

PAPER • OPEN ACCESS

Comparative Study On The Ethical Perceptions Of Contractors And Designers In The China Construction Industry

To cite this article: Byung Gyoo Kang *et al* 2017 *IOP Conf. Ser.: Mater. Sci. Eng.* **291** 012024

View the [article online](#) for updates and enhancements.

Related content

- [Value engineering awareness study for sustainable construction in Malaysia](#)
Fathoni U, Zakaria C M and Rohayu C O
- [Effective Safety Management in Construction Project](#)
I Othman, Nasir Shafiq and M.F Nuruddin
- [Towards Implementation of Green Technology in Sabah Construction Industry](#)
Noor Azland Jainudin, Ivy Jugah, Awang Nasrizal Awang Ali et al.

Comparative Study On The Ethical Perceptions Of Contractors And Designers In The China Construction Industry

Byung Gyoo Kang¹, Kaiwen Long², Cheng Zhang³ and Jian Li Hao⁴

¹University of Nottingham Ningbo China, Ningbo, China

^{2, 3 and 4}Xian Jiaotong-Liverpool University, Suzhou, China

Byung-Gyoo.Kang@nottingham.edu.cn

Abstract. Ethics is becoming one of the most important requirements for successful business in the 21st century. The construction industry cannot be exceptional from this trend. However construction ethics management requires different approaches from other industries, as the products of the industry are construction projects which are completely different from mass production. Contractors and designers are two major participants in construction projects. The roles and responsibilities of these two project stakeholders decisively influence all aspects of construction project. Practically ethical perceptions of contractors and designers are one of main aspects to be considered for the effective and efficient management of ethics for the construction industry. This research has investigated the ethical perceptions of contractors and designers in the China construction industry. A questionnaire survey which contains 15 ethical issues and 6 demographic factors has been conducted. 170 construction professionals from construction companies and consulting companies have been participated in this survey. These 15 ethical issues are ranked in terms of seriousness, frequency and importance for both contractors and designers as a single group to understand the overall perceptions in the industry. The analysis has also been conducted for contractors and designers respectively to make comparisons between them. The top three serious ethical issues in the industry are ‘Bribery and corruption’, ‘Failure to practice whistle-blowing’ and ‘Improper bidding practices’. Contractors and designers showed similar outcomes for the top five important ethical issues. But for the middle ranged ethical issues, they showed some differences. Further researches are required to identify the causes of the similarity and differences.

Keywords: Construction, Ethics, Contractor, Designer

1. INTRODUCTION

Back to the Palaeolithic Age between 40,000 and 12,000 B.C., when caves and simple structures were used for human beings to live, construction started to play an important role in human history [1]. Since then, construction has been one of the most labour intensive industries [2]. The levels of ethical perceptions of construction professionals should be one of top priorities of ethics management in the construction industry. The consequences of unethical behaviours of contractors and designers can causes serious issues for successful completion of construction projects. The primary stakeholders of construction projects are clients, designers, contractors, sub-contractors, material suppliers and end-users [3]. Particularly, designers and contractors are the two main parties who eventually produce the quantity and quality of the contract. However in the traditional design-bid-build type of contracts, these two parties are often involved in dispute mainly because the designers work as the representative of the clients. Even though new procurement systems such as Integrated Project Delivery (IPD), PPP/PFI (Public Private Partnership/ Private finance Initiative) and more often design-build have been introduced to the construction industry, still design-bid-build is the most common type of project delivery method, especially in China. Therefore it is worth investigating the ethical perception of



designers and contractors in the China construction industry. The objectives of this research are to investigate the ethical perceptions of contractors and designers in the China construction industry.

To compare the ethical perceptions between contractors and designers with respect to the frequency and seriousness of ethical issues.

The China construction industry has been chosen to be investigated in this research, considering the size and role of the industry in the international construction markets. Further, Chinese contractors have become more active when participating in international construction projects [2]. So the outcomes of this research will provide a good foundation for the future research for the ethics management in the international construction projects.

2. Literature Review

Ethics

Ethics which is a branch of philosophy can be defined as ‘philosophical inquiry into the nature and grounds of morality [4]. It is moral philosophy or philosophical thinking about morality, moral problems and moral judgements. For construction ethics management, basically three major theories of ethics need to be studied - virtue ethics, deontology and utilitarianism. These ethical theories can be used to develop code of ethics, ethics training programme and ethical decision making process [5].

Virtue Ethics

Virtue is defined as a character trait that contributes to one’s flourishing, such as generosity, integrity, honesty and patience [6]. Virtue ethics is the ethical theory and tradition that focuses on finding which character traits are the most important for living an ethically good life [7]. The major concepts for virtue ethics are to develop good character, such as fairness, courage, and self-control, and it focuses on how such excellences help us live good lives, treat ourselves and others well, and share thriving communities. The leading philosophers are Socrates, Plato and Aristotle.

