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The Mediation Influence of Job Satisfaction on Organisational Commitment amongst Quantity Surveyors

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Abstract

Some researchers claimed that job satisfaction directly affected organisational commitment but others considered it had a mediation effect on the relationship between some independent variables and organisational commitment. Thus, this paper aimed to examine whether job satisfaction mediated the relationship between work group identification and the two forms of organisational commitment amongst quantity surveyors. A quantitative approach with questionnaire survey was employed for data collection. Questionnaires were sent to the chartered quantity surveyors and 71 valid responses were obtained for analysis. A bootstrapping approach was applied to the survey data to test the mediating effect of job satisfaction between work group identification and organisational commitment. The bootstrapping results supported most hypotheses. The findings suggested that surveying companies should focus their efforts on improving quantity surveyors' job satisfaction through the organisation of social activities. Special measures should also be taken by the work group leaders to improve the working relationship among quantity surveyors to foster job satisfaction.

Keywords: Organisational commitment, job satisfaction, mediation, quantity surveyors, Hong Kong

Paper Type: Research article

Introduction

Job satisfaction is important in both individual and organisational behavior and the concept has been discussed for more than 60 years. Research findings have showed that individuals' job satisfaction level affects organisational commitment level (Gaertner, 1999; Huang and Hsiao, 2007; Lam, Zhang and Baum, 2001; Lam and Zhang, 2003; Martin, 2008; Martin and Roodt, 2008; Meyer et al., 2002; Rayton, 2006; Yousef, 2002). It is a common practice in many construction management studies to examine whether the independent variables have significant

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effects on the dependent variables. In addition, placing an additional variable may clarify the nature of the relationship that has been established between the two variables (independent and dependent). Lazarsfeld (1955) has pointed out that it is quite common to explore the role of a third variable in a relationship once the relationship between two variables has been established. In recent decades, a number of studies in different contexts (Guleryuz et al. 2008; Iverson and Roy, 1994; Lok and Crawford, 2001; Malik, Wahid and Malik, 2010; Mathieu and Hamel, 1989; Michaels, 1994; William and Haze, 1986) have explored the mediation role of job satisfaction on organisational commitment. Recently, Chiu and Ng (2013) found that work group identification had significant positive effects on the two forms of organisational commitment (affective and normative commitment). Based on the argument in Ding, Ng and Wang (2013b), a further research question is to investigate whether a third variable would intervene in the relationship between work group identification and the two forms of commitment. The purpose of this paper is to examine whether job satisfaction has a mediation effect on the relationship between work group identification and the two forms of organisational commitment. Social exchange theory was used to explain the mediating role of job satisfaction on the relationship between work group identification and organisational commitment. The results of this study advances knowledge in construction/organisation literature by adding to the understanding of the mediation effect of job satisfaction on the relationship between work group identification and the two forms of organisational commitment within the construction industry.

The research targets were quantity surveyors working in the Hong Kong construction industry. The reason for selecting quantity surveyors as the study target was because the working nature, roles and job duties of quantity surveyors are more standardized as compared with other professionals. In other professions, the variation/deviation in their daily job duties implies that many other factors/variables would have an effect on the professionals' job satisfaction and the two forms of organisational commitment, which may also affect the result of the hypothesized relationships. Moreover, very few studies focusing on job satisfaction and organisational commitment were conducted in Hong Kong. This study aimed at filling this knowledge gap.

In the following sections, a literature review was conducted to clarify the theory and key concepts that have provided the underpinnings for the study. Following this, the research method would be explained including the mediation method used for data analysis. The findings and results would then be discussed and future research directions would also be presented.

Literature Review

Conceptual Background

Social exchange theory (SET) has been used to explain the relationship between work group identification and the two forms of organizational commitment. As mentioned by Blau (1964, pp.

91), social exchange referred to “*voluntary actions of individuals that are motivated by the returns they are expected to bring and typically in fact bring from others.*” The theory suggests that the exchange process is based on the premise that there are interactions between exchange parties and each party finds obligations to reciprocate the other party, though the nature of reciprocation is unspecified and cannot be bargained.

