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Quantity surveyors' background and training, and their ethical concepts, conceptions and interests considerations

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In this paper, general and specific hypotheses concerning quantity surveyors' ethical perceptions as well as their personal background and professional training are derived from previous research studies (Fan *et al.*, 2001a, 2001b). More rigorous statistical tests, such as Multivariate ANalysis Of VAriance (MANOVA) and Hierarchical Regression Analysis (HRA), are used to test these hypotheses and thus verify findings of the previous research. Salient discrepancies in ethical perceptions of professional quantity surveyors are found to exist among professional quantity surveyors of different ages, membership levels and work experience. In predicting ethical perceptions, it is confirmed that the more experienced and the higher the education level of quantity surveyors, the more optimistic they are concerning recent declines in ethical standards. This group of quantity surveyors (QS) is more willing to sacrifice its self-interest when facing ethical dilemmas. However, results of this study show also that 'background' variables are indeed moderating each other, which are contingent upon the specific ethical perceptions concerned. As a first step for the development of a knowledge base for future professional training and socialization, findings of this study suggest two directions for further research study. Firstly, a case study approach would elicit decisions made in the face of ethical dilemmas. Secondly, extensive surveys in reconciling professional service quality with the expectations of clients and the general public will further enrich the field.

Keywords: Professional ethics, socialization, ethical training

Introduction

Professions are largely creatures of public demand. Professions remain in existence because of continuing recourse to them by the public (Chalkley, 1990). It is clear, therefore, that professionals are in a position to fulfil the expectations of the public in terms of competence, professionalism and willingness to serve (Carey and Doherty, 1968). Regrettably, the economic downturn seems to have posed many challenges to this ultimate baseline. Charges are frequently made against professionals of such as poor service quality, irresponsible servicing attitude, professional negligence and denial of fault. Increasingly, stringent public expectations of 'value for money' are very common, and are understandable during economic hard times. Some are reasonable and some are not, even though sometimes it is very difficult to distinguish right from wrong during the daily practice of professionals. Nonetheless, the interests of the general public are still the ultimate baseline that professionals are striving for. To achieve this, an understanding of the expectations of the general public and the ethical behaviour of quantity surveying professionals is the pre-requisite to improving the service quality delivered by the surveying profession. In this paper, the authors examine these issues.

From a behavioural research point of view, perceptions of self-role, of the roles of others, of one's behaviour and of the direct and indirect outcomes of one's behaviour directly affect the evaluations of the

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proposed behaviour and hence the actual behaviour (Naylor *et al.*, 1980). Furthermore, one's internal criterion system causes one's manifest judgment to largely reflect one's true beliefs and values, though with some qualifications.[1] This means the study of the ethical behaviour of professionals can be approached from two angles. The first is the actual judgment made when facing real ethical dilemmas, and the second is consideration of where professionals place their emphasis when making judgment.

Fan *et al.* (2001a) have pioneered research into professional ethics in the construction industry. With reference to Fan *et al.*'s research (2001a, 2001b), findings illustrate that when quantity surveyors (QS) face ethical dilemmas, different QS reference groups have different important constituents influencing their decision-making. There are significant deviations in ethical perception between young and old quantity surveyors. Though the analytical method of the research of Fan *et al.* (2001a; 2001b) is rather simple and less sophisticated, their findings are worth noting. In particular, their studies indicate that different subgroups of professional quantity surveyors have significantly different ethical perceptions. These interesting findings aroused the authors' interest in further investigating the effects of the background variables (including age, education level, work experience, management level) on professionals' ethical perceptions. This paper employs more rigorous statistical analyses not only for revealing the effects of individual background variables but also for understanding the interaction and the mutual moderating effects of these variables. Furthermore, the extent of the ethical training received by QS professionals will also induce differences among the subgroups of quantity surveyors. These important findings need systematic research if the quantity surveying profession is to improve the professional services it offers to the general public. With this overall goal in mind, the authors further investigate the effects of the 'ethical training' variable on the ethical behaviour of quantity surveyors.

This paper begins with a general definition of professional ethics. Hypotheses derived from findings of Fan *et al.* (2001a, 2001b) are tested. Analytical results are then summarized and discussed within the context of the Hong Kong construction industry. Implications and recommendations are presented at the end of the paper.

Research objectives

This research paper is part of the research project 'Situational Influences on Quantity Surveyors' Ethical Decisions', funded by the Hong Kong Polytechnic University, which commenced in 2001. It is an attempt to examine the ethical concepts and ethical behaviour of quantity surveyors who practice in Hong Kong. A representative sample was constructed from among quantity surveyors who are members of the Hong Kong Institute of Surveyors (HKIS). The objectives of the work described in this paper are to:

- explore the ethical perceptions held by practising quantity surveyors;
- investigate effects of quantity surveyors' backgrounds on their ethical perceptions;
- investigate the effects of quantity surveyors' ethical training on their ethical perceptions; and
- examine the interaction and moderating effects among background variables

Definitions of professional ethics

The term 'professional ethics' is somewhat different from 'ethics', even though it also concerns the rightness of behaviours. The term 'profession' originates from the guilds of Ancient Rome that once existed as big families or tribes engaging in a particular industry (Durkheim, 1992). Bayles (1989) contended that professional ethics is not simply the application of narrow ethical theory but involves political, social and legal philosophy as well. In this sense, professional ethics involves both moral and practical concepts. Professional ethics can be properly analysed against a set of social values and a conception of the general role of professions in society. If they are to serve society, their roles must be examined from the viewpoint of average members of society. To take it further, Bayles (1989) defined professional ethics as a system of norms.

From another angle, professional ethics concerns each decision in practice, not only in ordinary moral terms but also in terms of particular professional norms. Professional ethics, therefore, concerns the study of the morality of the behaviour of professionals in their day-to-day practice. It ascribes moral responsibility not to a person in general but to professionals practising in a particular profession. This notion is automatically tied up with more practical concepts and expectations from the public, like competence, responsibility and willingness to serve the public (Carey and Doherty, 1968). However, such special norms very often limit authority to apply the usual moral principles directly (Goldman, 1980). The role of professionals is hence sometimes strongly differentiated by conflicts of interest that arise between professions and the general public. The mainstream of research in professional ethics thus concentrates on resolving conflicts of interest and making professionally ethical decisions, as

well as controlling and guiding fellow professionals in the course of their day-to-day practice (see, for example, Carey and Doherty, 1968; Gavin *et al.*, 1991; Henry, 1995; Hong Kong Ethics Development Centre (HKEDC), 1996; Sandor and Wilkinson, 1996; Hong Kong Society of Accountants (HKSA) and HKEDC, 1997, etc.)

Ethical theories

Both ethics and professional ethics concern ethical behaviour against a set of values and norms, with a major difference in the frames of reference of such values and norms. In other words, their base of morality is somehow different and subject to the interpretations of various interested groups (professions). Ethical thinkers, philosophers and professionals may have different conceptions of the rightness and wrongness of behaviour, and hence different criteria for defining behaviour, which is ethical. These different criteria are further developed into ethical theories with emphasis on different aspects of behaviour. HKEDC (1996) summarize the ethical theories into a conceptual map.

Ethics considerations

The seven contemporary ethical theories (*Egoism*, *Utilitarianism, Right, Justice, Duty, Categorical Imperative* and *NORM)* shown above reveal the complexity of morality assessment criteria and hence considerations of ethics by professionals. In an attempt to investigate professionals' ethical perceptions, Fan *et al.* (2001a) translated these seven criteria of morality assessment into statements describing various ethical considerations on which professionals may place their emphasis during their daily practice. Different subgroups of quantity surveyors placed their emphasis on these seven criteria differently. A complex network of multi-dimensional ethics considerations is thus presented. Since the research concentrated on differentiating the ethical perceptions of quantity surveyors based on their background variables, the effects of these variables on practising surveyors' ethical considerations remain unresolved.

Nevertheless, the significantly different ethical perceptions of quantity surveyors do imply some relationship between ethics considerations and different backgrounds. Background variables such as membership, age, education level and organization type strongly differentiate quantity surveyors' preferences between these seven ethical theories. These variables also make differences to quantity surveyors' attitudes towards the recent decline in ethical standards. It is expected that, even when we consider these seven ethical theories altogether, the composite preferences of quantity surveyors towards these theories are strongly differentiated by their background variables. To put it in general terms, the first set of hypotheses are formulated as follows:

Hypothesis 1a (H1a): The different backgrounds of quantity surveyors strongly influence their ethical perceptions of the recent decline in ethical standards.

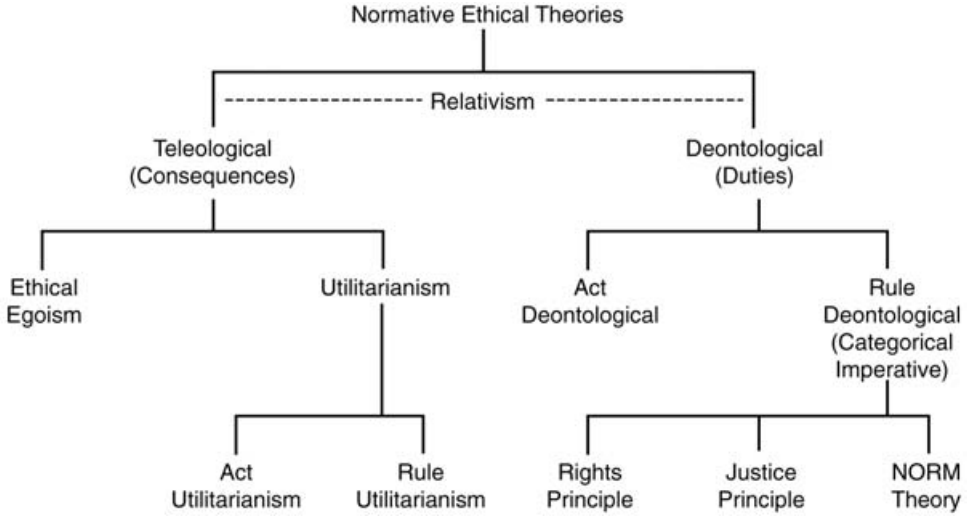

Figure 1 Ethical theories: a conceptual map (source: HKEDC, 1996, p. 6)

Hypothesis 1b (H1b): The different backgrounds of quantity surveyors strongly influence their ethical perceptions of contemporary ethical theories.

Hypothesis 1c (H1c): The different backgrounds of quantity surveyors strongly influence their ethical perceptions of the importance of the interests of different parties.

A discrepancy in professional ethics standards between senior and junior surveyors was found in the study (Fan *et al.*, 2001a). In addition, wide and significant variances in attitudes towards ethical concepts and decision-making considerations were found between senior and junior practitioners. Quantity surveyors with higher levels of education, senior membership of professional bodies, and more work experience are more optimistic about the recent decline in ethical standards. In addition, this group of quantity surveyors is also more willing to sacrifice its self-interest when facing ethical dilemmas. Research findings of Fan *et al.*, also show that quantity surveyors (in general) attach great importance to the interests of their employers, of their clients, and of themselves, which is not in line with the expectations of the general public. Indeed, it is an alarming finding for the quantity surveying profession. If the situation continues as it is and deteriorates further, it will pose a serious threat to the survival of the profession. On the other hand, quantity surveyors who carry senior membership of the professional body placed greater emphasis on the interests of the general public. In view of these interesting findings in the research of Fan *et al.*, it is believed that it is necessary to carry out a much more rigorous analysis to amplify and refine these findings. As a result, the second, third and fourth sets of hypotheses are posted as follows:

Hypothesis 2a (H2a): The older the quantity surveyors, the more optimistic they are concerning the recent decline in ethical standards.

Hypothesis 2b (H2b): The more experienced the quantity surveyors, the more optimistic they are concerning the recent decline in ethical standards.

Hypothesis 2c (H2c): The higher the education level of the quantity surveyors, the more optimistic they are concerning the recent decline in ethical standards.

Hypothesis 2d (H2d): The more senior the membership of the quantity surveyors, the more optimistic they are concerning the recent decline in ethical standards.

Hypothesis 3a (H3a): The older the quantity surveyors, the more willing they are to sacrifice their self-interest when facing ethical dilemmas.

Hypothesis 3b (H3b): The more experienced the quantity surveyors, the more willing they are to sacrifice their self-interest when facing ethical dilemmas.

Hypothesis 3c (H3c): The higher the education level of the quantity surveyors, the more willing they are to sacrifice their self-interest when facing ethical dilemmas.

Hypothesis 3d (H3d): The more senior the membership level of the quantity surveyors, the more willing they are to sacrifice their self-interest when facing ethical dilemmas.

Hypothesis 4 (H4): The more senior the membership level of the quantity surveyors, the greater the emphasis they put on the interests of the general public.

