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The Moderating Effect of Equity Sensitivity on Behavior-Outcome Relationships in Construction Dispute Negotiation

(The audience of the paper shall include both researchers and practitioners.)

by

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The Moderating Effect of Equity Sensitivity on Behavior-Outcome Relationships in Construction Dispute Negotiation

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Abstract

This study builds on Adam's Equity Theory through the examination of the moderating effects of equity sensitivity (i.e., a person's perception of what is equitable or inequitable) on behavior-outcome relationships among negotiators in construction dispute negotiation. First, an equity sensitivity construct is developed. This construct reveals that the majority of construction negotiators are entitleds, known as "takers" at the negotiation table. Moderated multiple regression (MMR) is used to test the moderating effects of equity sensitivity. The MMR models affirm that the nature of behavior-outcome relationships varies depending on the perception of equity. An entitled construction negotiator is found to be a versatile moderator who fosters satisfactory negotiation outcomes. The models show that negotiators are able to predict inequitable responses, and to take measures to forestall or deal with different inequitable situations. This study indicates the merit of further study of equity theory in the context of construction dispute negotiation. Future challenges in this area include the examination of the equity restoration responses of negotiators to create an equitable environment.

Introduction

Negotiation is a basic business survival skill. This skill, however, is seldom learned by construction practitioners as part of their formal education process but rather through experience. Negotiation in the construction business involves a significant level of interaction among negotiators including project managers, engineers and surveyors. During the interaction process, negotiators attempt to reconcile their differences and reach mutual agreement by discussing their preferences (Mintu-Wimsatt and Calantone 1996). This process often involves face-to-face interaction and the exchange of information, concessions or compromise. These are known as the essential ingredients of effective negotiations (Graham et al. 1994; Nolan-Haley 1992). Face-to-face interaction plays an important role in the early stage of negotiation. It involves a continuous flow of communication, and makes an impression on each of the disputing parties. Such interaction influences future negotiation processes and reinforces the negotiating relationship through continuous communication among negotiating parties (Graham et al. 1994). The exchange of information, concessions or compromise is often required for the needs and preferences of negotiators to be understood so that they can work in the same direction to obtain mutually beneficial negotiation outcomes (Pruitt and Kimmel 1977; Graham et al. 1994). Reciprocal interaction and exchange is fundamental to achieve negotiation success. Studies indicate that negotiation interactions and exchange processes tend to be characterized by reciprocal information exchange (Putnam & Jones 1982): “Integrative

messages tend to be matched with integrative responses; while distributive communication tends to elicit distributive responses" (Goering 1997). Negotiators are presumed to be most satisfied with fair negotiation (Goering 1997), and to prefer that input/outcome ratios be equal among negotiating parties (Allen and White 2002). However, negotiators' perception of what is "fair" can be arbitrary (Mintu-Wimsatt 2005). Some negotiators view certain elements as inputs, whereas others may view those same elements as outcomes (Tornow 1971), resulting in different perceptions of what constitutes equity and inequity (Foote and Harmon 2006). Negotiation in the construction industry is characterized by a high degree of fragmentation, with numerous individual participants striving to meet their own goals and needs, and expecting to maximize their own benefits (Newcombe 1996; Walker 2002). Negotiators in this field should have a fundamental need for fairness in their interactions with business partners. As equity is at the heart of the concept of fairness (Messick and Sentis 1983), a better understanding of how negotiators (or their negotiating parties) respond to equitable or inequitable situations, which can either reinforce or undermine mutual respect and tolerance (Maoz 2005), would help in the creation of an equitable environment in construction dispute negotiation. Equity sensitivity has proven to be a refinement of the original equity theory, as it may be more predictive and discriminant with regard to how individuals respond to feelings of inequity (Allen and White 2002). Equity sensitivity theory has been applied in research into business ethics (Kickul et al. 2005; Mudrack et al. 1999), job performance (Bing and