Within quantity surveying firms, quantity surveyors in different hierarchy positions are assigned to work groups to provide cost and contractual expertise for construction projects (Choi, 2006; Fellows, Liu and Cheung, 2003; Potts, 2008). Project tasks are divided among quantity surveyors within the work group. With this work group arrangement, exchange relationships are also built among work group members for sharing of knowledge and project tasks. Because a work group is also part of the organisation, the positive feeling of being part of the group would improve the employee’s feeling toward the organisation, and would develop a reciprocal behaviour that benefits the organisation. Organisational commitment was considered as an outcome of social exchange because it reflected a perception of the exchange quality (Van Knippenberg and Sleebos, 2006) in which the employee and the working organisation were required to fulfill their obligations to each other and established ongoing reciprocity. Hence, SET could be used to explain the linkage between work group identification and organisational commitment.

The mediating role of job satisfaction could also be explained using the social exchange theory. According to the theory, work group members seek a fair exchange relationship for goal attainment within the work group (project task completion). If work group members perceive their individual capabilities, experience and values could not be utilized for attaining the goal, the exchange relationships within the work group would be unbalanced, and these negative perceptions would also be extended to the organisation. In turn, the employees’ loyalty to the organisation and their willingness to stay would also decrease.

Work Group Identification and Organisational Commitment

Work group identification (WGI) was originally defined by Tolman (1943, pp. 142) as ‘*a personal cognitive connection between an individual and the work group. It is the individual’s perception of oneness with the group and the tendency to experience the group’s successes and failures as one’s own.*’ Generally speaking, work group identification is about the identification with the work unit in which individuals conduct most of their day-to-day job activities (Van Dick et al. 2008). This definition was adopted in this study.

The concept of organisational commitment was initially explored by Porter et al. (1974). Organisational commitment was characterized by ‘*...a strong belief in and acceptance of organizational goals and values; willingness to exert considerable effort on behalf of the organization, and define desire to maintain organizational membership*’ (Porter et al., 1974, p. 604). Allen and Meyer (1990) defined organisational commitment as ‘*a psychological state that binds the individual to the organization.*’ This

definition was employed in this study as it is considered the leading multidimensional concept to define organisational commitment in the past two decades. According to Allen and Meyer (1990), organisational commitment consisted of three dimensions: affective, normative and continuance dimensions. The affective commitment (AC) measured the employee's emotional attachment, identification with, and involvement in, the organisation. The normative commitment (NC) was about an employee's feeling of obligation to stay in the organisation, whereas the continuance commitment (CC) was the recognition of the cost associated with the employee leaving the organisation.

Researchers have studied the association between work group identification and organisational commitment in recent years. For instance, Coble (2004) found that in a multi-line finance service organisation, the employees' work group identification had positive influence on their organisational commitment level. However the validity of the constructs adopted was questionable, as secondary data were adopted for examining the relationship between the constructs. Moreover, the data gathered in the study were for the purpose of another study, and only affective commitment was explored in terms of organisational commitment. In the meta-analysis of 40 studies on the relationship between employees' attachment to a broad range of work-related attitudes and behaviour, Riketta and Van Dick (2005) reported that work group identification seemed to have a positive influence on organisational commitment. However the results were considered preliminary, as the number of analysed samples for conducting the meta-analysis was small.

Recently Chiu and Ng (2013) found that work group identification improves individual's job satisfaction, affective, and normative commitment to the organisation, in the context of quantity surveying profession in Hong Kong. However it did not examine whether job satisfaction had an effect on organisational commitment. This research further investigates the mechanism of how job satisfaction affects organisational commitment. As there was no empirical research to examine whether there was a mediator between work group identification and the two forms (affective and normative) of organisational commitment, this study tested whether job satisfaction was the mediator between work group identification and the two forms of organisational commitment. If the relationship between work group identification, and affective and normative commitment become non-significant after job satisfaction is put into the relationship, then job satisfaction would completely mediate the relationship between the variables. Otherwise, job satisfaction would only partial mediate the relationships.

Job Satisfaction

Hoppock (1935) defined job satisfaction as *'any combination of psychological, physiological and environmental circumstances that causes an employee to be satisfied with his/her jobs.'* Job satisfaction was a constellation of employees' attitudes about various job aspects (Lu, While and Barriball, 2005).