Although Fan *et al*'s (2001a) study indicated significant correlations between more background variables, it is premised that the effects of the variables will be mutually moderated by each other. Based on these findings, the fifth set of hypotheses can be formulated as:

Hypothesis 5a (H5a): The effect of membership level negatively moderates that of age, education level and experience, and vice versa.

Hypothesis 5b (H5b): The effect of membership positively moderates that of gender, organization type and management level, and vice versa.

Hypothesis 5c (H5c): The effect of gender negatively moderates that of age, education level, organization type, experience and management level, and vice versa.

Hypothesis 5d (H5d): The effect of age negatively moderates that of organization type and management level, and vice versa.

Hypothesis 5e (H5e): The effect of age positively moderates that of education level and experience, and vice versa.

Hypothesis 5f (H5f): The effect of education level negatively moderates that of organization type and management level, and vice versa.

Hypothesis 5g (H5g): The effect of education level positively moderates that of experience, and vice versa.

Hypothesis 5h (H5h): The effect of organization type negatively moderates that of experience, and vice versa.

Hypothesis 5i (H5i): The effect of organization type positively moderates that of management level, and vice versa.

Hypothesis 5j (H5j): The effect of experience negatively moderates that of management level, and vice versa.

Professional socialization and ethical considerations

Professionals are primarily held responsible to the general public, but the morality of their behaviour is not only assessed in ordinary moral terms but also in terms of special professional norms. Dual standards of behaviour then arise from the particular profession and the general public. The training of professionals in ethics hence plays an essential role in socializing specific professional norms as well as predicting professionals' ethical considerations. The research findings of Fan *et al.* (2001b) reveal that pre- and post-service professional training makes significant differences across professions. Different type of professional socialization (such as different course arrangements, education levels, continuing professional development courses and codes of conduct/ethics) inevitably induces irreconcilable differences between practitioners in different professions. In other words, quantity surveyors with different collegiate and professional training are expected to project different ethics considerations. The sixth set of hypotheses is hence formulated as:

Hypothesis 6a (H6a): The ethical training of quantity surveyors strongly differentiates their ethical perceptions of the recent decline in ethical standards.

Hypothesis 6b (H6b): The ethical training of quantity surveyors strongly differentiates their ethical perceptions of contemporary ethical theories.

Hypothesis 6c (H6c): The more ethical training quantity surveyors have, the better their ethical perceptions of the recent decline in ethical standards can be explained.

Hypothesis 6d (H6d): The more ethical training quantity surveyors have, the better their ethical perceptions of contemporary ethical theories can be explained.

Research methodology

Research approach

This research paper examined the effects of quantity surveyors' background variables and ethical training on their ethical conceptions and considerations, using the same questionnaire as that detailed in Fan *et al.* (2001a, 2001b). The questionnaire comprised of three parts. Part 1 contained seven questions about personal information, which were then transformed into seven background variables, i.e. *Membership (M), Gender (G), Age (A)*, *Education Level (EL), Organization Type (OT), Experience (EX)* and *Management Level (ML)*. Adapted from Gavin *et al.* (1991) and HKEDC (1996), Part 2 consisted of six questions eliciting quantity surveyors' ethical conceptions and considerations, as well as past ethical training. For the purpose of this study, only Questions 2.1, 2.3, 2.5 and 2.6 were utilized. Part 3 entailed two case studies concerning ethical dilemmas faced by quantity surveyors during their daily practice. Since in this study only the responses of quantity surveyors in a case-free situation were analysed, these two case studies will not be discussed in this paper.

Sampling and data collection

The 'snowball' sampling method was used. Distributors passed the self-administered questionnaires on to quantity surveyors practising in five types of organizations, i.e. academia, public clients, private clients, consultants and contractors. The questionnaires successfully reached about 7% of all practising quantity surveyors in Hong Kong, and over 80% of the returned questionnaires were usable. A representative sample of the members of the Quantity Surveying Division (QSD) of the Hong Kong Institute of Surveyors (HKIS) was reconstructed. The final sample size was 10% of the membership of the HKIS QSD.

Measures

Background variables in Part 1 of the questionnaire were measured on an ordinal basis, except for *Gender* (*G*). That is, *Membership* (*M*), *Age* (*A*), *Education Level* (*EL*), *Organization Type* (*OT*), *Experience* (*EX*) and *Management Level* (*ML*) were classified as ordinal variables, whereas *Gender* (*G*) was classified as a categorical variable. Quantity surveyors' ethical perceptions were measured on an interval basis using a four-point Likert Scale, while they were asked to rank, in descending order, the emphasis they would place on the considerations of interests of various parties like *Self, Employer, Client, Superior, Colleagues, Family* and *General Public*. Again, these considerations were taken as ordinal variables.

Data analysis methods

Both *Multivariate ANalysis Of VAriance* (*MANOVA*) and *Hierarchical Regression Analysis* (*HRA*) were employed in testing the six sets of hypotheses. Multivariate data analysis typically means the application of descriptive and inferential statistical procedures to data arrays consisting of multiple elementary responses across several observational units. These multiple elementary responses are parallel items on observed types of behaviours in a group, and in general any set of responses from the observational units where the set is greater than or equal to two.

On a more concrete level, there are several reasons that justify the use of multivariate techniques in this research paper. First, research questions generated from the research of Fan *et al.* (2001a; 2001b) produce multiple response data that in turn demand methods appropriate to their analysis. For example, authors attempt to review and summarize research in a substantive area (e.g. Siebold, 1975), but seldom do they examine the relationship between a single predictor and a single criterion. Most social scientists have long abandoned the single predictor-single criterion relationship in their conceptualizetions of social and behavioural processes (Monge and Cappella, 1980). Second, the research practice of which research produces multiple response data is the use of multiple operationalizations of some variable of interest (Monge and Cappella, 1980). The presence of multiple response data raises a third reason for using multivariate analysis, because whenever the researcher is carrying out significance testing on a set of criterion measures, the question of the experiment-wise error rate must be raised. The multiple comparison issue is simply put. As the number of such tests increases due to multiple responses, finding one or more relationships by chance alone when none actually exists also increases. The researcher is placed in a difficult position since the requirements of theory and sound research practice often demand multiple responses, but these same data cannot be treated as if they are mere repetitions of univariate hypotheses without potentially serious bias. Since the research findings of Fan *et al.* are surprising and alarming, it is believed that the above reasons offered would justify the use of MANOVA and HRA statistical techniques to further investigate the data and finding of the previous research.

There will be three primary multiple linear regression equations incorporating (1) perceptions of the recent decline in ethical standards (question 2.1); (2) perceptions of the seven ethical theories (question 2.2); and (3) emphasis on the interest of considerations of various parties (question 2.3) respectively (see Fan *et al.*, 2001a for details of the questions).

In the first multiple linear regression equation, perceptions of the recent decline in ethical standards are treated as the only dependent variable. In step 1, all background variables are included in the equation. Their interaction effects enter the equation in step 2. Step 3 further incorporates ethical training (question 3) into the equation (see Fan *et al.*, 2001b, for details of questions). Perceptions towards the seven ethical theories are all set as dependent variables in the second regression equation, while emphasis on the considerations of various parties form the group of dependent variables in the third regression equation. Effects of background variables, their interaction and ethical training are progressively incorporated into the equation again.

Pillai's Trace and *Wilks' Lambda* are selected as indicators of differences in MANOVA. Partial Regression Coefficient β is used to pinpoint the effect of each independent variable. A change in *F*-Statistic and R^2 value following each step of independent variable incorporation helps to show the interaction effect of background variables and the effect of ethical training. To perform the MANOVA and HRA at the same time, the *General Linear Model* (*GLM*) General Factorial Procedure, for both univariate and multivariate analysis and without repeated measures, is employed.

Results

Professional quantity surveyors' perceptions of recent decline in ethical standards: MANOVA results

Table 1 provides the MANOVA results of perceptions of recent decline in ethical standards. Both *Pillai's*

Table 1 Multivariate analysis of variance – perception of recent decline in ethical standards

		Model 1 ($n = 100$)		Model 2 ($n = 100$)		Model 3 ($n = 100$)	
Step 1: main effects	*Test*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Gender (G)	Pillai's Trace	1.383	0.247	2.115	0.094	0.119	0.731
	Wilks' Lambda	1.383	0.247	2.115	0.094	0.119	0.731
Organization Type (O)	Pillai's Trace	1.088	0.365	3.658	0.011*	1.245	0.300
	Wilks' Lambda	1.098	0.367	3.658	0.011*	1.245	0.300
Membership (M)	Pillai's Trace	1.166	0.332	3.196	0.021*	4.181	0.045*
	Wilks' Lambda	1.166	0.332	3.196	0.021*	4.181	0.045*
Age (A)	Pillai's Trace	2.626	0.041*	0.578	0.680	6.472	0.013*
	Wilks' Lambda	2.626	0.041*	0.578	0.680	6.472	0.013
Education Level (EL)	Pillai's Trace	0.720	0.581	2.706	0.041*	0.666	0.417
	Wilks' Lambda	0.720	0.581	2.706	0.041*	0.666	0.417
Experience (EX)	Pillai's Trace	1.587	0.186	0.382	0.820	1.261	0.265
	Wilks' Lambda	1.587	0.186	0.382	0.820	1.261	0.265
Management Level (ML)	Pillai's Trace	2.162	0.081	1.239	0.307	0.694	0.408
	Wilks' Lambda	2.162	0.081	1.239	0.307	0.694	0.408
Step 2: interaction effects							
G × O	Pillai's Trace			0.730	0.664		
	Wilks' Lambda			0.732	0.663		
G × M	Pillai's Trace			1.277	0.293		
	Wilks' Lambda			1.277	0.293		
G × A	Pillai's Trace			0.931	0.454		
	Wilks' Lambda			0.931	0.454		
G × EL	Pillai's Trace			1.285	0.289		
	Wilks' Lambda			1.285	0.289		
G × EX	Pillai's Trace			0.371	0.828		
	Wilks' Lambda			0.371	0.828		
G × ML	Pillai's Trace			1.051	0.391		
	Wilks' Lambda			1.051	0.391		
O × M	Pillai's Trace			1.578	0.077		
	Wilks' Lambda			1.578	0.082		
O × A	Pillai's Trace			2.783	0.037*		
	Wilks' Lambda			2.783	0.037*		
O × EL	Pillai's Trace			1.128	0.342		
	Wilks' Lambda			1.130	0.342		
O × EX	Pillai's Trace			1.537	0.090		
	Wilks' Lambda			1.540	0.093		
O × ML	Pillai's Trace			1.339	0.176		
	Wilks' Lambda			1.360	0.170		

Table 1 (cont'd)

		Model 1 ($n = 100$)	Model 2 ($n = 100$)	Model 3 ($n = 100$)
M × A	Pillai's Trace	3.187	0.021*	
	Wilks' Lambda	3.187	0.021*	
M × EL	Pillai's Trace	0.545	0.703	
	Wilks' Lambda	0.545	0.703	
M × EX	Pillai's Trace	5.139	0.002**	
	Wilks' Lambda	5.139	0.002**	
M × ML	Pillai's Trace	0.064	0.992++	
	Wilks' Lambda	0.064	0.992++	
A × EL	Pillai's Trace	2.263	0.076	
	Wilks' Lambda	2.263	0.076	
A × EX	Pillai's Trace	3.980	0.007**	
	Wilks' Lambda	3.980	0.007**	
A × ML	Pillai's Trace	3.896	0.008**	
	Wilks' Lambda	3.896	0.008**	
EL × EX	Pillai's Trace	0.354	0.840	
	Wilks' Lambda	0.354	0.840	
EL × ML	Pillai's Trace	1.715	0.163	
	Wilks' Lambda	1.715	0.163	
EX × ML	Pillai's Trace	4.877	0.002*	
	Wilks' Lambda	4.877	0.002*	
Step 3: training effects				
Prevention of Bribery Ordinance	Pillai's Trace			0.008 0.930
	Wilks' Lambda			0.008 0.930
RICS/HKIS Bye-Law	Pillai's Trace			0.034 0.855
	Wilks' Lambda			0.034 0.855
RICS/HKIS Regulations	Pillai's Trace			0.032 0.858
	Wilks' Lambda			0.032 0.858
RICS Rules of Conduct	Pillai's Trace			0.471 0.495
	Wilks' Lambda			0.471 0.495
Corporate Code of Conduct	Pillai's Trace			0.080 0.779
	Wilks' Lambda			0.080 0.779
College Courses	Pillai's Trace			1.095 0.299
	Wilks' Lambda			1.095 0.299
CPD Courses	Pillai's Trace			0.040 0.842
	Wilks' Lambda			0.040 0.842

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
+$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

Trace and *Wilks' Lambda* are shown in Table 1. *Wilks' Lambda* has the virtue of being convenient and related to the likelihood-ratio criterion. But for some practical situations, *Pillai's Trace* may be more robust and powerful than *Wilks' Lambda* (Olsen, 1976). In general situations, values of these two MANOVA indicators are the same.