Burroughs 2001), employee attitudes and behavior (Kickul and Lester 2001; Shore et al. 2006), organizational citizenship behavior (Blakely et al. 2005) and buyer-seller relationships (Mintu-Wimsatt 2005). Knowledge specific to the context of construction dispute negotiation that has been generated from studies of equity sensitivity is relatively limited. An overview of the relevant studies can be found in the work of King and Hinson (1994) and Allen and White (2002). Using case studies of hypothetical business situations, King and Hinson (1994) conducted laboratory experiments to examine the roles of equity sensitivity and sex in explaining negotiator relationships and cognitive orientations, and negotiation outcomes. Allen and White (2002) investigated equity sensitivity in business negotiation in under-award situations. However, these researchers (King and Hinson 1994; Allen and White 2002) used data from business student samples rather than the data of business practitioners. Such data are salient given the complexities and dynamics of actual business negotiation (Mintu-Wimsatt 2005). Hence, this study takes a more pragmatic approach and investigates equity sensitivity and business negotiation using a sample of business practitioners in the construction industry. The objectives of this paper are threefold: (1) the development of an equity sensitivity construct of construction dispute negotiation to provide a framework to explain how negotiators in this field respond to equitable or inequitable situations, (2) the identification of generic types of negotiating behavior and negotiation outcomes in the construction industry and (3) the examination of the interrelationships among equity sensitivity, negotiating behavior

and negotiation outcomes.

Researches reveal that perceptions of equity affect negotiating behavior (Mintu-Wimsatt 2005; Vecchio 1981). This study advances the present understanding of equity sensitivity and negotiation through the investigation of behavior-outcome relationships. It is expected that the results of this study will offer insight into the prediction of the reactions of construction negotiators in equitable or inequitable situations, provide practical information for the design of strategies for responding to inequitable situations and inspire further equity research in the area of construction dispute negotiation.

Equity Sensitivity

The theoretical foundation of this study stems from Adam's equity theory (ET) (1963, 1965). This theory maintains that "negotiators will behave consistently when faced with perceptions of inequity. When perceived inequity exists, negotiators will work to restore equity" (Mintu-Wimsatt 2005). This suggests that negotiators will share a universal preference that input/outcome ratios be equal among negotiating parties (Foote and Harmon 2006). The basic notion of ET is to model how individuals respond to under-reward situations in an attempt to bring their equity ratio back into balance and manage their relationships with others. Specifically, when perceived inequity exists, tension is created among individuals, which motivates them to restore equity. Inequity is defined as an under-reward or over-reward situation. In an under-reward situation, an individual's input/outcome ratio is less than that of

the other party; in an over-reward situation, the individual's input/outcome ratio is greater than that of the other party. Based on the assumption that individuals are equally sensitive to equity, individuals who perceive themselves as either under-rewarded or over-rewarded will feel distress. The greater the distress an individual feels, the harder he or she will work to restore equity. The aim of equity restoration is to bring equity ratios back into balance (Mintu-Wimsatt 2005; Huseman et al. 1987; Sauley and Bedeian 2000; Allen and White 2002). This corresponds to what has been termed the "norm of equity" (Huseman et al. 1987), which has been identified in both laboratory studies and field research. However, ET has been criticized for its inability to predict exactly how individuals will respond to inequitable situations (Allen and White 2002; Greenberg 1990). Therefore, ET has been extended to include the element of individual differences. This has yielded the notion of equity sensitivity, which is an individual difference variable that explains how individuals react to inequity (Huseman et al. 1987). Equity sensitivity is related to "an individual's perception of what is and what is not equity and then uses that information to make predictions about reactions to inequity" (King et al. 1993, in Mintu-Wimsatt 2005). More recent developments in ET have been spurred by the development of the equity sensitivity construct in the fields of management and organizational behavior (Hartman and Villere 1990; Huseman et al. 1985; Huseman et al. 1987; King et al. 1993; Kickul and Lester 2001; Shore et al. 2006). Huseman et al. (1987) and Mintu-Wimsatt (2005) propose that equity sensitivity can be conceptually understood by identifying the characteristics