The facets included were generally related to the employees' feelings about the intrinsic and extrinsic job elements. Thus, the intrinsic-extrinsic dimension suggested by Weiss et al. (1967) was used to classify job satisfaction. Intrinsic job satisfaction (IJS) referred to the nature of job tasks and how people feel about the job task that they are assigned, whereas extrinsic job satisfaction (EJS) concerned other aspects that have little direct linkage with the job tasks (non-task characteristics), (Hirschfeld, 2000; Weiss et al. 1967).

Job satisfaction is related to organisational commitment (Steers, 1977). Many studies in various contexts have shown a positive relationship between job satisfaction and commitment (Huang and Hsiao, 2007; Martin and Roodt, 2008; Mathieu and Zajac, 1990; Meyer et al. 2002; Morrison and Robinson, 1997; Rayton, 2006; Yousef, 2002). In addition, some researchers found that job satisfaction is important in understanding the influence of a number of variables on organisational commitment. For instance, by using a causal modelling approach, Williams and Hazer (1986) found that the influence of some antecedents (age, pre-employment expectation, perceived job characteristics, leadership style) to organisational commitment was mediated by the effects of job satisfaction. Similar results were also obtained in other studies in various contexts such as Iverson and Roy (1994), Lok and Crawford (2001), Michaels (1994) and Taunton, Krampitz and Wood (1989). With the use of structural equation modelling, Guleryuz et al. (2008) found that job satisfaction has a mediation effect on the relationship between emotional intelligence and organisational commitment in the Turkish nursing industry. Malik, Wahid and Malik (2010) used a causal step test to examine the mediation effects of job satisfaction on role stressors and affective commitment in the bank industry in Pakistan. The results in the study showed that job satisfaction partially mediated the relationship between role stressors and affective commitment. Recently several studies have also shown that job satisfaction had a mediating effect on the relationship between transformational leadership and organisational commitment in different sectors (Afolabi, 2013; Hashemi et al., 2012; Mohamad, 2012). Based on these findings job satisfaction was considered as a possible mediator for a commitment-related research. However there was no empirical research to examine the mediating role of job satisfaction with respect to organisational commitment in the construction-related context. Hence this study attempted to bridge the above research gap.

The Mediation Test

Lazarsfeld (1955) pointed out that there was an increasing trend for researchers to explore the role of a third variable in a relationship once the relationship between two variables had been established. That is, whether the third variable would intervene in the relationship between two initial variables. As a result, the idea of mediation has obtained attention from researchers in recent years. In considering the mechanism of how the effects or relationships come into being, it is also important to understand the process that produces and explains the associations. According to Preacher and Hayes (2008), mediation is the process by which some variables exert

influences on others via intervening variables or mediators. Mediation occurs when a causal effect of a variable X on an outcome Y is explained by an intervening variable M (Ding, Ng and Li 2013a). Researchers in various disciplines (e.g. Ding, Ng and Wang 2013b; MacKinnon, 2008; Mallinckrodt et al., 2006; McLeod, Kosicki and Pan, 1996) have showed the importance of studying the mediation mechanisms. Taylor, MacKinnon and Tein (2008) pointed out that the mediation effect of a third variable was often studied in the field of organisational behaviour, psychology and sociology.

According to Baron and Kenny (1986), Judd and Kenny (1981) and Kenny (2011), the effects of mediation would be tested through three steps. Figure 1 shows the mediation model and the steps involved for testing the mediation effect.

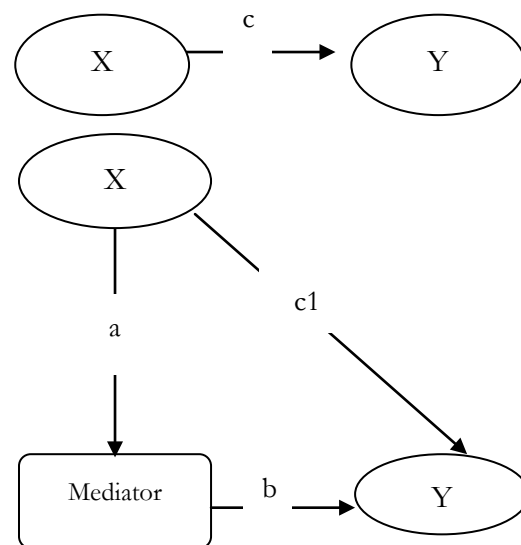


Figure 1: A simple mediation model (Adapted from Kenny, 2011)

- Step 1: To quantify that the independent variable X significantly affects the dependent variable Y. Path c represents the total effect of variable X on variable Y.
- Step 2: To quantify that the independent variable X significantly affects the proposed mediator. Path a represents the total effect of variable X on the proposed mediator.
- Step 3: To quantify that the proposed mediator significantly affects the variable Y, controlling for variable X. Path b represents the total effect of the mediator on variable Y, with variable X is in control. Path c1 is the direct effect of variable X on variable Y when the mediator is controlled.