In model 1, only the background variable of *Age* gets a significant result ($p <= 0.05$). This means respondents in various age groups have significantly different perceptions of the recent decline in ethical standards. Besides *Age (A)*, *Management Level (ML)* also shows strong differentiation in perceptions among subgroups ($p = 0.081$). However, subgroups of the remaining background variables (like gender (A), management (M), organization type (O), education level (EL), experience level (EX)) do not show significant differences in perceptions. It seems that H1a cannot be established.

In model 2, background variables are regarded as control variables. The focus of the model is the interaction effects of background variables. Since *Age*, when considered independently, shows significant differences in perceptions among subgroups, it is not surprising that the *F*-Statistics of almost all interaction variables including *Age*, like *OxA, MxA, AxEX* and *AxML* are significant. The *F*-Statistic of *AxEL* is also close to $p <= 0.05$. It seems that subgroups of *Gender* and *Education Level* do not have much difference in their perceptions. Individually, neither of them has a significant *F*-Statistic; furthermore, none of the interaction variables including either *Gender* or *Education Level* are significant. Like *Age*, subgroups of *Experience* also exhibit significant differences in perceptions. The *F*-Statistic of all interaction variables including *Experience*, except *GxEX* and *ELxEX*, are either significant at $p <= 0.01$ or below $p = 0.1$ (*OxEX*). It can be concluded that H1a cannot be accepted.

Ethical training effect is demonstrated in Model 3. Surprisingly, ethical training does not result in significant difference in perceptions of the recent decline in ethical standards. As expected, *College Courses* and *RICS Rule of Conduct* do have some training effect on ethical perceptions, though these are far from significant. It seems that it makes no difference to ethical perceptions whether we have read other ethics-related materials or undertaken CPD courses. Hypothesis 6a is rejected. Traditional and collegiate training, i.e. pre-work ethical training, seems to be more effective in professional socialization. On the basis of these data and findings, the authors would suggest that professional surveying bodies should review their approach, training content and mode of delivery with regard to the use of ethical training materials.

Professional quantity surveyors' perceptions of recent decline in ethical standards: HRA results

Table 2 details the HRA results for investigating the effect of background variables, their interaction and ethical training. Model 1 has a significant *F*-Statistic and can explain the 23% variance in perceptions of the recent decline in ethical standards. Partial regression coefficient *b*'s indicates that QS with junior membership but higher education levels are more optimistic concerning the recent decline in ethical standards. Another group of respondents (QS) who are young, experienced and at a high management level share a similar view on the subject. From the data, hypotheses H2b and H2c are accepted, while H2a and H2d are rejected.

With the incorporation of the interaction effect of the background variables in Model 2, the *F*-Statistic increases and the regression equation becomes more significant. The R^2 value increases by 46.9%. Therefore, Model 2 can explain 69.9% of variance in the perceptions of the recent decline in ethical standards. This means the interaction effects of background variables are very useful in predicting perceptions in this regard. *Age* has negative β, whereas *Education Level* and *Experience* have positive β in Model 1; however, *MxA, MxEL* and *MxEX* have positive, zero and negative β respectively. This means *Membership* would negatively moderate the effect of *Age* and *Experience* on predicting ethical perceptions, but it does not have any interaction effect with *Education Level*. H5a, therefore, is partly confirmed. On the one hand, *Gender* and *Management Level* have negative β while *Organization Type* generally has positive β. On the other hand, *GxM, OxM* and *MxML* have negative, both negative and positive, and positive β respectively. *Membership* therefore positively moderates *Gender* but negatively moderates *Management Level*. However, the moderating effect of *Membership* on *Organization Type* is different for different organizations. Hence, hypothesis H5b is only partly accepted.

By the same token, *Gender* negatively moderates *Age* and *Organization Type*, but positively moderates *Education Level, Experience* and *Management Level*. H5c cannot be fully accepted. *Age* negatively moderates *Organization Type* and *Experience* but positively moderates *Management Level* and *Education Level*. Therefore, H5d and H5e are partly correct. *Education Level* negatively moderates *Management Level* and *Experience*, but its moderating effect is specific to each *Organization Type*. H5f is again partly accepted, while H5g is rejected. The moderating effects of *Experience* and *Management Level* on *Organization Type* are somewhat mixed and specific to the respective *Organization Type*. H5h and H5i are thus rejected. However, H5j

Table 2 Hierarchical regression analysis predicting perception of recent decline in ethical standards

	Model 1		Model 2		Model 3	
	Decline in ethical standards (n = 100)		Decline in ethical standards (n = 100)		Decline in ethical standards (n = 100)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	3.032	0.000***	54.720	0.025*	2.879	0.000***
[Gender=1] (G1)	–0.117	0.430	–5.913	0.030*	–0.058	0.731
[Organization=1] (O1)	0.481	0.094	3.818	0.802	0.524	0.110
[Organization=2] (O2)	0.430	0.045*	–4.797	0.762	0.474	0.057
[Organization=3] (O3)	0.094	0.708	2.354	0.868	0.143	0.603
[Organization=4] (O4)	0.272	0.190	–6.744	0.610	0.303	0.195
[Organization=5] (O5	0.000		0.000		0.000	
Membership (M)	0.302	0.066	–23.533	0.014*	0.394	0.045*
Age (A)	–0.047	0.005**	–1.004	0.026*	–0.046	0.013*
Education Level (EL)	0.088	0.343	–17.853	0.001***	0.079	0.417
Experience (EX)	0.025	0.151	–0.057	0.842	0.022	0.265
Management Level (ML)	–0.066	0.637	3.412	0.769	–0.132	0.408
F	2.298	0.020*	2.298	0.020*	2.298	0.020*
R^2	0.230		0.230		0.230	
Step 2: interaction effects						
G1 × O1			–3.640	0.025*		
G1 × O2			–0.978	0.366		
G1 × O3			0.000			
G1 × O4			0.000			
G1 × O5			0.000			
G1 × M			1.467	0.033*		
G1 × A			0.047	0.641		
G1 × EL			1.256	0.295		
G1 × EX			0.203	0.120		
G1 × ML			–0.613	0.204		
O1 × M			–0.890	0.868		
O2 × M			4.077	0.285		
O3 × M			4.384	0.262		
O4 × M			2.874	0.645		
O5 × M			0.000			
O1 × A			–0.110	0.339		
O2 × A			0.000			
O3 × A			0.000			
O4 × A			0.000			
O5 × A			0.000			
O1 × EL			–3.552	0.218		
O2 × EL			2.228	0.027*		
O3 × EL			0.000			
O4 × EL			1.432	0.198		
O5 × EL			0.000			
O1 × EX			0.398	0.231		
O2 × EX			0.026	0.946		
O3 × EX			–0.131	0.749		
O4 × EX			–0.017	0.964+		
O5 × EX			0.000			
O1 × ML			4.098	0.022*		
O2 × ML			–2.373	0.160		
O3 × ML			–3.656	0.084		
O4 × ML			–0.554	0.645		
O5 × ML			0.000			
M × A			0.614	0.263		

Table 2 (cont'd)

	Model 1	Model 2		Model 3	
	Decline in ethical standards ($n = 100$)	Decline in ethical standards ($n = 100$)		Decline in ethical standards ($n = 100$)	
M × EL		0.000			
M × EX		–0.215	0.473		
M × ML		1.111	0.500		
A × EL		0.411	0.023*		
A × EX		–0.013	0.084		
A × ML		–0.285	0.333		
EL × EX		–0.062	0.189		
EL × ML		1.363	0.207		
EX × ML		0.314	0.346		
F		2.491	0.002**		
R^2		0.699			
F Change		0.193			
R^2		0.469			
Step 3: training effects					
Prevention of Bribery Ordinance				–0.014	0.930
RICS/HKIS Bye-Law				0.036	0.855
RICS/HKIS Regulations				–0.036	0.858
RICS Rules of Conduct				–0.096	0.495
Corporate Code of Conduct				0.042	0.779
College Courses				0.160	0.299
CPD Courses				0.028	0.842
F				1.353	0.188
R^2				0.247	
F Change				–0.945	
R^2 *Change*				0.017	

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
+$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

is accepted because *Experience* negatively moderates *Management Level*.

Model 3 illustrates the effect of ethical training. The result of the HRA is consistent with the MANOVA results. It is surprising that the ethical training effect is not salient in predicting perceptions of the recent decline in ethical standards. The *F*-Statistic decreases in value and becomes less significant ($p = 0.188$). R^2 only increases by 0.017, and Model 3 can only explain 24.7% of the variance in ethical perceptions, similar to Model 1 (23%). Some β's of ethical training are positive and some are negative. It is expected that all β's should be positive. However, all Bs are non-significant (some $p >= 0.8$), and this means the β's of ethical training are not significantly different from zero. Therefore, it can be concluded that ethical training does not have much power to predict ethical perceptions. H6c is hence rejected.

Professional quantity surveyors' perceptions of ethical theories: MANOVA results

Tables 3 and 4 show the MANOVA and HRA results for perceptions of the seven selected ethical theories, i.e. *Egoism, Utilitarianism, Right, Justice, Duty, Categorical Imperative* and *NORM*. Quantity surveyors' attitudes towards these ethical considerations largely reflect their way of judging whether an action is right or wrong. In Model 1 of Table 3, *Gender, Membership* and *Age* exhibit significant differences in perceptions among subgroups. However, the *F*-Statistics of other background variables are highly non-significant. Therefore, H1b can only be partly accepted.

The interaction variables are included in Model 2, which, in general, shows that the respective subgroups do not have significantly different perceptions towards ethical theories. Among the interaction variables, only

Table 3 Multivariate analysis of variance – perceptinos towards ethical theories

		Model 1 ($n = 100$)		Model 2 ($n = 100$)		Model 3 ($n = 100$)	
Step 1: main effects	*Test*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Gender (G)	Pillai's Trace	2.170	0.021*	0.972	0.496	2.327	0.015*
	Wilks' Lambda	2.170	0.021*	0.972	0.496	2.327	0.015*
Organization Type (O)	Pillai's Trace	1.137	0.255	1.220	0.306	1.259	0.129
	Wilks' Lambda	1.139	0.255	1.241	0.147	1.241	0.147
Membership (M)	Pillai's Trace	2.971	0.002**	1.378	0.217	1.380	0.199
	Wilks' Lambda	2.971	0.002**	1.378	0.217	1.380	0.199
Age (A)	Pillai's Trace	2.640	0.005**	0.764	0.690	1.733	0.080
	Wilks' Lambda	2.640	0.005**	0.764	0.690	1.733	0.080
Education Level (EL)	Pillai's Trace	1.408	0.179	0.928	0.536	2.096	0.029*
	Wilks' Lambda	1.408	0.179	0.928	0.536	2.096	0.029*
Experience (EX)	Pillai's Trace	1.285	0.244	1.076	0.408	3.433	0.001***
	Wilks' Lambda	1.285	0.244	1.076	0.408	3.433	0.001***
Management Level (ML)	Pillai's Trace	1.258	0.261	0.759	0.695	1.102	0.377
	Wilks' Lambda	1.258	0.261	0.759	0.695	1.102	0.377
Step 2: interaction effects							
G × O	Pillai's Trace			0.975	0.511		
	Wilks' Lambda			1.021	0.455		
G × M	Pillai's Trace			1.624	0.124		
	Wilks' Lambda			1.624	0.124		
G × A	Pillai's Trace			1.687	0.107		
	Wilks' Lambda			1.687	0.107		
G × EL	Pillai's Trace			0.473	0.926		
	Wilks' Lambda			0.473	0.926		
G × EX	Pillai's Trace			1.763	0.089		
	Wilks' Lambda			1.763	0.089		
G × ML	Pillai's Trace			2.527	0.014*		
	Wilks' Lambda			2.527	0.014*		
O × M	Pillai's Trace			1.430	0.118		
	Wilks' Lambda			1.618	0.057		
O × A	Pillai's Trace			0.481	0.921		
	Wilks' Lambda			0.481	0.921		
O × EL	Pillai's Trace			0.857	0.703		
	Wilks' Lambda			0.890	0.653		
O × EX	Pillai's Trace			1.311	0.104		
	Wilks' Lambda			1.338	0.092		
O × ML	Pillai's Trace			1.243	0.188		
	Wilks' Lambda			1.277	0.164		

Table 3 (cont'd)

		Model 1 ($n = 100$)		Model 2 ($n = 100$)		Model 3 ($n = 100$)	
M × A	Pillai's Trace			0.984	0.485		
	Wilks' Lambda			0.984	0.485		
M × EL	Pillai's Trace			1.158	0.348		
	Wilks' Lambda			1.158	0.348		
M × EX	Pillai's Trace			1.066	0.417		
	Wilks' Lambda			1.066	0.417		
M × ML	Pillai's Trace			0.564	0.866		
	Wilks' Lambda			0.564	0.866		
A × EL	Pillai's Trace			0.899	0.562		
	Wilks' Lambda			0.899	0.562		
A × EX	Pillai's Trace			1.903	0.064		
	Wilks' Lambda			1.903	0.064		
A × ML	Pillai's Trace			1.561	0.143		
	Wilks' Lambda			1.561	0.143		
EL × EX	Pillai's Trace			0.926	0.537		
	Wilks' Lambda			0.926	0.537		
EL × ML	Pillai's Trace			0.542	0.882		
	Wilks' Lambda			0.542	0.882		
EX × ML	Pillai's Trace			1.124	0.372		
	Wilks' Lambda			1.124	0.372		
Step 3: training effects							
Prevention of Bribery Ordinance	Pillai's Trace					2.938	0.003**
	Wilks' Lambda					2.938	0.003**
RICS/HKIS Bye-Law	Pillai's Trace					1.302	0.241
	Wilks' Lambda					1.302	0.241
RICS/HKIS Regulations	Pillai's Trace					2.416	0.012*
	Wilks' Lambda					2.416	0.012*
RICS Rules of Conduct	Pillai's Trace					2.236	0.020*
	Wilks' Lambda					2.236	0.020*
Corporate Code of Conduct	Pillai's Trace					1.332	0.224
	Wilks' Lambda					1.332	0.224
College Courses	Pillai's Trace					0.961	0.500
	Wilks' Lambda					0.961	0.500
CPD Courses	Pillai's Trace					1.851	0.058
	Wilks' Lambda					1.851	0.058

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
$^{+}p >= 0.95$; $^{++}p >= 0.99$; $^{+++}p >= 0.999$.