of individuals as points along a continuum (see Figure 1). On one end of this continuum are benevolents. These types of negotiators prefer their input/outcome ratio to be less than that of others. They are also known as “givers” who are willing to provide inputs to their counterparts. With a high tolerance for being under-rewarded, they prefer giving to receiving, and make a valuable contribution to the relationship. In addition, they express distress either when outcome/input ratios are equal or when their ratio is greater (Mintu-Wimsatt 2005; Sauley and Bedeian 2000; McLoughlin and Carr 1997; King et al. 1993; Huseman et al. 1987; Miles et al. 1989). Equity sensitives are located in the middle of the continuum. The notion of these types of negotiators of what constitutes equity comes close to the traditional norm of equity, as they desire balance in input/outcome ratios. They feel distress when under-rewarded and guilt when over-rewarded (Mintu-Wimsatt 2005; Sauley and Bedeian 2000; Huseman et al. 1987). On the other end of the continuum are the entitleds. These types of negotiators are known as “takers” who focus mainly on their own outcomes. They often take action to achieve their objectives that results in imbalance in input/outcome ratios. They are not concerned about the outcomes of others, and feel little or no obligation to reciprocate. They prefer getting to giving, and try to take more for themselves than they give to others (Mintu-Wimsatt 2005; Allen and White 2002; Sauley and Bedeian 2000; King et al. 1993; Huseman et al. 1987; Miles et al. 1989). Entitleds do not tolerate being under-rewarded, and are more tolerant of being over-rewarded than either equity sensitives or benevolents (King et al. 1993).

< Figure 1 here >

Research Model and Hypothesis

Negotiators distribute resources based on the contributions of their counterparts, and it is proposed that negotiation acts as equal reciprocal exchange (Goering, 1997; Leventhal, 1976). However, equity sensitivity suggests that benevolent negotiators are givers who are willing to put in more effort than are their counterparts (King et al. 1993), whereas entitleds are takers who focus on themselves and their outcomes (Mintu-Wimsatt 2005), and thus are less likely to cooperate than are their counterparts. Equity sensitivity refers to a person's perception of equity, and hence influences the choice of negotiation strategy of negotiators (Thompson 1990). King and Hinson (1994) found that equity sensitivity affects how negotiators evaluate their interactions with their opponents. As negotiation strategies vary according to negotiating behavior, which includes the response of negotiators to inequity, a relationship is hypothesized between equity sensitivity and negotiating behavior during negotiations. If equity sensitivity and negotiating behavior are related, then they will influence negotiation outcomes. This is supported by research that finds that individuals' perception of "degree of equity" is a major determinant of job effort, performance and satisfaction (Huseman et al. 1987; Stephen and Clarke 1998). Sauley and Bedeian (2000) give clues to explain how equity sensitivity affects outcomes. They suggest that giving is an internally controlled outcome because individuals can decide how much they wish to give. Conversely, getting is an external controlled outcome

because what one receives depends on what others are willing to give. Entitleds focused on what they can get from an exchange (externally controlled outcome), whereas benevolents are concerned with what they can give to an exchange (internally controlled outcome). In terms of outcome satisfaction, Huseman et al. (1987) found that benevolents express a high degree of satisfaction when under-rewarded, entitleds show a high degree of satisfaction when over-rewarded and equity sensitives prefer to be equitably rewarded.

In this study, the relationships among equity sensitivity, negotiating behavior and negotiation outcomes are established by hypothesizing negotiation outcomes as a dependent variable, negotiating behavior as an independent variable and equity sensitivity as a moderating variable. The research model is graphically shown in Figure 2.

< Figure 2 here >

Methods

Measures

To achieve the aforementioned specific objectives, a questionnaire survey was conducted. Three types of data were included: those of (1) the 16-item modified Equity Preference Questionnaire (EPQ), (2) the reported use of negotiating behavior and (3) the achievement of negotiation outcomes.

a. Equity Sensitivity

Equity sensitivity was measured using the 16-item EPQ of Sauley and Bedeian (2000). This

instrument is reliable and easy administered, and was designed to measure three groups of the equity sensitivity construct: benevolents, equity sensitives and entitleds (Sauley and Bedeian 2000). It was designed on the basis of four types of studies:

> 1) two pilot studies to purify the EPQ and to assess its reliability; 2) two validity assessment studies to examine the validity of the EPQ; 3) a laboratory experiment to determine the validity of the EPQ for predicting satisfaction with different reward conditions and 4) a test-retest reliability study to provide evidence on the consistency of measurement yielded by the EPQ across time. (Sauley and Bedeian 2000)

The attributes of the EPQ were modified to suit the context of construction dispute negotiation. A sample of these modified attributes is given in the Appendix.

b. Negotiating Behavior and Negotiation Outcomes

Types of negotiating behavior and negotiation outcomes were measured with 14 items developed based on a literature search (see Tables 2 and 3).

The respondents were required to indicate the degree of their agreement with the listed types of negotiating behavior on a Likert scale from 1 (strongly disagree) to 7 (strongly agree), and the degree to which they had achieved the listed negotiation outcomes on a scale from 1 (not achieved) to 7 (highly achieved).