The amount of mediation (M) which is sometimes called “*indirect effect*” is defined as “*the reduction of the effect of the initial variable on the outcome*” (Kenny, 2011). Hence, if the mediator completely mediates the X-Y relationship, the effect of X on Y controlling for M should be zero (i.e. the

coefficient of Path $c1 = 0$). Otherwise, it is considered that the mediator only partially mediates the X-Y relationship.

Research Hypotheses

Based on the above literature review, relevant hypotheses and sub-hypotheses have been developed as follows:

Hypothesis 1: Job satisfaction is a mediating variable between quantity surveyors' organisation-based work group identification and their affective commitment to the organisation.

Hypothesis 1.1: Extrinsic job satisfaction mediates the positive relationship between quantity surveyors' organisation-based work group identification and their affective commitment to the organisation.

Hypothesis 1.2: Intrinsic job satisfaction mediates the positive relationship between quantity surveyors' organisation-based work group identification and their affective commitment to the organisation.

Hypothesis 2: Job satisfaction is a mediating variable between quantity surveyors' organisation-based work group identification and their normative commitment (NC) to the organisation.

Hypothesis 2.1: Extrinsic job satisfaction mediates the positive relationship between quantity surveyors' organisation-based work group identification and their normative commitment to the organisation.

Hypothesis 2.2: Intrinsic job satisfaction mediates the positive relationship between quantity surveyors' organisation-based work group identification and their normative commitment to the organisation.

Research Method

Data Collection Method and Survey Sample

Because the mediation model was measured with scales, a quantitative approach with questionnaire survey was employed to collect data. This approach was adopted as it enabled the collection of a large amount of research data in a systematic matter, thereby increasing reliability and generalizability of the research findings. This study focused on Hong Kong construction industry, as it accounted for more than 4% of the GDP (Census and Statistics Department, 2012) and encompassed different types of professionals. In Hong Kong, chartered quantity surveyors were also one of the important players in the construction industry (Liu, Chiu and Fellows, 2007). As the standardized roles and job duties of chartered quantity surveyors could minimize the variation caused by job-related issues in mapping out the relationships between the variables,

the study target was confined to chartered quantity surveyors. The questionnaires have been sent to chartered quantity surveyors working in consultant companies in the Hong Kong construction industry. 'Chartered quantity surveyors' referred to quantity surveyors who are full members of the relevant professional institution. Each quantity surveyor was asked to complete one self-administered questionnaire. This survey administration method allowed the respondents' answers to be anonymous, reducing respondents' evaluation apprehension and making them less likely to edit their responses to align with how the researcher wanted them to respond (Nambudiri, 2012). The contact information of the survey sample was obtained from the membership records of the professional institutions.

The questionnaire has been designed to include all the variable measurement scales in a well-defined format. The scales used for measuring all variables (work group identification (WGI), job satisfaction, affective and normative commitment (AC and NC)) were the same as those that were used in Chiu and Ng (2013) and are shown in Appendix 1. A 7-point Likert scale, ranging from "strongly disagree" to "strongly agree", was used to record the response. Those scales were able to reflect the theoretical meaning of the concepts by practising quantity surveyors and their operational applicability for further replication. Moreover, those scales had acceptable reliability and validity as posited in Chiu and Ng (2013).

Data Analysis Methods

Reliability analysis was conducted to check the internal consistency of the statements in the measurement scales and the extent to which the factors can "accurately" measure what they were supposed to measure respectively. Hierarchical multiple regression (MR) analysis was then performed to identify the strength, significance, and associations among variables for two reasons. First, the number of survey responses attained was able to meet the minimum sample requirements for conducting a MR analysis. Second, MR was a simpler technique to serve the research objectives adequately.