GxML gets significant results ($p = 0.014$) and *AxEX* is close to the 5% significant level ($p = 0.064$). The ethical training effect in this case, unlike in the case of perceptions of the recent decline in ethical standards, makes a difference among subgroups. Some of them indeed induce significant differences in perceptions of ethical theories. H6b is, on the whole, accepted.

Professional quantity surveyors' perceptions of ethical theories: HRA results

Model 1 in Table 4 shows the predicting power of background variables. The effect of background variables on perceptions towards ethical theories is not as strong as on perceptions of the recent decline in ethical standards. Background variables can help predict the perceptions to seven ethical theories to different degrees: *Egoism* (22.3% and 7%), *Utilitarianism* (6.6% and 6.3%), *Right* (18.9%), *Justice* (18.8% and 27.4%), *Duty* (24% and 12%), *Categorical Imperative* (20.6% and 13.9%) and *NORM* (12.7% and 28%). Thus, it becomes clear that among seven theories, background variables are not useful for predicting perceptions towards *Utilitarianism* (just about 6%), while inconsistent perceptions towards *Egoism* are observed (22.3% vs. 7%). This is also reflected in the *F*-Statistic: background variables are non-significant on predicting perceptions towards *Utilitarianism*, ($p >= 0.8$) while the *F*-Statistics are inconsistent for *Egoism* ($p = 0.024$ and $p = 0.821$).

As mentioned previously, consequential theories deal with consequences of an action. *Egoism* is more concerned with self-interest, while *Utilitarianism* intends to achieve the greatest good for the greatest number. It seems that the higher the education level and more experienced the quantity surveyors are, the less they agree to *Egoism* and hence the more willing they are to sacrifice self-interest. On the other hand, quantity surveyors, who are at the senior membership level, support *Utilitarianism*. Nevertheless, based on their attitudes towards *Egoism*, the higher the education level and the more experienced the quantity surveyors are, the more willing they are to sacrifice self-interest. This means H3b and H3c are accepted, while H3a and H3d are rejected.

Deontological theories are simply non-consequential theories that look at the means used to arrive at ethical decisions. The more junior their membership level and the lower their education level quantity surveyors have, the more emphasis they place on *Duty*. At the same time, the more senior their membership, and the older and more experienced they are, the more they tend to adopt the concept of *Categorical Imperative*. As discussed in the previous section, 'Ethical Theories', both of these ethical theories have similar references

Table 4 Hierarchical regression analysis predicting perceptions towards ethical theories

	Model 1																									
	Egoism#1 ($n = 100$)		Duty#2 ($n = 100$)		Justice#1 ($n = 100$)		Utilitarianism#1 ($n = 100$)		Egoism#2 ($n = 100$)		Duty#2 ($n = 100$)		NORM#1 ($n = 100$)		Categorical Imperative#1 ($n = 100$)		Utilitarianism#2 ($n = 100$)		Right ($n = 100$)		Justice#2 ($n = 100$)		Categorical Imperative#2 ($n = 100$)		NORM#2 ($n = 100$)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	1.609	0.049*	2.394	0.008**	2.086	0.004**	1.839	0.054	1.949	0.041*	0.488	0.521	2.388	0.008**	3.752	0.000***	1.457	0.110	3.966	0.000***	2.990	0.000***	3.896	0.000***	2.336	0.001***
[Gender=1] (G1)	–0.089	0.674	0.042	0.857	0.295	0.112	–0.069	0.778	0.016	0.948	–0.051	0.798	–0.046	0.840	0.218	0.368	0.269	0.256	–0.063	0.788	0.727	0.000***	0.382	0.138	0.350	0.043*
[Organization=1] (O1)	–0.743	0.117	–1.037	0.047*	–0.384	0.352	–0.354	0.522	–0.475	0.390	–0.713	0.110	–0.266	0.603	–0.186	0.731	0.607	0.252	–0.137	0.792	0.057	0.892	–0.121	0.832	0.749	0.052
[Organization=2] (O2)	–0.550	0.150	–0.571	0.172	–0.416	0.212	0.018	0.967*	–0.008	0.986*	–0.336	0.348	–0.044	0.914	–0.134	0.759	0.257	0.545	–0.476	0.259	0.021	0.950*	–0.047		0.395	0.200
[Organization=3] (O3)	–0.474	0.293	0.068	0.891	–0.240	0.541	–0.224	0.671	0.012	0.982*	–0.372	0.380	0.582	0.234	0.859	0.099	–0.087	0.863	0.194	0.696	–0.085	0.833	0.656	0.918	0.665	0.070
[Organization=4] (O4)	–0.141	0.690	–0.321	0.406	–0.190	0.537	0.023	0.956*	–0.087	0.833	–0.399	0.230	0.401	0.295	–0.016	0.967*	0.266	0.500	0.122	0.754	0.144	0.648	0.160	0.231	0.802	0.006**
[Organization=5] (O5)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.709	0.000	
Membership (M)	–0.093	0.688	–0.855	0.001***	0.036	0.857	–0.284	0.297	0.259	0.341	0.046	0.833	0.046	0.833	–0.520	0.053	0.429	0.101	–0.073	0.775	0.052	0.802	–0.053		0.610	0.002**
Age (A)	–0.005	0.825	0.025	0.355	–0.060	0.007**	0.027	0.361	–0.004	0.891	0.036	0.131	0.036	0.131	–0.054	0.063	–0.028	0.311	–0.013	0.648	–0.052	0.021*	–0.045	0.850	–0.073	0.000***
Education Level (EL)	0.271	0.049*	0.136	0.363	0.331	0.006**	0.037	0.814	0.095	0.550	0.251	0.052	–0.026	0.859	–0.038	0.806	0.116	0.445	–0.185	0.220	0.069	0.572	0.081	0.138	0.133	0.228
Experience (EX)	0.060	0.038*	–0.000	0.991**	0.050	0.045*	–0.003	0.931	0.027	0.412	–0.007	0.789	0.007	0.820	0.032	0.321	0.033	0.306	–0.021	0.514	0.014	0.592	0.019	0.624	0.060	0.011*
Management Level (ML)	0.045	0.817	0.126	0.558	0.173	0.314	0.053	0.817	–0.223	0.331	0.100	0.588	–0.146	0.492	0.392	0.084	–0.002	0.994**	–0.242	0.265	–0.118	0.504	–0.236	0.590	–0.160	0.312
																								0.322		
	2.238	0.024*	2.459	0.013*	1.802	0.074	0.549	0.850	0.586	0.821	1.066	0.399	1.137	0.346	2.021	0.042*	0.521	0.870	1.815	0.072	2.939	0.004**	1.259		3.040	0.003**
R^2	0.223		0.240		0.188		0.066		0.070		0.120		0.127		0.206		0.063		0.189		0.274		0.139	0.269	0.280	

$^{*}p <= 0.05$; $^{**}p <= 0.01$; $^{***}p <= 0.001$.
$^{+}p >= 0.95$; $^{++}p >= 0.99$; $^{+++}p >= 0.999$.

Table 4 (cont'd)