Data Collection

A questionnaire survey was used to collect data from negotiators with experience in construction dispute negotiation. According to the sample planning proposed by Luck and Rubin (1987), the first step is to define the target population(s) to be sampled. In this study, the target populations included project managers, architects and surveyors. One of their typical tasks is to resolve disputes or claims through negotiation. Respondents were asked to reflect on one of their most recently completed negotiation cases when completing the questionnaire. They were selected from a list of construction business firms from the Builder Directory and the Web pages of professional institutes including the Hong Kong Institute of Architects (HKIA) and the Hong Kong Institute of Surveyors (HKIS). Simple random sampling was then used to draw a sample from each of the target populations. A similar approach has been successfully employed in the studies of Fang et al. (2004) and Fong and Chu (2006). The targeted respondents were contacted, and if they agreed to participate in the questionnaire survey, then the questionnaire was sent to them by post, fax or email, according to their preference. A total of 180 questionnaires were sent to the construction professionals of these target populations, and 83 respondents completed them, for a response rate of 46%. More than 50% of the respondents had more than five years' experience in construction dispute negotiation; 40% were employees of surveying consultants, 35% worked for main contractors, 20% worked for private developers and 5% worked for independent consultants.

Results

With the collected data, an equity sensitivity construct of construction dispute negotiation was developed using principal component factor analysis (PCFA). The suitability of the data was first assessed using the Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy and Bartlett's test. The value of the KMO measure was 0.668, which is greater than the required threshold requirement of 0.5 (Cheung and Yeung 1998; Holt 1997). The low significance of Bartlett's test suggested the suitability of the data set for PCFA. To shortlist factors, the eigenvalue-greater-than-1 principle was applied: factors having an eigenvalue greater than 1 were considered significant, and those with eigenvalue below 1 were discarded. In addition, rotation of the factor structures was performed to reduce the ambiguities that often accompany initial unrotated factor solutions. VARIMAX rotation was thus employed to simplify the factor structures and obtain a more meaningful factor solution (Hair *et al*. 1998). The PCFA results gave a factor structure that represented the equity sensitivity construct of construction dispute negotiation (see Table 1).

< Table 1 here >

Table 3 shows that the PCFA results did not yield exactly the same three-factor structure of the equity sensitivity construct (benevolents, equity sensitives and entitleds) suggested by Huseman et al. (1987) and Mintu-Wimsatt (2005); rather, a more detailed classification of Entitleds was obtained as follows: Factor 1: Entitleds – unwillingness to reciprocate; Factor 4: Entitleds – self-interest and Factor 5: Entitleds – press of outcome. To describe this five-factor

solution, confirmatory factor analysis was performed using AMOS. Following Blakely et al. (2005), the confirmatory fit index (CFI) and root mean square error of approximation (RMSEA) were employed to assess the model fitness. The CFI value and RMSEA were 0.905 and 0.066, respectively. These collectively indicated that the data fit the model adequately.

Having identified the equity sensitivity construct, negotiating behaviors and negotiation outcomes were then identified. To explore their data structures, PCFA was performed to consolidate the results and facilitate interpretation. With the same criteria as those used previously to extract the number of factors, a four-factor solution was developed for both negotiating behaviors and negotiation outcomes. The PCFA results also satisfied the statistical fitness criteria of the KMO measure and Barlett's test. The KMO values for the PCFA of negotiating behaviors and negotiation outcomes were 0.723 and 0.772 respectively, and both obtained low significance in Bartlett's test, which suggested the suitability of the data set for PCFA. Hair et al. (1998) suggested that a factor loading value of 0.60 is a good demarcation for variable selection within factors. Hence, variables with a loading of less than 0.60 were discarded to achieve a simpler structure with greater interpretability (Fava and Velicer 1992). The final factor structures of negotiating behavior and negotiation outcomes are given in Tables 2 and 3, respectively. A full explanation of these factor scales is given in the Discussion section of this paper.

< Table 2 here >

<Table 3 here >

Based on the five-factor solution of the equity sensitivity construct of construction dispute negotiation and the four-factor solutions of negotiating behaviors and negotiation outcomes, composite scales were devised. These scales are the composite measures created for each observation on each factor extracted via PCFA (Hair et al. 1998). New sets of variables were thus calculated for moderated multiple regression (MMR).