Following this, mediation analysis was conducted. Several approaches have been developed for testing the mediation effect such as the causal steps test, Sobel Test, and the bootstrapping approach. Causal steps test has not been used in this study as the result produced was not precise and the calculation procedures were complicated (Kenny, 2009). Regarding the Sobel Test and bootstrapping approach, it was considered that the latter was more suitable for assessing the mediation effect in this study. This was because a bootstrapping approach would eliminate the assumption of the normality of the sampling distribution (Hayes, 2009; Mooney and Duval, 1993; Preacher and Hayes, 2004). In addition, a bootstrapping approach would also be applicable in small samples, which is the same sample requirement for multiple regression analysis (Preacher and Hayes, 2004). As a large sample size is not a necessary requisite for assessing the mediation effect in the bootstrapping approach, it was more appropriate for this study. Moreover, the

bootstrapped method has also been found to yield more accurate mediation results (Efron and Tibshirani, 1993; MacKinnon et al., 2002; Preacher and Hayes, 2004).

To implement the bootstrapping approach, SPSS 18.0 was utilized together with the macro program compiled by Preacher and Hayes (2004). There were two estimation methods in the macro program to produce bootstrapped percentile and normal distribution confidence intervals for indirect effects. Preacher and Hayes (2008) have suggested a minimum of 5000 resamples to be adopted, for bootstrap analysis to test the mediation effect of a variable. Thus, the 5000 resamples standard was followed for the mediation analysis. This approach was used to calculate the total and specific indirect effects of the independent variable (IV) on the dependent variable (DV), including the bias-corrected and accelerated bootstrap confidence intervals for the indirect effects (Afolabi, 2013).

Data Analysis

When the survey was closed, a total of 71 returned questionnaires were received from the sample of 509 contacted, achieving a response rate of 13.95%. With the small number of missing data that existed in only a few questionnaires, all returned questionnaires were valid for data analysis. The reliability analysis results are shown in Table 1. All the constructs were reliable as all alpha coefficients are above the acceptable standard of 0.70 (Netemeyer, Bearden and Sharma, 2003; Nunnally and Bernstein, 1994). In the 10 statements used for measuring work group identification, one statement has been eliminated after the reliability analysis, due to its consistency with other statements. The revised scale obtained an alpha coefficient of 0.851, indicating a good reliability score.

Table 1: Reliability Analysis for the measurement scales

Constructs		Cronbach's Alpha
Work Group Identification		0.852 (Original)
		0.859 (Revised)
Job Satisfaction	Extrinsic Job Satisfaction	0.893
	Intrinsic Job Satisfaction	0.904
Organizational Commitment	Affective Commitment	0.867
	Normative Commitment	0.733
	Continuance Commitment	0.804

Following the reliability analysis, the bootstrapping approach was adopted to calculate the mediation effect of job satisfaction on work group identification and the two forms of organisational commitment. A summary of the bootstrapping mediation results of Hypotheses 1 and 2 are provided in Table 2 and 3.

Table 2: Hierarchical Regression results for Mediation Pathways

	Coefficient	se	T	P
Total Effect of WGI on DV (c path)				
With AC as DV	0.404	0.1101	3.6678	0.0005
With NC as DV	0.458	0.1071	4.2810	0.0001
WGI to EJS (a path)	0.484	0.1053	4.5989	0.0000
Direct Effect of EJS on DV (b path)				
With AC as DV	0.180	0.1249	1.4404	0.0443
With NC as DV	0.228	0.1202	1.8997	0.0217
Direct Effect of WGI on DV (c1 path for EJS)				
With AC as DV	0.317	0.1249	2.5360	0.0135
With NC as DV	0.348	0.1203	2.8954	0.0051
WGI to IJS (a path)	0.474	0.1064	4.4690	0.0000
Direct Effect of IJS on DV (b path)				
With AC as DV	0.028	0.0265	1.2225	0.2460
With NC as DV	0.289	0.1226	2.7569	0.0150
Direct Effect of WGI on DV (c1 path for IJS)				
With AC as DV	0.391	0.1267	3.3131	0.2830
With NC as DV	0.322	0.1228	3.3997	0.0011

Table 3: Results of the Mediated Effects for Job Satisfaction

Independent Variable	Mediator	Dependent Variable	Mediation Effects for each Dependent Variable		
			Total Effect	Indirect Effect	Ratio
WGI	EJS	AC	0.404	0.484 * 0.180	21.6%
		NC	0.458	0.484 * 0.228	24.1%
	IJS	AC	(Not Significant as $p > 0.05$)		
		NC	0.458	0.474 * 0.289	29.9%