	Model 2																							
	Egoism#1 (*n* = 100)		Duty#2 (*n* = 100)		Justice#1 (*n* = 100)		Utilitarianism #1 (*n* = 100)		Egoism#2 (*n* = 100)		Duty#2 (*n* = 100)		NORM#1 (*n* = 100)		Categorical Imperative#1 (*n* = 100)		Utilitarianism#2 (*n* = 100)		Right (*n* = 100)		Justice#2 (*n* = 100)		Categorical Imperative#2 (*n* = 100)		NORM#2 (*n* = 100)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	−3.079	0.842	28.314	0.117	−12.638	0.419	−4.706	0.807	−10.983	0.562	−5.137	0.780	−10.839	0.565	11.702	0.552	15.493	0.408	21.871	0.237	−4.539	0.783	13.003	0.525	−1.466	0.916
[Gender=1] (G1)	−0.315	0.931	−0.164	0.969*	1.654	0.655	−2.760	0.546	8.418	0.065	0.059	0.989*	0.040	0.993**	−2.476	0.595	−6.516	0.145	−9.157	0.039*	3.684	0.347	−7.745	0.114	−0.523	0.874
[Organization=1] (O1)	−0.314	0.958*	−5.664	0.412	−7.615	0.209	−5.390	0.469	−1.060	0.884	2.542	0.720	12.735	0.084	−8.008	0.293	0.834	0.908	−0.452	0.949	−3.057	0.630	−7.792	0.324	−12.472	0.023
[Organization=2] (O2)	−2.682	0.524	−11.441	0.022*	−3.664	0.390	0.763	0.884	1.869	0.717	3.439	0.493	−8.449	0.104	−6.082	0.259	−0.374	0.941	−3.316	0.508	−3.445	0.444	−5.809	0.299	−2.997	0.430
[Organization=3] (O3)	0.194	0.874	−0.792	0.577	1.094	0.378	−0.219	0.886	−0.037	0.980*	1.957	0.213	−0.959	0.521	1.957	0.213	0.606	0.682	−1.911	0.193	−0.505	0.699	1.849	0.257	0.761	0.491
[Organization=4] (O4)	−1.411	0.691	−9.531	0.024*	−1.671	0.641	3.585	0.419	2.539	0.559	4.781	0.261	−4.298	0.322	−5.982	0.189	−1.468	0.732	1.211	0.774	−3.414	0.369	0.093	0.984*	−3.260	0.310
[Organization=5] (O5)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Membership (M)	−0.050	0.993**	−1.492	0.833	3.357	0.587	6.516	0.394	16.626	0.030*	2.525	0.729	15.174	0.046*	−3.901	0.616	−6.508	0.380	−7.797	0.286	1.429	0.826	1.683	0.835	4.486	0.416
Age (A)	−0.016	0.973*	−0.574	0.296	0.103	0.829	0.264	0.655	−0.122	0.833	−0.048	0.932	0.455	0.431	−0.037	0.951*	−0.574	0.317	−0.142	0.800	0.445	0.379	−0.156	0.803	0.074	0.862
Education Level (EL)	0.975	0.848	−2.344	0.691	4.825	0.350	1.355	0.831	9.823	0.120	1.240	0.838	10.532	0.094	2.197	0.735	−1.857	0.763	−6.644	0.275	4.570	0.402	−1.339	0.842	4.573	0.321
Experience (EX)	−0.009	0.978*	−0.243	0.530	0.069	0.837	−0.279	0.503	−0.348	0.396	−0.019	0.961*	−0.616	0.134	−0.827	0.056	0.137	0.734	−0.084	0.833	−0.825	0.024*	−0.138	0.754	−0.017	0.955+
Management Level (ML)	5.706	0.274	−6.477	0.283	5.542	0.293	−1.514	0.815	−6.050	0.343	2.020	0.744	−6.241	0.326	2.387	0.718	4.971	0.429	−1.568	0.799	−0.960	0.862	−1.986	0.772	−2.039	0.662
F	2.238	0.024*	2.459	0.013*	1.802	0.074	0.549	0.850	0.586	0.821	1.066	0.399	1.137	0.346	2.021	0.042*	0.521	0.870	1.815	0.072	2.939	0.004**	1.259	0.269	3.040	0.003**
R^2	0.223		0.240		0.188		0.066		0.070		0.120		0.127		0.206		0.063		0.189		0.274		0.139		0.280	
Step 2: interaction effects																										
G1 × O1	−2.180	0.115	−1.632	0.304	0.578	0.676	0.284	0.868	2.631	0.120	1.233	0.450	1.338	0.423	−2.364	0.178	−2.147	0.197	−0.211	0.897	−1.314	0.369	−0.140	0.938	1.795	0.148
G1 × O2	−0.783	0.417	−1.464	0.192	0.574	0.555	−0.145	0.904	−0.383	0.745	0.389	0.734	−0.423	0.718	−1.036	0.399	−0.835	0.474	−0.171	0.881	−0.476	0.643	0.883	0.488	−0.021	0.980+
G1 × O3	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × O4	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × O5	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × M	−0.899	0.256	−1.706	0.066	−0.589	0.460	−1.052	0.287	−0.460	0.633	0.516	0.582	0.521	0.587	−1.756	0.084	−1.313	0.171	1.520	0.109	−0.696	0.408	0.398	0.702	1.050	0.142
G1 × A	0.154	0.181	0.062	0.640	0.100	0.385	0.167	0.242	−0.135	0.336	0.114	0.403	−0.007	0.959*	0.012	0.931	0.299	0.034*	0.118	0.383	−0.121	0.322	0.190	0.210	−0.057	0.579
G1 × EL	−0.099	0.896	−0.567	0.520	−0.577	0.453	−0.148	0.876	−0.874	0.350	−0.392	0.665	−0.240	0.795	0.766	0.430	−0.158	0.863	1.273	0.163	0.357	0.660	0.165	0.869	−0.448	0.513
G1 × EX	−0.187	0.103	0.039	0.768	−0.193	0.097	−0.132	0.352	−0.042	0.761	−0.136	0.317	−0.022	0.876	0.093	0.521	−0.169	0.220	−0.060	0.659	0.119	0.329	−0.078	0.602	0.016	0.874
G1 × ML	−0.550	0.368	1.075	0.131	−0.521	0.399	0.199	0.793	−0.540	0.470	−1.122	0.126	0.070	0.925	1.230	0.117	0.490	0.506	0.298	0.681	0.301	0.643	0.624	0.439	0.612	0.267
O1 × M	−2.494	0.110	−2.287	0.203	2.867	0.070	0.824	0.668	1.366	0.470	−0.199	0.913	0.195	0.917	−1.302	0.507	−1.104	0.553	−0.694	0.705	−2.900	0.082	1.063	0.602	2.089	0.136
O2 × M	1.901	0.138	−0.456	0.756	0.992	0.440	0.216	0.892	−0.339	0.827	−0.104	0.945	−0.599	0.698	1.562	0.335	1.753	0.256	−1.165	0.441	−0.406	0.764	−1.276	0.448	0.172	0.880
O3 × M	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × M	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O5 × M	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × A	0.068	0.621	−0.075	0.637	0.044	0.750	0.087	0.614	−0.160	0.345	−0.088	0.591	0.104	0.535	0.115	0.513	−0.005	0.976*	−0.158	0.336	0.002	0.987*	0.090	0.622	0.141	0.258
O2 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O3 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O5 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × EL	0.557	0.780	1.140	0.622	0.433	0.830	2.318	0.355	1.812	0.460	1.036	0.664	5.292	0.034*	1.075	0.673	−0.565	0.815	−0.158	0.947	1.456		0.649	0.806	1.062	0.555
O2 × EL	0.396	0.713	0.380	0.760	0.256	0.814	−0.150	0.911	0.855	0.517	−0.255	0.842	1.022	0.437	0.413	0.763	0.517	0.691	1.020	0.426	0.318	0.782	0.246	0.863	0.128	0.895
O3 × EL	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × EL	−0.123	0.896	0.639	0.555	0.275	0.771	−0.258	0.825	0.095	0.934	−0.340	0.760	0.899	0.431	−0.034	0.977*	0.348	0.758	0.484	0.663	0.954	0.341	−0.754	0.543	0.785	0.353
O5 × EL	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × EX	−0.324	0.245	0.352	0.274	−0.117	0.675	−0.223	0.519	0.082	0.809	−0.136	0.681	−0.085	0.802	−0.161	0.648	0.025	0.942	0.313	0.344	0.006	0.983*	0.162		0.106	0.671
O2 × EX	−0.264	0.289	0.490	0.093	−0.053	0.832	−0.093	0.763	0.054	0.859	−0.076	0.797	0.263	0.387	−0.174	0.582	−0.267	0.376	0.087	0.767	0.070	0.792	0.343	0.298	0.148	0.510
O3 × EX	−0.115	0.660	0.278	0.358	−0.160	0.545	−0.061	0.852	0.124	0.697	−0.073	0.814	0.415	0.195	−0.200	0.547	−0.095	0.764	0.505	0.108	0.200	0.472	−0.395	0.255	0.041	0.863
O4 × EX	−0.219	0.220	0.288	0.164	−0.123	0.493	−0.076	0.730	−0.033	0.878	−0.188	0.374	0.248	0.253	−0.126	0.576	−0.201	0.349	−0.039	0.854	−0.028	0.884	0.124	0.597	0.230	0.152
O5 × EX	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × ML	0.543	0.689	2.564	0.107	0.527	0.701	−1.715	0.313	−1.128	0.498	−1.195	0.461	−1.839	0.268	1.694	0.328	1.207	0.463	2.265	0.164	1.757	0.228	0.042	0.981*	0.771	0.528
O2 × ML	−0.020	0.988*	3.615	0.019*	0.294	0.822	−0.007	0.997++	0.346	0.827	−1.140	0.460	2.414	0.129	1.445	0.381	−0.405	0.795	0.952	0.536	1.376	0.320	1.604	0.349	0.919	0.431
O3 × ML	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × ML	0.875	0.337	2.364	0.028*	0.627	0.495	−1.102	0.333	−0.832	0.456	−1.314	0.228	0.697	0.529	2.268	0.054	0.674	0.540	−0.628	0.562	0.722	0.457	0.315	0.793	0.651	0.427
O5 × ML	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	0.000
M × A	0.085	0.701	0.026	0.920	0.054	0.809	−0.189	0.493	−0.397	0.146	−0.010	0.968*	−0.553	0.044*	0.116	0.681	0.334	0.215	0.130	0.622	−0.136	0.564	−0.019	0.947	−0.115	0.563
M × EL	0.909	0.341	−0.483	0.660	−0.599	0.534	0.186	0.875	−1.032	0.377	−0.174	0.878	0.578	0.618	1.076	0.375	0.139	0.904	0.224	0.843	0.365	0.719	−0.730	0.562	−0.653	0.446
M × EX	−0.121	0.284	0.079	0.545	−0.078	0.494	0.107	0.446	0.041	0.766	−0.097	0.469	0.035	0.796	−0.049	0.731	−0.167	0.221	0.074	0.577	0.091	0.448	0.021	0.888	0.034	0.738
M × ML	−1.582	0.169	0.737	0.576	−1.445	0.213	−0.523	0.713	−0.720	0.606	−0.601	0.658	0.096	0.945	−0.741	0.610	−0.970	0.482	0.920	0.498	0.890	0.465	0.042	0.978*	−0.030	0.977*
A × EL	−0.085	0.557	0.113	0.497	−0.098	0.500	−0.138	0.442	0.173	0.330	−0.024	0.891	−0.299	0.092	−0.153	0.406	0.039	0.821	0.094	0.584	−0.167	0.281	0.025	0.894	−0.078	0.550
A × EX	0.005	0.498	0.005	0.527	0.005	0.537	0.005	0.618	0.026	0.005**	0.008	0.373	0.027	0.003**	0.018	0.057	0.004	0.674	−0.006	0.494	0.013	0.086	0.002	0.828	0.000	0.943
A × ML	−0.079	0.467	0.093	0.460	−0.075	0.496	0.049	0.717	0.323	0.018*	−0.005	0.971*	0.221	0.098	−0.088	0.526	−0.146	0.266	−0.078	0.543	−0.029	0.798	−0.040	0.781	0.060	0.540
EL × EX	0.186	0.009**	−0.074	0.354	0.066	0.341	0.126	0.145	−0.031	0.710	−0.021	0.801	−0.105	0.213	0.126	0.153	0.033	0.695	−0.023	0.778	0.043	0.553	−0.064	0.483	−0.003	0.964*
EL × ML	−0.317	0.677	0.017	0.985*	−0.439	0.567	0.837	0.379	−0.768	0.411	0.254	0.779	−0.764	0.410	−0.345	0.721	−0.002	0.998**	0.793	0.381	−0.455	0.574	0.855	0.396	−0.457	0.505
EX × ML	0.029	0.774	−0.137	0.251	0.020	0.848	−0.043	0.735	−0.177	0.160	0.077	0.526	−0.095	0.448	0.062	0.632	0.095	0.442	0.071	0.559	0.037	0.735	0.026	0.846	−0.057	0.536
F	2.227	0.004	1.939	0.014*	1.252	0.227	1.305	0.188	1.407	0.128	0.688	0.886	1.218	0.256	1.525	0.081	1.237	0.239	1.638	0.051	1.396	0.134	1.403	0.130	1.778	0.028*
R^2	0.650		0.618		0.511		0.521		0.540		0.364		0.504		0.560		0.508		0.577		0.538		0.539		0.597	
											−0.378															
F Change	−0.011		−0.520		−0.550		0.756		0.821		0.244		0.081		−0.496		0.716		−0.177		−1.543		0.144		−1.262	
R^2 Change	0.427		0.378		0.323		0.455		0.470				0.377		0.354		0.445		0.388		0.264		0.400		0.317	

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
+$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

Table 4 (cont'd)

	Egoism#1 (n = 100)		Duty#2 (n = 100)		Justice#1 (n = 100)		Utilitarianism#1 (n = 100)		Egoism#2 (n = 100)		Duty#2 (n = 100)		NORM#1 (n = 100)	
			Model 3											
	B	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Step 1: main effects														
Intercept	0.480	0.620	1.155	0.244	2.136	0.012*	0.764	0.481	2.265	0.043*	0.954	0.244	1.524	0.144
[Gender=1] (G1)	−0.016	0.948	−0.096	0.691	0.154	0.447	−0.260	0.328	−0.101	0.709	−0.260	0.196	−0.094	0.709
[Organization=1] (O1)	−0.966	0.058	−1.501	0.004**	−0.584	0.177	−0.762	0.177	−0.807	0.160	−0.921	0.032*	−0.525	0.329
[Organization=2] (O2)	−0.436	0.270	−0.551	0.173	−0.591	0.083	−0.066	0.882	0.029	0.948	−0.352	0.290	−0.104	0.804
[Organization=3] (O3)	−0.546	0.245	−0.239	0.616	−0.511	0.205	−0.721	0.171	0.056	0.916	−0.330	0.403	0.290	0.562
[Organization=4] (O4)	−0.125	0.734	−0.427	0.257	−0.397	0.210	−0.264	0.521	−0.360	0.391	−0.500	0.110	0.292	0.458
[Organization=5] (O5)	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Membership (M)	−0.007	0.978*	−0.985	0.001***	−0.145	0.523	−0.640	0.034*	0.203	0.503	−0.049	0.825	0.001	0.998**
Age (A)	0.022	0.430	0.059	0.039*	−0.059	0.014*	0.058	0.064	−0.007	0.821	0.030	0.202	0.033	0.262
Education Level (EL)	0.101	0.508	0.018	0.910	0.339	0.011*	−0.052	0.757	0.121	0.483	0.342	0.009*	−0.149	0.359
Experience (EX)	0.048	0.114	−0.013	0.675	0.055	0.035*	−0.019	0.568	0.026	0.454	−0.005	0.849	−0.011	0.743
Management Level (ML)	0.068	0.754	0.348	0.117	0.325	0.082	0.369	0.129	−0.203	0.409	0.131	0.470	0.031	0.892
F	2.238	0.024*	2.459	0.013*	1.802	0.074	0.549	0.850	0.586	0.821	1.066	0.399	1.137	0.346
R^2	0.223		0.240		0.188		0.066		0.070		0.120		0.127	
Step 2: training effects														
Prevention of Bribery Ordinance	0.201	0.383	0.342	0.147	0.310	0.118	0.456	0.079	0.332	0.207	−0.006	0.975*	0.242	0.326
RICS/HKIS Bye-Law	0.566	0.057	0.521	0.085	0.155	0.539	−0.145	0.658	−0.154	0.646	−0.196	0.429	0.419	0.184
RICS/HKIS Regulations	−0.709	0.023*	−0.838	0.009**	−0.273	0.297	−0.018	0.959*	−0.199	0.567	−0.053	0.836	−0.620	0.060
RICS Rules of Conduct	0.028	0.889	0.525	0.013*	0.447	0.012*	0.581	0.012*	−0.118	0.607	0.153	0.369	0.337	0.122
Corporate Code of Conduct	−0.065	0.776	−0.253	0.279	−0.356	0.071	−0.205	0.422	0.005	0.984*	0.033	0.861	−0.239	0.327
College Courses	0.377	0.073	−0.107	0.615	−0.157	0.379	0.026	0.910	−0.486	0.043*	−0.592	0.001***	0.189	0.396
CPD Courses	0.168	0.422	0.450	0.037*	0.076	0.671	0.177	0.448	0.511	0.034*	0.454	0.011*	−0.005	0.984*
F	1.952	0.028*	2.533	0.004**	1.933	0.030*	1.098	0.374	1.294	0.225	2.205	0.012*	1.052	0.418
R^2	0.335		0.395		0.332		0.221		0.250		0.362		0.213	
F Change	−0.286		0.074		0.131		0.549		0.708		1.139		−0.085	
R^2 Change	0.112		0.155		0.144		0.155		0.180		0.242		0.086	