Next, the research model depicted in Figure 2 was statistically tested using MMR. This is a common statistical technique that is used to quantify the relationships between two or more predictor variables and dependent variables (Cobb et al. 1983; Berry and Feldman 1985; Lewis-Beck 1980). Specifically, this research model can be interpreted as follows: the predictive power of negotiating behavior (X_{NB}) for negotiation outcome (Y_{NO}) depends on equity sensitivity (X_{ES}). The significance of the moderating variable, X_{ES}, was tested using MMR. A hypothetical MMR model was constructed as follows.

$$Y_{NO_i} = a_0 + b_1 X_{NB_j} + b_2 X_{ES_k} + b_3 X_{NB_j} X_{ES_k} + \varepsilon, \qquad (1)$$

where Y_{NO_i}, X_{NB_j} and X_{ES_k} are the composite scales of negotiation outcomes (where i = 1, 2, 3 or 4), types of negotiating behavior (where j = 1, 2, 3 or 4) and equity sensitivity (where k = 1, 2, 3, 4 or 5), respectively. $X_{NB_j} X_{ES_k}$ is the moderating term.

MMR Procedures

To test the research model, the MMR procedure suggested by Jaccard et al. (1990) and Cohen et al. (2003) was adopted. This procedure comprises two steps: (1) formation of the moderating effect and (2) test of significance.

The first step of MMR is the formation of the moderating effect. This was achieved by establishing Equations (1) and (2).

$$Y_{NO} = a_0 + b_1 X_{NB} + b_2 X_{ES} + \varepsilon \,. \qquad (2)$$

With reference to Equation (2), X_{NB} and X_{ES} have an independent effect on the prediction of Y_{NO}; that is, they have a "constant" effect on the dependent variable (Hair et al. 1985). However, if the predictive power of X_{NB} for Y_{NO} depends on X_{ES}, then a moderating effect exists. This moderating effect can be examined if a moderating term, $X_{NB}X_{ES,}$ is included in Equation (2), that is, the hypothetical MMR model shown in Equation (1). The presence of a significant moderating effect is indicated by an SPSS stepwise regression procedure if the inclusion of the moderating term in the regression model (i.e., Equation 2) produces a significant change in the R^2 between Equations (2) and (1) (Jaccard and Turrisi 2003). In contrast, an insignificant moderating effect means that negotiating behavior has only a constant effect on negotiation outcomes (Jaccard and Turrisi 2003).

In this study, a total of eighty (5 x 4 x 4) MMR models were developed (devised from the combinations of the five items of the composite scale of the equity sensitivity construct, four

items of the composite scale of negotiating behavior and four items of the composite scale of negotiation outcomes). For each of these MMR models, the significance of the moderating effect was then tested based on the MMR procedure of Jaccard et al. (1990) and Cohen et al. (2003). Finally, six MMR models were found to be significant. A similar approach was successfully employed by Lim and Carnevale (1990), who examined ninety MMR models based on composite scales. The six significant models provide evidence that the equity sensitivity of negotiators significantly moderates the behavior-outcome relationship. To facilitate the interpretation of this finding, all of these models were combined to form an overall framework for further discussion (see Figure 3).

< Figure 3 here >

Discussion

This study aimed to examine the moderating effect of equity sensitivity on behavior-outcome relationships in construction dispute negotiation. With the data obtained from business practitioners in the construction industry, an equity sensitivity construct was first developed, with a five-factor solution. This finding provided a more detailed classification of Entitleds (see Table 1), which indicated that negotiators of this type are probably more uncooperative than the other types. They prefer to be over-rewarded and feel distress when they perceive that they are equitably rewarded or under-rewarded (Foote and Harmon 2006). One possible explanation for this finding is that the construction industry is often associated with the cutting

