82	1.008	6
7. Inadequate health and safety provisions	3.77	0.964	7
8. Misrepresentation of financial status	3.67	1.121	8
9. Abuse of client resources	3.62	1.059	9
10. Over-pricing of work	3.55	1.162	10
11. Misrepresentation of competence	3.52	1.034	11
12. Misrepresentation of completed/ value of work	3.51	1.123	12
13. Disclosure of sensitive information	3.40	1.099	13
14. Bidding malpractices	3.38	1.082	14
15. Over design of work	3.24	1.272	15
16. Alcohol and drug abuses	3.21	1.374	16
17. Workplace violence	2.42	1.202	17

Table 5: Ethical perceptions comparison by year group

Unethical Practice\Cohort	Year 3 [N=49]		Year 4 [N=43]		Year 5 [N=39]		K-Wallis Test [Program of Study]		
	Mean	Rank	Mean	Rank	Mean	Rank	Chi-Square	df	Sig.
Bribery and corruption	4.43	1	4.17	2	4.36	1	7.659	5	0.176
Political interference	4.11	2	4.28	1	3.95	2	6.433	5	0.266
Violation of environmental ethics	4.04	3	3.72	8	3.79	4	16.696	5	0.005
Abuse of company resources	3.92	4	3.76	6	3.72	8	5.038	5	0.411
Inadequate quality control	3.87	5	4.00	3	3.72	7	2.272	5	0.810
Favouritism, discrimination and harassment	3.77	6	4.00	4	3.79	3	3.151	5	0.677
Inadequate health and safety provisions	3.68	7	3.93	5	3.77	5	3.862	5	0.569
Misrepresentation of financial status	3.63	8	3.76	7	3.66	9	15.986	5	0.007
Misrepresentation of competence	3.62	9	3.45	12	3.44	11	3.947	5	0.557
Abuse of client resources	3.60	10	3.48	11	3.74	6	3.603	5	0.608
Over-pricing of work	3.58	11	3.52	10	3.51	10	6.998	5	0.221
Disclosure of sensitive information	3.53	12	3.35	14	3.26	16	1.657	5	0.894
Misrepresentation of completed/ value of work	3.51	13	3.62	9	3.42	12	7.196	5	0.207
Over design of work	3.42	14	2.69	16	3.41	13	13.250	5	0.021
Bidding malpractices	3.40	15	3.41	13	3.33	15	1.990	5	0.851
Alcohol and drug abuses	3.08	16	3.24	15	3.38	14	8.517	5	0.130
Workplace violence	2.32	17	2.068	17	2.82	17	12.459	5	0.029

Table 6: Ethical perceptions comparison by programme of study

Unethical Practice\Cohort	**ARCH [N=23]**		**CM [N=25]**		**CE [N=16]**		**QS [N=11]**		**PLN [N=25]**		**RE [N=21]**		K-Wallis Test [Year of Study]		
	Mean	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	**Mean**	**Rank**	Chi-Square	df	Asymp. Sig.
Bidding malpractices	4.43	1	4.48	1	4.81	1	4.00	1	4.32	3	3.95	2	0.127	2	0.939
Favouritism, discrimination and harassment	4.09	2	3.96	3	3.81	8	3.73	8	3.92	4	3.38	12	0.875	2	0.646
Political interference	4.04	3	3.60	8	4.44	2	4.00	2	4.48	1	4.10	1	0.795	2	0.672
Abuse of company resources	4.00	4	3.84	5	4.19	3	3.36	11	3.68	7	3.71	7	1.456	2	0.483
Violation of environmental ethics	3.91	5	3.36	14	4.06	4	3.91	4	4.40	2	3.71	6	2.395	2	0.302
Inadequate quality control	3.91	6	4.20	2	3.88	7	3.64	9	3.52	10	3.86	4	1.904	2	0.386
Misrepresentation of completed/ value of work	3.78	7	3.52	10	3.40	15	3.55	10	3.52	11	3.24	15	0.915	2	0.633
Over-pricing of work	3.74	8	3.48	12	4.00	5	3.36	12	3.20	14	3.57	8	0.221	2	0.895
Inadequate health and safety provisions	3.65	9	3.84	6	3.44	14	3.91	6	3.88	5	3.86	3	1.558	2	0.459
Misrepresentation of financial status	3.59	10	3.96	4	3.27	16	3.82	7	3.88	6	3.38	13	0.161	2	0.923
Disclosure of sensitive information	3.48	11	3.48	13	3.50	13	3.09	15	3.24	13	3.48	11	1.682	2	0.431
Abuse of client resources	3.43	12	3.52	11	3.81	9	3.91	5	3.52	9	3.76	5	1.120	2	0.571
Over design of work	3.39	13	3.56	9	3.56	12	4.00	3	2.68	16	2.71	16	8.289	2	0.016
Misrepresentation of competence	3.30	14	3.64	7	3.63	10	3.36	13	3.64	8	3.48	9	1.025	2	0.599
Bidding malpractices	3.30	15	3.32	16	3.63	11	3.36	14	3.28	12	3.48	10	1.758	2	0.415
Alcohol and drug abuses	2.96	16	3.36	15	4.00	6	2.82	16	2.92	15	3.29	14	0.951	2	0.622
Workplace violence	2.26	17	2.60	17	3.25	17	2.45	17	1.96	17	2.29	17	8.590	2	0.014

M= Mean; R= Rank
Arch= Architecture; CM= Construction Management; CE= Civil Engineering; QS- Quantity Surveying; PLN= Planning; RE= Real Estate

Table 7: Kruskal Wallis Test: Impact of course [Aggregate]

Ranks		
Course	N	Mean Rank
Architecture	23	61.52
Construction Management	25	61.70
Civil Engineering	16	72.69
Quantity Surveying	11	56.18
Planning	25	63.18
Real Estate Studies	21	55.29
Total	121	
Chi-Square	2.869	
Df	5	
Asymp. Sig.	.720	

Table 8: Kruskal Wallis Test: Impact of Year of Study [Aggregate]

Ranks		
Year of Study	N	Mean Rank
Year 3	53	64.12
Year 4	29	57.62
Year 5	39	59.27
Total	121	
Chi-Square	0.786	
Df	2	
Asymp. Sig.	0.675	