	Categorical Imperative#1 (n = 100)		Utilitarianism#2 (n = 100)		Right (n = 100)		Justice#2 (n = 100)		Categorical Imperative#2 (n = 100)		NORM#2 (n = 100)	
	B	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Step 1: main effects												
Intercept	2.834	0.013*	0.900	0.386	4.580	0.000***	4.026	0.000***	2.938	0.012*	2.150	0.008**
[Gender=1] (G1)	0.216	0.430	0.132	0.604	−0.347	0.193	0.658	0.002**	0.524	0.065	0.262	0.176
[Organization=1] (O1)	−0.352	0.544	0.410	0.446	−0.114	0.839	0.183	0.672	−0.477	0.422	0.635	0.121
[Organization=2] (O2)	−0.009	0.985*	0.062	0.883	−0.574	0.195	−0.014	0.967	−0.136	0.770	0.317	0.322
[Organization=3] (O3)	0.753	0.166	−0.331	0.510	0.170	0.745	0.217	0.590	0.422	0.447	0.505	0.185
[Organization=4] (O4)	0.031	0.942	0.297	0.451	0.108	0.793	0.276	0.384	−0.065	0.880	0.744	0.015*
[Organization=5] (O5)	0.000		0.000		0.000		0.000		0.000		0.000	
Membership (M)	−0.452	0.143	0.360	0.207	−0.141	0.635	0.154	0.500	−0.172	0.584	0.482	0.028*
Age (A)	−0.039	0.228	−0.003	0.926	−0.020	0.509	-0.064	0.008**	−0.022	0.498	−0.059	0.010**
Education Level (EL)	−0.141	0.421	−0.009	0.954	−0.110	0.517	0.074	0.572	0.117	0.516	0.102	0.408
Experience (EX)	0.028	0.427	0.025	0.442	−0.016	0.641	0.025	0.339	−0.007	0.844	0.051	0.040*
Management Level (ML)	0.383	0.127	0.214	0.355	−0.172	0.476	−0.175	0.347	−0.156	0.540	−0.014	0.937
F	2.021	0.042*	0.521	0.870	1.815	0.072	2.939	0.004**	1.259	0.269	3.040	0.003**
R^2	0.206		0.063		0.189		0.274		0.139		0.280	
Step 2: training effects												
Prevention of Bribery Ordinance	−0.027	0.413	−0.047	0.848	−0.027	0.915	−0.371	0.064	0.133	0.624	0.022	0.906
RICS/HKIS Bye-Law	0.464	0.173	0.640	0.045	−0.421	0.202	−0.100	0.691	0.593	0.091	0.038	0.872
RICS/HKIS Regulations	−0.552	0.120	−0.997	0.003	0.408	0.234	−0.205	0.436	−0.552	0.129	−0.167	0.498
RICS Rules of Conduct	0.093	0.592	0.697	0.002	0.143	0.526	−0.030	0.865	0.216	0.367	0.231	0.162
Corporate Code of Conduct	0.032	0.904	−0.487	0.049	−0.097	0.702	−0.027	0.891	−0.191	0.479	−0.097	0.600
College Courses	0.437	0.072	0.017	0.940	−0.451	0.056	−0.418	0.022*	−0.139	0.572	−0.067	0.689
CPD Courses	0.116	0.828	0.088	0.694	0.066	0.777	−0.010	0.956*	0.516	0.039*	−0.087	0.605
F	1.415	0.158	1.386	0.173	1.567	0.099	2.592	0.003**	1.349	0.192	1.659	0.074
R^2	0.267		0.263		0.288		0.400		0.258		0.299	
F Change	−0.606		0.865		−0.248		−0.347		0.090		−1.381	
R^2 Change	0.061		0.200		0.099		0.126		0.119		0.019	

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$; +$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

and thus this distinction probably suggests an applied interpretation of theoretical issues.

Right and *Justice* have different origins, where the former stresses in-born social instinct and the latter emphasizes the lawful and equitable nature of rights. It seems that the QS with higher education levels – who are older and at lower management levels – tend to espouse the '*Right*' theory. On the other hand, QS with lower education level, who are older and less experienced, are proponents of the '*Justice*' theory. The difference in perceptions of *Right* and *Justice* is expected because the origin of rightness is quite different even though it is reasonable to argue that in-born social instinct may be modified by legal framework and social norms.

It is very difficult to predict perceptions toward in-between deontological-utilitarian theories like the *NORM theory*. These theories deal with the rightness of both the process and the consequence of decision-making. It seems that the more senior membership level the quantity surveyors have, and the older and the more experienced they are, the more emphasis they place on both process and consequence.

When the interaction effects of background variables are included into Model 2, all R^2 increase up to 40%–60%. This drastic increase means the overall interaction effects of background variables have better predicting power than the set of individual background variables. Nevertheless, there are a few individual interaction effects that are found to be significant. In the case of *Egoism*, *ELxEX*, *AxEX* and *AxML* are found to be significant at $p <= 0.05$, while for *Utilitarianism*, none of the interaction effects are significant. This indicates that *Education Level* positively moderates the effect of *Experience*; *Age* positively moderates the effect of *Experience* but negatively moderates that of *Management Level*. For deontological theories like *Duty*, *Categorical Imperative*, *Right* and *Justice*, no interaction variables show significant effects. However, the cases of *NORM*, *MxA* and *AxEX* impose a significant effect on the regression equation. *Age* tends to negatively moderate the effect of *Membership*, but positively moderates that of *Experience*. As a result, H5g is accepted, while H5a, H5d and H5e can only be partly accepted. H5b, H5c, H5f, H5i and H5j, however, are rejected.

In Model 3 of Table 4, the overall ethical training effects are found to enhance the predicting power of the regression equations but to a lesser extent than the interaction effects of background variables, with R^2 ranging from 20% to 40%. However, individual ethical training tools seem to have a more significant effect on predicting perception. They have significant predicting power as to the perceptions of respective ethical theories, but no consistent effect can be observed.

H6d can be accepted, but further and more in-depth research is necessary.

Emphasis on interest of considerations of various parties by professional quantity surveyors: MANOVA results

For investigation of quantity surveyors' consideration of the interests of various parties, none of the main effects of the background variables in Model 1 of Table 5 is significant. It is, therefore, not extraordinary that all the interaction variables generally have higher *F*-Statistics. This means that quantity surveyors' consideration of interests of various parties can be significantly differentiated. Nevertheless, H1c is still rejected due to the highly non-significant MANOVA results of Models 1 and 2. These considerations seem to be strongly different among subgroups classified under ethical training tools. Model 3 of Table 5 shows that quantity surveyors who have read *RICS Rule of Conduct* and taken *College Courses* have quite different views from those who have not.

Emphasis on the interests of various parties by professional quantity surveyors: HRA results

Model 1 in Table 6 indicates that the predicting power of background variables on quantity surveyors' consideration of others' interests is not significant, as contrasted by Tables 2 and 4. In response to seven regression equations in Model 1, only that for *Colleagues* comes close to $p <= 0.05$ ($p = 0.052$), while the *F*-Statistics of others are too low to be significant. The R^2 are: *Yourself* (9.1%), *Employer* (10.4%), *Client* (7.4%), *Supervisor* (15.3%), *Colleagues* (17.9%), *Family* (13.1%) and *General Public* (15.9%), which are too low when compared with perceptions of the recent decline in ethical standards and of ethical theories. Values of β are occasionally significant. For the interest of *Colleagues*, only *Experience* has a significant β, whereas in the case of the interest of the *General Public*, *Age* is the only one having a significant β. More specifically, the data suggest that the more experienced the quantity surveyors are, the more emphasis they place on the interests of their colleagues. And the older quantity surveyors are, the more emphasis they place on the interests of the general public. In respect of H4, Model 1 tells us that the more senior membership the quantity surveyors have, the more emphasis they put on the interests of the general public. However, the β value is not significant at all. This places some confusion on the correctness of H4, and it is therefore not accepted.

When including the interaction effects of background variables, Model 2 in Table 6 indicates a drastic increase in R^2 up to 40%–70%. This serves as concrete evidence of the interaction effects of background variables. Some regression equations have become significant, like those of *Supervisor, Colleagues* and *Family*. Nevertheless, only a few of the interaction variables have significant β. The effect of *Gender* positively moderates that of *Education Level*, while *Organization Type* positively moderates *Management Level*, and *Membership* negatively moderates *Education Level* with respect to the interest consideration of *Yourself*. H5a is therefore accepted, except *Experience*. H5b is rejected because *Membership* is found to negatively moderate *Organization Type*. H5c, for the most part, is rejected because *Gender* positively moderates *Education Level* even though it negatively moderates *Age*. H5f is partly accepted because *Education Level* negatively moderates *Management Level*. H5g is rejected since it is found to negatively moderate *Experience*. H5d, H5e, H5h and H5j cannot be proved where H5i is accepted.

The sharp increase in R^2 values in Model 3, which now range from 20% to 40%, shows that ethical training is powerful in predicting interest considerations. Even though the predicting power of ethical training is not as strong as the interaction effects of background variables, all *F*-Statistics improve and some regression equations become significant. H6d can therefore be accepted. Interestingly, *College Courses* seem to have directed interest considerations towards *Client* and *General Public* but against *Yourself and Family*. This is an important point to note that there seem to be a conflict between the interests of the employer and those of the general public. The data indicate that *RICS Rule of Conduct* helps to establish the importance of interests of *Employer*.

Discussion and conclusions

With reference to the research work of Fan *et al.* (2001a) in professional ethics, this paper has employed more rigorous statistical analyses, namely the use of MANOVA, in double-confirming differences in the ethical perceptions of quantity surveyors under multivariate and case-free situations. We also utilize HRA to test the hypotheses derived from Fan *et al.* (2001a, 2001b) concerning the main and interaction effects of background variables, as well as the ethical training of professional quantity surveyors. However, only *Gender*, *Membership* and *Age* are found to significantly differentiate quantity surveyors' ethical perceptions on several occasions, but this cannot support the general hypothesis that the background variables alone can make a difference in this regard. More specifically, QS who are experienced and have high education levels are more optimistic concerning the recent decline in

Table 5 Multivariate analysis of variance – interest considerations of various parties

		Model 1 ($n = 100$)		Model 2 ($n = 100$)		Model 3 ($n = 100$)	
Step 1: main effects	*Test*	*F*	*Sig.*	*F*	*Sig.*	*F*	*Sig.*
Gender (G)	Pillai's Trace	0.933	0.486	0.278	0.960+	1.145	0.346
	Wilks' Lambda	0.933	0.486	0.278	0.960+	1.145	0.346
Organization Type (O)	Pillai's Trace	1.233	0.197	2.416	0.033*	1.280	0.162
	Wilks' Lambda	1.242	0.191	2.416	0.033*	1.283	0.162
Membership (M)	Pillai's Trace	0.529	0.810	1.200	0.320	0.644	0.718
	Wilks' Lambda	0.529	0.810	1.200	0.320	0.644	0.718
Age (A)	Pillai's Trace	1.126	0.355	1.594	0.159	1.079	0.386
	Wilks' Lambda	1.126	0.355	1.594	0.159	1.079	0.386
Education Level (EL)	Pillai's Trace	0.814	0.578	0.765	0.619	0.911	0.503
	Wilks' Lambda	0.814	0.578	0.765	0.619	0.911	0.503
Experience (EX)	Pillai's Trace	1.218	0.302	1.031	0.422	1.653	0.135
	Wilks' Lambda	1.218	0.302	1.031	0.422	1.653	0.135
Management Level (ML)	Pillai's Trace	0.394	0.903	0.879	0.530	0.810	0.582
	Wilks' Lambda	0.394	0.903	0.879	0.530	0.810	0.582
Step 2: interaction effects							
G × O	Pillai's Trace			0.861	0.544		
	Wilks' Lambda			0.861	0.544		
G × M	Pillai's Trace			0.883	0.527		
	Wilks' Lambda			0.883	0.527		
G × A	Pillai's Trace			0.000	0.000		
	Wilks' Lambda			0.000	0.000		
G × EL	Pillai's Trace			1.527	0.180		
	Wilks' Lambda			1.527	0.180		
G × EX	Pillai's Trace			0.672	0.694		
	Wilks' Lambda			0.672	0.694		
G × ML	Pillai's Trace			0.555	0.789		
	Wilks' Lambda			0.555	0.789		
O × M	Pillai's Trace			1.054	0.404		
	Wilks' Lambda			1.115	0.339		
O × A	Pillai's Trace			2.845	0.014*		
	Wilks' Lambda			2.845	0.014*		
O × EL	Pillai's Trace			1.030	0.432		
	Wilks' Lambda			1.030	0.424		
O × EX	Pillai's Trace			1.146	0.288		
	Wilks' Lambda			1.154	0.282		
O × ML	Pillai's Trace			1.048	0.406		
	Wilks' Lambda			1.018	0.447		