of corners, defects, poor workmanship and disputes. In the event of disputes or claims, the different interests, needs or goals of groups/organizations are often incompatible, and negotiators endeavor to maximize their own benefits. This finding supports that of industry-wide reviews (CIRC 2001; Egan 1998; Latham 1994) that the construction industry is characterized by confrontational contracting behavior, fragmentation and adversarial relationships. Negotiators in the construction business adopt different types of negotiating behavior to maximize their benefits. The results of factor analysis revealed the solution-focused approach (Factor 1), aggressive approach (Factor 2), cooperative approach (Factor 3) and dominating approach (Factor 4) to be the major types of negotiating behavior used by negotiators in construction disputes. These negotiators apparently adopt pragmatic approaches to resolve negotiation issues, such as the solution-focused approach (Factor 1). This approach aims to create a collaborative rather than a competitive climate, focusing on the problem and getting both negotiating parties to work out a solution. It is an approach that can help to achieve a satisfactory solution for both negotiating parties (Hodgson 1996). In contrast, negotiators of construction disputes also reported using an aggressive approach (Factor 2) in their negotiations. Such negotiators may use distributive strategies to change the attitudes, attributions or actions of their counterparts, will tend to induce concessions from their counterparts (Walton and McKersie 1965; Baron and Richardson 1994) and often seek to achieve their goals at the expense of their counterparts (Graham et al. 1994; Rubin and Brown

1975; Rinehart 1992; Monge et al. 1997; Nolan-Haley 1992). An aggressive approach has a negative effect on the negotiation relationship, and limits information exchange in competitive negotiation settings (Olekalns et al. 1996). A bad impression is thus given, which affects future relationships (Frazier and Summers 1984). Cheating and using threats are probably the most "effective" ways of escalating a negotiation into a dispute and pushing a dispute into a deadlock (Hodgson 1996). In construction dispute negotiation, the power of the developer (or developer's representative) and contractor is often uneven. Threats are often used by a developer as a tool to express his power. However, the effectiveness of a threat depends on the credibility of the threatening party's intention to carry it out and the amount of damage (e.g., in an on-going business relationship) that it could cause (Hodgson 1996). A cooperative approach (Factor 3) can be adopted to achieve an outcome with which both sides feel satisfied. Such an approach involves a high level of information exchange, concession making, joint conflict resolution and integration (Bazerman et al. 2000; Graham et al. 1994; Pruitt 1981; Rubin and Brown 1975). Such interactions help in the maintenance of a positive relationship, and facilitate the achievement of mutual outcomes (Graham et al. 1994; Olekalns et al. 1996; Dozzi et al. 1996; Monge et al. 1997). This approach is highly related to reciprocity at the negotiation table. In the course of negotiation, negotiators tend to adjust their strategies or to make concessions in response to the perceptions of their negotiation counterparts. For instance, in pleasant conditions, negotiators expect more favorable negotiation outcomes and make more

concessions (Baron 1990). If one of the negotiating parties uses a cooperative approach, then the others are more likely to respond in the same manner. Conversely, if a negotiator appears to be aggressive, then his or her negotiation partners will respond aggressively. Luo (2002) indicated that cooperation is initiated because of the negotiator's desire to ensure future social exchanges and maintain an on-going business relationship. In the construction industry, there are a relatively small number of large local contractors and large number of small or medium local contractors. Therefore, the relationships among practitioners are often complementary, as larger contractors often subcontract work to small or medium contractors. The development of harmonious working relationships is absolutely essential to survive in the construction business. In the context of negotiation, it is thus important to establish a cooperative relationship in the early stage of negotiation: future reciprocity can then be reinforced and the cooperative approach be sustained indefinitely (Monge et al. 1997; Dabholkar et al. 1994; Mintu-Wimsatt and Calantone 1996; John and Jack 2005). Finally, the dominating approach (Factor 4) used by negotiators of construction disputes involves a high level of concern for self and a low level of concern for others (Rahim et al. 2000). Dominating negotiators go all out to achieve their goals by changing the attitudes, attributions or actions of their counterparts. In construction, this approach may be appropriate when a speedy decision is required or a routine matter is involved.

Four generic types of negotiation outcomes were classified by PCFA: Satisfaction (Factor 1);