Deontology

The theory and tradition of deontology focuses on ethical duties and whether actions are ethically right or wrong depends on fulfilment of one’s ethical duties. It focuses on the means rather than the ends. Therefore, deontological ethics can be classified as a non-consequentialist ethic [8]. The deontologists argue that there are some things that should not be done even though they maximize the total utility. The leading philosopher is Emmanuel Kant.

Consequentialism/Utilitarianism

According to the theory and tradition of consequentialism, actions (including rules, laws or standards) ought to be judged to be ethically right or wrong depending on the consequences. Therefore in consequentialism, the moral value of an action simply depends on the results. Utilitarianism is the most dominant theory for ethical decision making in engineering fields as it provides clear and objective directions. A problem with utilitarianism is that it just considers the total utility that is produced in the society and fails to take into account how to distribute the utility among the society’s members. One of the common processes to deduce conclusions in utilitarianism is cost-benefit analysis which civil engineers and construction engineers are familiar with [5]. The leading philosophers are Jeremy Bentham and John Stuart Mill.

Construction Ethics

The construction industry plays a substantial role in a country’s national economy, irrespective of the country’s levels of economy development. The construction industry requires a different approach to ethics management from manufacturing or factory based industries. In manufacturing or factory based industries, mass production methods are common practice and stakeholders are related to business. However, in the construction industry, most projects tend to be one-off and the stakeholders are related to project. The major participants in construction industry are the clients, designers, contractors and supplier [3]. Table 2 shows 15 common ethical issues in construction industry [9]. These ethical issues were identified by Jackson (2004) and used successfully for construction management researches in USA, UK, Korea and Malaysia [3], [5], [9]. In this research, these 15 ethical issues have been used to understand the perceptions of designers and contractors in the China construction industry.

Table 1. most common ethical issues in the construction industry

	Issues	Examples
1	Abuse of client resources	Over billing for time and material, inflating hours, excessive changes and charges, etc
2	Abuse of company resources	Abuse of travel allowance, fudging on time cards, personal use of company supplies, equipment, telephone, or facilities, using company employees for personal projects or benefit, etc.
3	Alcohol and drug abuses	Use of alcohol or drugs while on the job, excessive use of alcohol or drugs while off the job, effects of substance abuse on performance and decision-making.
4	Improper political or society involvement, conflict of interest	Political contributions or activity for personal or company gain, undue influence, fraud, conflicts of commitment, financial, personal, political, or other interest in people or organizations that one performs construction services for, etc.
5	Favouritism, discrimination and harassment	Unfair treatment on the basis of race, sex, etc, in business, or in relative to evaluations, promotions, or recommendations, supervisory harassment of subordinates, sexual harassment, etc.
6	Lack of protection to public's health	Poor safety or risk analysis or assessment, neglect in regard to worker safety, hazardous materials, natural hazards, etc.
7	Lack of protection to the environment	Conduct contributing to pollution, deterioration or destruction of air, water, or nature, resource depletion, etc.
8	Failure to practice whistle-blowing	Falsely blaming others for poor performance or schedule delays, company disloyalty, company communication, reporting, and grievance procedures, improper punishment or retaliation against an employee, etc.
9	Improper bidding practices	Collusion, Bid-shopping, bid peddling, etc.
10	Bribery and corruption	Excessive gifts, entertainment, or gratuities, undue influence, inside information, failure to maintain independent judgment; kickbacks, bribery or blackmail, fraud, etc.
11	Mishandle sensitive information	Revealing or obtaining proprietary or confidential information, revealing or discussing confidential bids and prices, misrepresentation of data, violation of privacy, gossip, etc.
12	Misrepresentation of completed work or value of work	Inflating completed work percentages, front-end loading schedules of value, etc.
13	Misrepresentation of financial status or records	Misinforming or misleading the IRS, lending institutions, banks, clients, etc.
14	Lack of quality or quality control of work	Cutting corners in the face of budget or time pressures, not satisfying specifications, hedging on standards, not performing in a workmanlike manner, etc.
15	Lack of competence or misinterpretation of competence	Operating outside one's area of experience or expertise, operating without a license, misleading advertisement for performance or products, misleading information on resumes or pre-qualification statements, etc.