Table 5 (cont'd)

		Model 1 (n = 100)		Model 2 (n = 100)		Model 3 (n = 100)	
Step 2: interaction effects	*Test*			*F*	*Sig.*	*F*	*Sig.*
M × A	Pillai's Trace			1.098	0.379		
	Wilks' Lambda			1.098	0.379		
M × EL	Pillai's Trace			1.104	0.376		
	Wilks' Lambda			1.104	0.376		
M × EX	Pillai's Trace			1.307	0.267		
	Wilks' Lambda			1.307	0.267		
M × ML	Pillai's Trace			0.780	0.607		
	Wilks' Lambda			0.780	0.607		
A × EL	Pillai's Trace			0.966	0.466		
	Wilks' Lambda			0.966	0.466		
A × EX	Pillai's Trace			1.449	0.207		
	Wilks' Lambda			1.449	0.207		
A × ML	Pillai's Trace			0.984	0.454		
	Wilks' Lambda			0.984	0.454		
EL × EX	Pillai's Trace			1.461	0.203		
	Wilks' Lambda			1.461	0.203		
EL × ML	Pillai's Trace			0.942	0.483		
	Wilks' Lambda			0.942	0.483		
EX × ML	Pillai's Trace			0.638	0.722		
	Wilks' Lambda			0.638	0.722		
Step 3: training effects							
Prevention of Bribery Ordinance	Pillai's Trace					0.926	0.492
	Wilks' Lambda					0.926	0.492
RICS/HKIS Bye-Law	Pillai's Trace					1.561	0.162
	Wilks' Lambda					1.561	0.162
RICS/HKIS Regulations	Pillai's Trace					1.633	0.141
	Wilks' Lambda					1.633	0.141
RICS Rules of Conduct	Pillai's Trace					3.437	0.003**
	Wilks' Lambda					3.437	0.003**
Corporate Code of Conduct	Pillai's Trace					1.257	0.285
	Wilks' Lambda					1.257	0.285
College Courses	Pillai's Trace					2.922	0.010**
	Wilks' Lambda					2.922	0.010**
CPD Courses	Pillai's Trace					0.864	0.539
	Wilks' Lambda					0.864	0.539

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
+$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

ethical standards, and more willing to sacrifice their self-interest when facing ethical dilemmas.

Where perceptions towards ethical theories are concerned, most interaction effects are found to be non-significant for various ethical theories, like *Utilitarianism*, *Duty*, *Categorical Imperative*, *Right* and *Justice*. Nevertheless, for *Egoism*, *Education Level* positively moderates *Experience* and *Age* positively moderates *Experience* but negatively moderates *Management Level*. In the case of *NORM* theory, *Age* negatively moderates *Membership* but positively moderates *Experience*.

It can be concluded that the moderating effects of background variables are contingent upon the specific ethical perception concerned. Nevertheless, the overall

Table 6 Hierarchical regression analysis predicting interest considerations of various parties

	Model 1													
	Yourself ($n = 100$)		Employer ($n = 100$)		Client ($n = 100$)		Supervisor ($n = 100$)		Colleagues ($n = 100$)		Family ($n = 100$)		General Public ($n = 100$)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	1.347	0.505	2.315	0.160	4.321	0.020^{+}	3.936	0.022^{+}	6.481	0.000***	8.815	0.000***	8.951	0.001***
[Gender=1] (G1)	0.596	0.269	–0.419	0.338	–0.348	0.474	–0.943	0.039^{+}	–0.491	0.212	–0.026	0.964^{+}	0.459	0.515
[Organization=1] (O1)	0.331	0.759	0.843	0.336	0.180	0.853	–0.461	0.610	–0.620	0.431	–1.741	0.141	2.803	0.049*
[Organization=2] (O2)	0.581	0.447	1.161	0.063	–0.553	0.423	0.182	0.777	0.223	0.688	–1.109	0.185	0.281	0.779
[Organization=3] (O3)	0.108	0.907	0.400	0.597	–0.268	0.750	–0.100	0.898	–0.280	0.680	–1.549	0.130	1.244	0.310
[Organization=4] (O4)	0.831	0.259	0.224	0.707	–0.738	0.267	–0.991	0.111	–0.883	0.101	–0.527	0.511	2.092	0.032*
[Organization=5] (O5	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Membership (M)	0.018	0.975^{+}	–0.055	0.905	0.199	0.697	–0.650	0.173	–0.315	0.445	–0.582	0.347	0.824	0.268
Age (A)	0.064	0.287	0.003	0.958^{+}	–0.051	0.346	0.023	0.646	0.022	0.620	–0.007	0.912	–0.205	0.010**
Education Level (EL)	–0.014	0.965^{+}	–0.279	0.288	0.046	0.874	–0.027	0.921	–0.121	0.607	–0.161	0.646	–0.475	0.262
Experience (EX)	–0.100	0.119	–0.006	0.900	0.052	0.368	–0.016	0.768	–0.102	0.030^{+}	–0.074	0.290	0.128	0.126
Management Level (ML)	–0.228	0.634	0.275	0.479	0.302	0.485	0.541	0.181	–0.061	0.862	–0.303	0.562	–0.377	0.549
F	0.878	0.557	1.019	0.435	0.706	0.716	1.592	0.122	1.923	0.052	1.332	0.226	1.660	0.103
R^2	0.091		0.104		0.074		0.153		0.179		0.131		0.159	
Step 2: interaction effects														
G1 × O1														
G1 × O2														
G1 × O3														
G1 × O4														
G1 × O5														
G1 × M														
G1 × A														
G1 × EL														
G1 × EX														
G1 × ML														
O1 × M														
O2 × M														
O3 × M														
O4 × M														
O5 × M														
O1 × A														
O2 × A														
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O3 × ML														
O4 × ML														
O5 × ML														
M × A														
M × EL														
M × EX														
M × ML														
A × EL														
A × EX														
A × ML														
EL × EX														
EL × ML														
EX × ML														
F														
R^2														
F Change														
R^2 *Change*														

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
$^{+}p >= 0.95$; $^{++}p >= 0.99$; $^{+++}p >= 0.999$.

Table 6 (cont'd)

	Model 2													
	Yourself (n = 100)		Employer (n = 100)		Client (n = 100)		Supervisor (n = 100)		Colleagues (n = 100)		Family (n = 100)		General Public (n = 100)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	–48.471	0.462	21.605	0.678	44.950	0.426	37.602	0.445	7.735	0.830	60.953	0.318	153.976	0.079
[Gender=1] (G1)	–8.741	0.692	5.755	0.742	11.067	0.559	7.576	0.646	8.088	0.504	–26.356	0.200	–55.747	0.059
[Organization=1] (O1)	4.023	0.829	–4.948	0.737	15.713	0.327	2.437	0.861	–5.092	0.618	8.244	0.632	26.255	0.286
[Organization=2] (O2)	–16.290	0.550	15.725	0.466	14.174	0.544	–1.434	0.944	1.093	0.942	–66.219	0.011^{+}	–60.703	0.094
[Organization=3] (O3)	–19.784	0.373	7.712	0.660	11.510	0.545	–3.626	0.827	–4.680	0.700	–38.276	0.066	–43.077	0.143
[Organization=4] (O4)	–14.226	0.520	3.169	0.856	13.387	0.481	–4.618	0.780	–2.941	0.808	–38.805	0.062	–36.905	0.207
[Organization=5] (O5	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
Membership (M)	33.953	0.088	–8.495	0.585	–7.762	0.645	–10.433	0.478	–15.154	0.162	–0.360	0.984^{+}	–37.892	0.146
Age (A)	2.734	0.088	–1.234	0.327	–3.211	0.021^{+}	–1.059	0.372	0.541	0.534	1.285	0.382	–3.073	0.144
Education Level (EL)	13.925	0.373	–0.064	0.996^{++}	–7.707	0.564	–6.665	0.567	–9.793	0.253	–5.650	0.695	–19.883	0.333
Experience (EX)	–1.683	0.100	0.188	0.814	1.458	0.097	0.199	0.792	0.071	0.898	–1.918	0.044^{+}	1.147	0.390
Management Level (ML)	–5.734	0.702	–0.313	0.979^{+}	1.943	0.880	–6.771	0.545	2.285	0.780	–20.382	0.145	–10.555	0.592
F	0.878	0.557	1.019	0.435	0.706	0.716	1.592	0.122	1.923	0.052	1.332	0.226	1.660	0.103
R^2	0.091		0.104		0.074		0.153		0.179		0.131		0.159	
Step 2: interaction effects														
G1 × O1	–7.794	0.393	0.783	0.913	3.190	0.683	4.426	0.516	3.547	0.478	–13.824	0.105	–21.895	0.071
G1 × O2	0.607	0.835	–3.771	0.105	–1.480	0.554	–1.469	0.500	1.260	0.430	4.939	0.071	3.203	0.404
G1 × O3	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × O4	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × O5	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
G1 × M	1.183	0.622	–1.387	0.466	–3.423	0.100	0.111	0.951	1.586	0.231	4.058	0.072	0.776	0.806
G1 × A	–0.088	0.900	–0.092	0.867	0.198	0.739	–0.347	0.505	–0.430	0.260	0.646	0.316	1.826	0.049^{+}
G1 × EL	4.692	0.048^{+}	–1.991	0.282	–3.922	0.053	–1.798	0.304	1.534	0.232	3.087	0.156	0.748	0.807
G1 × EX	0.065	0.851	0.271	0.323	–0.302	0.309	0.373	0.152	0.084	0.657	–0.174	0.587	–0.113	0.804
G1 × ML	0.067	0.972^{+}	0.832	0.576	–0.724	0.654	1.335	0.344	–0.745	0.470	–2.098	0.230	–0.434	0.861
O1 × M	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O2 × M	7.881	0.317	–4.278	0.491	–6.543	0.333	–2.901	0.621	–1.083	0.801	16.777	0.024^{+}	21.843	0.038^{+}
O3 × M	6.222	0.530	–2.203	0.778	–5.227	0.538	–5.067	0.494	–3.422	0.528	15.808	0.088	18.388	0.161
O4 × M	7.298	0.444	–4.835	0.521	–7.859	0.337	–1.666	0.815	0.579	0.912	21.016	0.020^{+}	23.686	0.062
O5 × M	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × A	–0.046	0.910	0.196	0.543	–0.140	0.690	–0.055	0.856	–0.158	0.479	–0.729	0.057	–1.163	0.033^{+}
O2 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O3 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O5 × A	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × EL	10.091	0.102	–3.817	0.430	–9.049	0.087	–4.772	0.297	–0.037	0.991^{++}	5.840	0.302	–0.030	0.997^{++}
O2 × EL	2.972	0.361	–0.974	0.704	–2.004	0.472	–0.112	0.963	0.955	0.591	3.659	0.225	2.817	0.509
O3 × EL	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O4 × EL	2.007	0.476	1.122	0.614	–0.939	0.696	0.486	0.817	0.512	0.739	–0.832	0.749	0.693	0.851
O5 × EL	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × EX	–0.339	0.654	0.266	0.657	0.398	0.540	0.399	0.480	0.168	0.684	0.870	0.216	2.060	0.042^{+}
O2 × EX	0.198	0.770	–0.110	0.837	–0.031	0.957	0.399	0.431	–0.146	0.693	1.136	0.074	1.186	0.186
O3 × EX	0.539	0.474	0.173	0.771	–0.174	0.787	0.351	0.533	–0.064	0.876	0.033	0.962+	1.041	0.294
O4 × EX	0.221	0.645	0.246	0.518	–0.121	0.768	0.486	0.179	0.021	0.937^{+}	0.399	0.371	0.418	0.508
O5 × EX	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
O1 × ML	–9.681	0.016^{+}	4.560	0.143	4.739	0.160	3.291	0.261	2.463	0.251	–4.341	0.231	1.174	0.819
O2 × ML	–2.324	0.513	–0.144	0.959^{+}	1.230	0.686	2.163	0.415	–0.584	0.764^{+}	5.202	0.116	1.329	0.775
O3 × ML	1.499	0.773	–1.320	0.749	0.040	0.993	4.144	0.289	4.046	0.159	1.564	0.745	0.773	0.910
O4 × ML	–1.671	0.497	1.201	0.537	1.389	0.510	1.303	0.479	0.045	0.973	–1.301	0.568	–4.407	0.176
O5 × ML	0.000		0.000		0.000		0.000		0.000		0.000		0.000	
M × A	–1.613	0.020^{+}	0.468	0.385	0.998	0.090	0.458	0.369	0.269	0.470	–1.272	0.047^{+}	0.336	0.706
M × EL	3.750	0.187	–1.817	0.417	–2.836	0.244	–1.271	0.547	3.174	0.044^{+}	2.686	0.306	–1.549	0.676
M × EX	0.393	0.245	–0.084	0.752	–0.228	0.430	–0.218	0.386	–0.132	0.474	0.800	0.012^{+}	0.153	0.729
M × ML	–1.389	0.678	1.683	0.525	–2.270	0.429	0.904	0.718	0.128	0.944	2.593	0.403	3.380	0.443
A × EL	–0.848	0.054	0.277	0.421	0.639	0.089	0.312	0.336	0.085	0.721	–0.368	0.359	0.619	0.279
A × EX	0.045	0.051	–0.021	0.250	–0.024	0.221	–0.021	0.210	–0.022	0.081	0.030	0.148	–0.027	0.365
A × ML	0.366	0.266	0.037	0.885	0.206	0.464	0.109	0.657	–0.119	0.506	0.292	0.336	0.104	0.809
EL × EX	0.037	0.845	0.147	0.332	0.184	0.263	0.084	0.554	0.099	0.345	–0.201	0.257	–0.568	0.027^{+}
EL × ML	0.021	0.992^{++}	–2.286	0.200	–1.897	0.325	–0.053	0.975	0.121	0.922	4.486	0.034^{+}	1.868	0.526
EX × ML	–0.280	0.367	–0.010	0.967^{+}	–0.191	0.473	0.030	0.896	0.227	0.184	–0.183	0.525	–0.036	0.929
F	0.872	0.676	1.026	0.459	1.078	0.392	1.667	0.037	3.007	0.000^{+++}	1.884	0.014^{+}	1.037	0.445
R^2	0.395		0.435		0.447		0.556		0.693		0.586		0.438	
F Change	–0.006		0.007		0.372		0.075		1.084		0.552		–0.623	
R^2 *Change*	0.304		0.331		0.373		0.403		0.514		0.455		0.279	