The regression results have showed that the effect of work group identification and the two forms of organisational commitment were statistically significant ($p < 0.01$), with the coefficient of 0.404 and 0.458 respectively. The two ‘a’ path results showed that relationship between work group identification and EJS and IJS were statistically significant ($p < 0.01$), with the coefficient of 0.484 and 0.474 respectively. The ‘b’ path from EJS to the two outcome variables of organisational commitment were also statistically significant at 0.180 and 0.228 ($p < 0.05$). However, the ‘b’ path from job satisfaction to affective commitment was not statistically significant. In considering the mediating effect of EJS, the direct effect of work group identification on both affective and normative commitment (‘c1’ path) were statistically significant at 0.317 and 0.348 respectively ($p < 0.05$).

The findings show that EJS had a mediation effect on the bivariate relationship between WGI and the two forms (AC and NC) of organizational commitment, whereas IJS only had a mediation effect on the bivariate relationship between WGI and NC. On this premise, except for hypothesis 1.2, all other hypotheses were supported. In addition, the results also showed that the mediation ratio ranges from 20% to 30%, which was rather weak. This indicated that the independent variables had a high degree of direct positive effects to either AC or NC (or both), even without the influences of job satisfaction or the job satisfaction level was not assured, as expected.

Discussion of Research Findings

Table 2 shows that there are significant relationships between work group identification and the two forms of organisational commitment. One possible reason is because work group identification could induce chartered quantity surveyors' positive feelings about their working experience within the work group and working environment, which is also part of the organisation. To a certain extent, quantity surveyors would extend their positive feeling to the organisation, which would motivate them to commit and stay in the organisation. In essence, the result of this study is also consistent with findings in Coble (2004) which has reported that work group identification had a positive influence on organisational commitment.

The basic value of understanding job satisfaction is the prediction of certain outcomes. A number of research studies (e.g. Huang and Hsiao, 2007; Mathieu and Zajac, 1990; Morrison and Robinson, 1997; Rayton, 2006; Yousef, 2002) have shown that job satisfaction provided a positive direct influence on organizational commitment. However, the survey results in this study have shown that job satisfaction has a mediating influence on the relationship between work group identification and the two forms of organization commitment. The result is also consistent with a number of previous research studies (e.g. Iverson and Roy, 1994; Lok and Crawford, 2001; Malik, Wahid and Malik, 2010; Price and Mueller, 1981; Williams and Hazar, 1986) which have suggested that the effects of various antecedents on organizational commitment were mediated through job satisfaction.

Concerning the mediation effect of job satisfaction, the results of this study have shown that except hypothesis 1.2, all other hypotheses were supported. That is, job satisfaction has been found to have a mediating influence on the relationships between work group identification and the two forms of organisational commitment. In the construction industry, quantity surveyors in different hierarchy positions are assigned to work in groups to provide cost and contractual expertise for construction projects (Choi, 2006; Fellows, Liu and Cheung, 2003; Potts, 2008). With the work group arrangement, cooperation and collaborative working relationships are common in quantity surveyors' daily working practices (Choi, 2006), which would impose positive feelings on the quantity surveyors and would also improve their intention to stay in the

organisation. However, even though work group identification has constituted quantity surveyors' positive attitudes towards the company, quantity surveyors could have different perception regarding their job duties, which would contribute to the difference in their commitment level. The rationale is that work group identification can improve quantity surveyors' understanding about the company (such as the company strategy, staff working environment, career path and promotion prospects etc.), which would lead to positive feelings about the company. However this does not mean that quantity surveyors are satisfied with their daily job task. If the task is rather difficult or the client is very demanding, quantity surveyors may have a negative perception of the task or even of other job-related issues (such as long working hours). To a certain extent this could reduce the positive effect that the work group identification has placed on the surveyor's intention to stay in the organization. This might explain why the mediating effect of job satisfaction occurs between work group identification and the two forms of organisational commitment.