3. Research Methodology

This survey participants are the professionals who work in the China construction industry. The participants work in construction companies or consulting companies in the southwest and the east of China. During the survey, anonymity was guaranteed to minimise the passive replies from the participants as ethics is a sensitive area in the industry. The method of sending questionnaire was using email and social software to communicate with the participants. The questionnaires were sent to the head of companies and distributed to the employees. The progress of survey was confirmed by phone calls. All the questionnaires were collected immediately when it was finished. The process of questionnaire survey took about one month. The questionnaire is composed of three parts. The first part is the demographic information about participants such as gender, age, job, working experience, education level, the existence of company codes of ethics and the effectiveness of the codes of ethics.

The second part is about the seriousness of 15 ethical issues and the third part of questionnaire is about the frequency of 15 ethical issues with responses using Likert Scale of 1 to 5.

4. Findings And Discussion

The number of contractors participated in this questionnaire survey was 94 and the number of designers was 76. The designers include consulting engineers. Although the numbers of these two professions are not equal, considering the number of participants, the results of the analysis can be reliable to understand the ethical perceptions between designers and contractors.

Mean value, standard deviation and rank of these 15 ethical issues based on seriousness and frequency from contractors and designers are presented below. The rank of these ethical issues is based on the mean value of each ethical issue. In the rank term, 1 represents the highest mean value and 15 represent the lowest mean value. If two issues have same mean value, the standard deviation would be used to decide the ranking. The lower value of standard deviation represents that the data are close to the mean value. The higher value of standard deviation represents that the data have a large difference from the mean value. Therefore, if two issues have same mean value, the issue has a lower value of standard deviation can be ranked higher. In this research, the seriousness of 15 ethical issues with responses uses Likert Scale of 1 to 5, where 1 indicates 'extremely serious', 2 indicates 'very serious', 3 indicates 'serious', 4 indicates 'little serious' and 5 indicates 'not serious at all'. The frequency of 15 ethical issues with responses uses Likert Scale of 1 to 5, where 1 indicates 'very often', 2 indicates 'often', 3 indicates 'sometimes', 4 indicates 'rarely' and 5 indicates 'never'. The values of importance are calculated by multiplying the value of mean of seriousness and the value of mean of frequency in each ethical issue.

Table 2 shows the overall ethical perceptions combining both contractors and designers. The issue of bribery and corruption ranks at the 1st in seriousness part. It means that the issue of bribery and corruption is the most serious ethical issue in China construction industry. The issue of lack of quality or quality control of work ranks at the 1st in frequency part. It means that the issue of lack of quality or quality control of work is the most frequent ethical issue from contractors and designers in China construction industry. According to the importance part, the most important ethical issue is the bribery and corruption.

Table 2. Seriousness, frequency and importance of ethical issues (both contractors and designers)

Ethical issues	Seriousness			Frequency			Importance	
	Mean	Std. Deviation	Rank	Mean	Std. Deviation	Rank	Value	Rank
Bribery and corruption	2.67	1.282	1	3.32	1.175	5	8.864	1
Lack of quality or quality control of work	3.34	1.172	5	2.72	1.273	1	9.085	2
Abuse of client resources	3.42	1.17	7	3.27	1.239	4	11.183	3
Improper political or society involvement, conflict of interest	3.55	1.177	12	3.19	1.198	2	11.325	4
Improper bidding practices	3.23	1.376	3	3.52	1.056	10	11.37	5
Failure to practice whistle-blowing	3.19	1.226	2	3.61	1.062	13	11.516	6
Abuse of company resources	3.59	1.075	13	3.25	1.367	3	11.668	7
Mishandle sensitive information	3.43	1.145	8	3.44	1.125	8	11.799	8
Favouritism,	3.54	1.11	11	3.42	1.118	6	12.107	9

discrimination and harassment									
Misrepresentation of completed work or value of work	3.44	1.151	9	3.57	1.145	12	12.281	10	
Lack of protection to public health, safety and welfare	3.52	1.056	10	3.53	1.11	11	12.426	11	
Misrepresentation of financial status or records	3.41	1.154	6	3.65	0.999	14	12.447	12	
Lack of competence or misinterpretation of competence	3.65	0.999	14	3.42	1.17	7	12.483	13	
Lack of protection to the environment	3.26	1.233	4	4.14	0.991	15	13.496	14	
Alcohol and drug abuses	4.15	0.985	15	3.45	1.12	9	14.318	15	
Average of Mean	3.426	0.864		3.434	0.85				

Table 3 compares the ethical perception between contractors and designers. The issue of ‘bribery and corruption’ ranks as the most serious and the most important issue for both contractors and designers. The most frequent ethical issue from contractors and designers is ‘lack of quality or quality control of work’. Contractors and designers showed the same rankings of importance in 7 issues out of 15 (highlighted). The first, second, fourth and fifth important issues are the same between contractors and designers. Therefore it can be concluded that contractors and designers have similar perceptions for the major ethical issues. However they showed some differences in the middle ranked ethical issues.