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
$^{+}p >= 0.95$; $^{++}p >= 0.99$; $^{+++}p >= 0.999$.

interaction effects of background variables are proved by the data to sharply improve the explanations for all regression models. This can be attributed to the high degree of correlation among background variables (see Fan *et al*. 2001a), which reflects a common phenomenon within any professional circle (i.e. professionals are 'similarly trained'). The entry barrier forces every member to receive similar pre-work and post-work training in order to gain membership. Almost all professional examination candidates are holders of relevant degrees; otherwise, they have to take other examinations to trim their way of thinking and technical skills. Since professional membership and post-qualification experience are very important to

Table 6 (cont'd)

	Model 3													
	Yourself (n = 100)		Employer (n = 100)		Client (n = 100)		Supervisor (n = 100)		Colleagues (n = 100)		Family (n = 100)		General Public (n = 100)	
Step 1: main effects	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*	*B*	*Sig.*
Intercept	–0.758	0.746	3.652	0.063	4.837	0.018*	6.288	0.001***	6.205	0.001***	8.065	0.003**	8.148	0.004**
[Gender=1] (G1)	1.011	0.094	–0.593	0.234	–0.802	0.122	–0.869	0.076	–0.323	0.464	0.150	0.821	–0.338	0.633
[Organization=1] (O1)	0.628	0.596	1.438	0.146	–0.563	0.580	0.801	0.405	0.239	0.784	–1.702	0.198	1.197	0.394
[Organization=2] (O2)	0.952	0.278	1.369	0.062	–0.800	0.290	0.094	0.894	1.104	0.089	–0.806	0.408	–0.132	0.899
[Organization=3] (O3)	0.233	0.815	0.866	0.297	–0.779	0.365	0.293	0.717	0.480	0.513	–1.428	0.200	0.165	0.889
[Organization=4] (O4)	0.865	0.293	0.632	0.354	–1.359	0.057	–0.616	0.355	–0.355	0.556	–0.640	0.482	1.331	0.172
[Organization=5] (O5	0.000		0.000		0.000		0.000		0.00		0.000		0.000	
Membership (M)	0.383	0.554	0.521	0.334	–0.363	0.516	–0.056	0.915	0.017	0.971+	–0.292	0.685	–1.188	0.124
Age (A)	0.100	0.135	–0.031	0.578	–0.038	0.509	–0.043	0.427	–0.005	0.917	–0.002	0.978+	–0.158	0.047*
Education Level (EL)	–0.159	0.636	–0.312	0.265	0.222	0.443	–0.103	0.707	–0.142	0.567	–0.375	0.316	–0.177	0.656
Experience (EX)	–0.155	0.027*	0.025	0.668	0.050	0.403	0.029	0.602	–0.099	0.055	–0.097	0.208	0.121	0.141
Management Level (ML)	–0.468	0.372	0.111	0.797	0.767	0.091	0.148	0.728	–0.539	0.166	–0.732	0.210	0.535	0.388
F	0.878	0.557	1.019	0.435	0.706	0.716	1.592	0.122	1.923	0.052	1.332	0.226	1.660	0.103
R^2	0.091		0.104		0.074		0.153		0.179		0.131		0.159	
Step 2: training effects														
Prevention of Bribery Ordinance	0.579	0.276	–0.065	0.883	0.554	0.226	–0.167	0.697	0.251	0.520	0.216	0.714	0.120	0.848
RICS/HKIS Bye-Law	0.015	0.983+	–0.541	0.364	–0.777	0.210	–1.299	0.028*	–0.464	0.379	–0.648	0.416	–0.055	0.948
RICS/HKIS Regulations	0.582	0.435	0.483	0.434	0.931	0.148	1.309	0.033*	0.781	0.156	0.116	0.889	–0.002	0.998++
RICS Rules of Conduct	–0.652	0.187	–0.850	0.040*	0.097	0.819	–0.341	0.394	–0.714	0.051	–0.173	0.751	2.358	0.000***
Corporate Code of Conduct	–0.179	0.731	–0.166	0.701	–0.046	0.919	–0.594	0.163	0.609	0.115	0.663	0.254	0.938	0.131
College Courses	1.055	0.044*	–0.311	0.468	–1.690	0.000***	0.648	0.126	0.609	0.112	1.622	0.006**	–1.374	0.027
CPD Courses	0.110	0.825	–0.271	0.512	0.116	0.786	–0.831	0.042*	0.108	0.768	0.147	0.790	0.132	0.822
F	1.185	0.297	1.077	0.391	1.611	0.082	1.866	0.035*	1.617	0.081	1.392	0.165	2.943	0.001***
R^2	0.212		0.196		0.268		0.297		0.268		0.240		0.400	
F Change	0.307		0.058		0.905		0.274		–0.306		0.060		1.283	
R^2 *Change*	0.121		0.092		0.194		0.144		0.089		0.109		0.241	

*$p <= 0.05$; **$p <= 0.01$; ***$p <= 0.001$.
+$p >= 0.95$; ++$p >= 0.99$; +++$p >= 0.999$.

promotion, graduates usually follow the footsteps of their seniors. This results in the high correlations among age, educational level, membership, management level, experience, etc. The interaction effects are therefore high. However, the moderating effects of background variables deserve further investigation. It is suggested that a case study approach be taken instead of the case-free situation, to take account of the contingent nature of the moderating effects.

Ethical training effects are salient in two out of the three types of ethical perceptions investigated. It seems that pre-work ethical training is effective in professionally socializing graduates to take more account of interests of clients and the general public, and less of self and family. Post-work ethical training works the other way round in directing emphasis towards interests of the employer and against the general public. Problems, therefore, are envisaged in the training content, training approach or way of delivery of post-work ethical training materials. Professional bodies and institutions are hereby urged to review their regulations, rules of conduct and CPD courses to incorporate more professional ethics elements. It is very important for all professionals to recognize that the surveying profession is largely a creature of public demand (Chalkley, 1990). Interests of the general public always need to be at the top of the agenda of our professional services.

Further research is recommended in two directions. One is the case study approach, which will help to elicit a common set of professional norms of conduct, in addition to the general perceptions investigated under the case-free situation in this study. This can obviously help develop a knowledge-based decision-making system or model for more systematic and streamlined ethical training purposes. The overall quality of professional services can be better controlled and improved by incorporating new requirements and expectations from clients and the general public into the system or model. Knowledge of the general public's expectations of the surveying profession, clients'/customers' requirements, and social values on profession are another important direction for future research. This information can help to narrow any discrepancy between professionals and the general public, and serve as a feedback loop for the continuous improvement of professional services.

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Note

1. The manifest judgement may somehow deviate from the true belief value. Naylor *et al.* (1980, p. 82) contend that no matter how well defined his or her belief system might be regarding the way in which the cues are related to the judgment dimension, his manifest judgments are not going to be a perfect reflection of that person's actual belief system.

Appendix

Questionnaire

Part 1: Personal profile

1.1 What is the type of your membership in the Hong Kong Institute of Surveyors?
1.2 What is your sex?
1.3 What is your age?
1.4 What is your highest level of formal education? (You can select more than 1 item)
1.5 How would you classify your organization in the construction industry?
1.6 How long have you practised as a asurveying professional?
1.7 How could your position be best described in the management structure of your or ganization?

Part 2: Opinions about surveyors' professional ethics

2.1 In general, do you perceive that ethical standards of the surveying profession have been declining over the past ten years?

2.2 Have you read about any materials or attended any seminars/ conferences/ courses concerning ethics for surveying professionals? (You can tick more than 1 item)
(a) Prevention of Bribery Ordinance
(b) RICS/HKIS Bye-Law
(c) RICS/HKIS Regulations
(d) RICS Rules of Conduct for Chartered Surveyors
(e) Corporate Code of Conduct of your company/firm
(f) Course(s) on ethics in colleges/polytechnics/universities
(g) CPD courses/study pack
(h) Other related courses, please specify: _____

2.3 What are your perceptions of the 'Professional Ethics reading material' issued by the RICS/Hong Kong Institute of Surveyors?
(a) Helps surveyors sort out ethical concerns
(b) Is meaningless since the Institute has no effective method of enforcing it
(c) Enables the surveying profession to avoid government regulations
(d) Is window dressing; each surveyor acts according to his or her own personal belief
(e) Assists surveyors to resist any management pressure to perform unethical acts
(f) Enhances the professional image of surveyors
(g) Can to a large extent address and provide a working guideline for major ethical problems of HKIS members
(h) Generally meets the needs of the surveying profession
(i) Can be used to encourage higher ethical standards in the surveying profession
(j) Must be subject to continuous refinement and updating since ethical behaviour is dynamic in nature
(k) Others, please specify: _____

2.4 Please rank the importance of the following considerations when resolving ethical dilemmas during your practice:
(a) What was best either for myself or for my company?
(b) That as a manager my first responsibility and ultimate duty is to my company and its shareholders.
(c) That it is important that justice is seen to be done.
(d) That sacrifices are often needed in order to ensure the greatest good for the greatest number.
(e) That effects that the action might have on my personal reputation and career.
(f) That ultimately one should ask whether actions are consistent with organisational goals and do what is expected of me.
(g) Whether one would want to live in a world that a suggested rule prevailed.
(h) Do unto others, as you would have them to unto you.
(i) That as longs as the consequences of the decision affect the majority in a positive way.
(j) Whether the action or a consequence of the action will violate an individual's personal right.

(k) What would be the most equitable outcome for all concerned?
(l) Whether I would want my decision outcome to become a universal rule, which then is applied to everyone in similar circumstances.
(m) Whether a proposed moral rule could encapsulate the essential elements of the dilemma and could be accepted by all parties concerned.
(n) Others, please specify: _____

2.5 How would you rank the importance of the interest of the following parties when resolving ethical dilemmas during your practice? (Please rank from 1 to 7 in descending order of importance)
(a) Yourself
(b) Your employer/company
(c) Your clients
(d) Your superior
(e) Your colleagues
(f) Your family
(g) General public