For the mediating effect, some previous studies (e.g. Williams and Hazar, 1986; Mathieu and Hamel, 1989) have showed that the effect of independent variables on commitment was fully mediated by job satisfaction, while others have shown that the effect was only partly mediated (e.g. Guleryuz et al. 2008; Lok and Crawford, 2001; Mohamad, 2012; Malik, Wahid and Malik, 2010; Price and Mueller, 1981). While the independent variables used in those studies were not the same as in this study, and the studies were not conducted in the construction context, it is nevertheless of interest to examine the extent to which the results of this study aligned with previous findings. According to the data analysis results in this study, the influence of job satisfaction on the relationship between work group identification and the two forms of organizational commitment was rather weak. That is, a significant portion of the effects of the work group identification operated directly on commitment, rather than indirectly via their effects on job satisfaction. The results obtained from the current study were similar to those obtained by Price and Mueller (1981) and Lok and Crawford (2001). Nonetheless, there is still limited research about the mediating role of job satisfaction within the construction industry. Therefore, this study contributed to the subject matter.

Conclusions

Although the mediation role of job satisfaction has been widely studied in the field of organisational behaviour, psychology and sociology, few investigations have been conducted in the construction industry and the quantity surveying context. In this study, based on the social exchange theory, the mediation role of job satisfaction with respect to the relation between work group identification and the two forms of organisational commitment was empirically tested. A quantitative approach with questionnaire survey was adopted for achieving the research objectives. The data analysis results showed that job satisfaction had mediation effect on some relationships between work group identification and the two forms of organisational

commitment among quantity surveyors in Hong Kong. One possible reason is because of the negative perception of the job-related issues by quantity surveyors.

The above findings have some significant implications. Firstly, this study has challenged the traditional view that a direct effect of work group identification on organisational commitment is a complete picture in construction/organisation literature, by showing that the linkage could be intervened by an intermediate construct such as job satisfaction. Secondly, companies and senior managers should focus their efforts on improving quantity surveyors' job satisfaction, especially within the work group, such that the level of organisational commitment could be enhanced. The group leaders should organize some non-work related activities such as lunch gathering, happy hour etc. to enhance communication between work group members and to improve their working relationships. Whilst this study focused on the quantity surveying profession in Hong Kong, future study is recommended to replicate a similar study to other countries or extend the context to other construction professions such as architects or engineers, so that the findings could be generalized in a wider setting. Moreover, in addition to job satisfaction, there may also be other variables that mediate organisational commitment. Hence, the identification of other potential mediators should also be explored in future research.

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Appendix I: Measurement Scales

Measurement of Work Group Identification

1. When someone criticizes my work group, I feel like a personal insult.
2. I am very interested in what others think about my work group.
3. When I talk about my work group, I usually say 'we' rather than 'they'.
4. When someone praises my work group, I feel like a personal compliment.
5. If a story in the media criticized my work group, I would feel embarrassed.
6. The work group successes are my successes.
7. I like to work for my work group.
8. I feel strong ties with my work group.
9. I see myself as a member of my work group.
10. Being a member of my work group reflects my personality well.

Measurement of Job Satisfaction

1. The chance to do different things from time to time.
2. The chance to be "somebody" in the community.
3. The way my boss handles his men.
4. The competence of my supervisor in making decisions.
5. Being able to do things that don't go against my conscience.
6. The way my job provides for steady employment.
7. The chance to do things for other people.
8. The chance to tell people what to do.
9. The way the company policies are put into practice.
10. The pay and the amount of work that I do.
11. The chance for advancement on this job.
12. The freedom to use my own judgment.
13. The chance to try my own methods of doing the job.
14. The working conditions.
15. The way my co-workers get along with each other.
16. The praise I get for doing a good job.
17. The feeling of accomplishment I get from the job.

Measurement of Affective Commitment

1. I would be happy to spend the rest of my career in this organization.
2. I really feel as if this organization's problems are my own.
3. I do not feel like part of the family at my organization.

4. I do not feel emotionally attached to this organization.
5. This organization has a great deal of personal meaning for me.
6. I do not feel a strong sense of belonging to my organization.

Measurement of Normative Commitment

1. I do not believe that a person must always be loyal to his or her organization.
2. Jumping from organization to organization does not seem at all unethical to me.
3. One of the main reasons I continue to work for this organization is that I believe loyalty is important and therefore feel a moral obligation to remain.
4. If I got another offer for a better job elsewhere I would not feel it was right to leave my organization.
5. I was taught to believe in the value of remaining loyal to one organization.
6. Things were better in the days when people stayed with one organization for most of their careers.