Table 3. Seriousness, frequency and importance of ethical issues (contractors vs. designers)

	Contractors						Designers					
	Seriousness		Frequency		Importance		Seriousness		Frequency		Importance	
	Mean	Rank	Mean	Rank	Value	Rank	Mean	Rank	Mean	Rank	Value	Rank
Bribery and corruption	2.6	1	3.55	7	9.23	1	2.76	1	3.04	3	8.39	1
Lack of quality or quality control of work	3.6	9	2.61	1	9.396	2	3.03	3	2.87	1	8.696	2
Improper bidding practices	3.3	3	3.57	10	11.781	3	3.14	6	3.46	13	10.86	8
Improper political or society involvement, conflict of interest	3.71	12	3.24	2	12.02	4	3.36	11	3.13	5	10.517	4
Failure to practice whistle-blowing	3.24	2	3.79	13	12.28	5	3.12	4	3.38	10	10.546	5
Lack of protection to public health, safety and welfare	3.57	8	3.45	4	12.317	6	3.45	13	3.63	14	12.524	13

Favouritism, discrimination and harassment	3.47	5	3.57	9	12.388	7	3.63	14	3.22	7	11.689	12
Mishandle sensitive information	3.56	7	3.49	5	12.424	8	3.26	8	3.37	9	10.986	10
Abuse of company resources	3.79	13	3.3	3	12.507	9	3.34	9	3.18	6	10.621	6
Abuse of client resources	3.67	11	3.49	6	12.808	10	3.12	5	3	2	9.36	3
Misrepresentation of financial status or records	3.46	4	3.82	14	13.217	11	3.34	10	3.45	12	11.523	11
Misrepresentation of completed work or value of work	3.62	10	3.72	12	13.466	12	3.22	7	3.38	11	10.884	9
Lack of competence or misinterpretation of competence	3.82	14	3.67	11	14.019	13	3.43	12	3.12	4	10.702	7
Lack of protection to the environment	3.49	6	4.06	15	14.169	14	2.99	2	4.22	15	12.618	14
Alcohol and drug abuses	4.09	15	3.57	8	14.601	15	4.24	15	3.3	8	13.992	15
Average of Mean	3.53		3.53									

5. CONCLUSION

This research has investigated the ethical perceptions of contractors and designers in the China construction industry. With respect to seriousness, frequency and importance, 15 ethical issues were analysed. The top three serious ethical issues in the industry are 'Bribery and corruption', 'Failure to practice whistle-blowing' and 'Improper bidding practices'. The top three frequent ethical issues are 'Lack of quality or quality control of work', 'Improper political or society involvement', 'conflict of interest' and 'Abuse of company resources'. The top three most important ethical issues are 'Bribery and corruption', 'Lack of quality or quality control of work', 'Abuse of client resources'. Both seriousness and frequency are reflected in calculating the importance. In the comparisons between the ethical perceptions, contractors and designers showed similar outcomes for the top five important ethical issues. But for the middle ranked ethical issues, they showed some differences. Further researches and analysis will be required to identify the causes of these similarity and difference between contractor and designers.

References

- [1] Zhou, Z. P., Goh, Y. M., Li, Q. M. 2015. Overview and analysis of safety management studies in the construction industry. *Safety Science*, 72: 337-350.
- [2] Du, L, Tang, W. Z., Liu, C. N., Wang, S. L., Wang, T. F., Shen, W. X., Huang, M. and Zhou, Y. Z. 2016. Enhancing engineer-procure-construct project performance by partnering in international markets: Perspective from Chinese construction companies. *International Journal of Project Management*, 34: 30-43.
- [3] Kang, B. G. and Shahary, M. A. B. 2012. Ethical perception and demographic factors: A comparative study between contractors and designers in the Malaysia Construction Industry. *Malaysian Construction Research Journal*, 10(1).

- [4] Feldman, F. 1978. Introductory ethics. Prentice-Hall.
- [5] Kang B.G. 2009. Principles and Practices of Construction Ethics Management: With a Comparative Study between the UK and Korea, VDM
- [6] McBrayer, J. P. and Markie, P. J. 2014. Introducing ethics: a critical thinking approach with readings. Oxford University Press.
- [7] Hutchings, K. 2010. Global ethics: an introduction. Polity.
- [8] Mizzoni, J. 2010. Ethics: the basis. Wiley-Blackwell.
- [9] Jackson, B 2004. The perceptions of experienced construction practitioners regarding ethical transgressions in the construction industry, The International Journal of Construction Education and Research, 1(2).