Time saving (Factor 2); Effective information transmission (Factor 3) and Deterioration of relationship (Factor 4). Among these, the first three negotiation outcomes are considered functional, and the last is considered dysfunctional. Functional outcomes yield positive effects, including making concessions, building trust, fostering communication and saving time. Dysfunctional outcomes have negative effects such as the creation of hostility and distrust during the negotiation process. Factor 1 collectively describes satisfaction, which is delimited as satisfaction with successfully making concessions, improving relationships, building trust and facilitating communication. This negotiation outcome can be achieved if a dispute can be settled with a solution that satisfies both negotiating parties. In construction dispute negotiation, this implies that both parties motivate each other to provide better value by aligning each organizational objective with project objectives. Factor 2 is described as time saving. This factor refers to the efforts of each negotiation party to reduce future disagreements and increase the efficiency of negotiation. If a dispute becomes inevitable, then it is important to manage it positively to encourage early and effective settlement. Otherwise, the dispute will need to be resolved by expensive and time-consuming arbitration or litigation. Factor 3 is related to effective information transmission in construction dispute negotiation. Information is the set of data, facts or opinions that is directly related to the conducting of negotiations. This information can be transmitted through different communication channels such as face-to-face meetings or formal correspondence. Communication is an essential negotiation instrument, and

negotiation is impossible without each side understanding the other side's concerns (Nieuwmeijer 1988). Thus, effective information transmission can foster mutually beneficial solutions. Finally, a dysfunctional outcome, the deterioration of the relationship (Factor 4), was reported. Working relationships can deteriorate if serious problems arise such as claims for damages or other monetary issues. Relationships are likely to break down if both negotiating parties seek to maximize their own benefits without establishing an effective process for resolving important differences. This outcome often results from confrontational contracting behavior. It is well known that relationships are a prime factor in business dealings. This is particularly so in the construction industry, because developers will not invite contractors with whom they have bad relationships to tender for their projects. With skillful negotiation, ongoing business developments can progress and working relationships can be sustained.

Moderating Effects of Equity Sensitivity on the Behavior-Outcome Relationship

The results of MMR suggest that equity sensitivity plays a significant role in moderating the behavior-outcome relationship in construction dispute negotiation. We structure the discussion of Figure 3 based on the three major types of negotiators of construction disputes: (1) benevolent negotiators; (2) equity sensitive negotiators and (3) entitled negotiators.

Benevolent Negotiators

Benevolent negotiators have a greater tolerance for being under-rewarded and experience guilt

when they perceive that they are equitably rewarded or over-rewarded (Foote and Harmon 2006). Models 1 and 2 reveal that the inherent trait of benevolent negotiators positively moderates the relationships between (1) cooperative approach and time-saving negotiation outcome and (2) dominating approach and deterioration of relationship negotiation outcome, respectively. Specifically, Model 1 (Model 2) can be described as follows: the degree of achieving a time-saving (deterioration of relationship) negotiation outcome based on the adoption of a cooperative (dominating) negotiating behavior may be higher for negotiators with greater tolerance for being under-rewarded (i.e., benevolent negotiators). As mentioned, benevolent negotiators are the givers at the negotiation table. If benevolent negotiators adhere to norms of reciprocity such as engaging in and responding to cooperative behavior in the course of negotiation, then the entire negotiation process will be smooth (Rubin and Brown 1975, Graham et al. 1994; Purdy et al. 2000), and the efficiency of the negotiation will be improved. Model 2 provides further evidence of the moderating effect of benevolent negotiators. They think more of giving than receiving (Rychlak 1973), and do not ignore the needs and expectations of their counterparts. Otherwise, a dysfunctional negotiation outcome results.

Equity Sensitive Negotiators

Equity sensitive negotiators prefer that their input/outcome ratio be equal to that of their counterpart(s) (Sauley and Bedeian 2000; Allen and White 2002). Model 3 reveals that the

inherent trait of equity sensitive negotiators positively moderates the relationship between aggressive negotiating behavior and deterioration of relationship negotiation outcome. That is, the degree of the deterioration of the relationship based on the adoption of aggressive negotiating behavior may be higher for equity sensitive negotiators. According to Allen et al. (2004), equity sensitive negotiators insist on reaching a state of equity with regard to the outcomes they receive for the amount of inputs they expend compared to their counterparts doing similar work. If their input/output ratio is out of balance, then they will be motivated to get the ratio back into balance (Allen et al. 2004, Adams 1963, 1965). The findings of this study show that if these negotiators adopt an aggressive approach to restore their input/output ratio, then a climate of hostility and distrust develops.

Entitled Negotiators

Entitled negotiators are takers who prefer to receive more than they give (Sauley and Bedeian 2000). They often compare their own input/outcome ratio with that of their counterpart(s). In the negotiation process, they may experience distress if they are unable to get a better deal than their negotiation counterparts (Huseman et al. 1987). This perception may act as a catalyst for the improvement of the quality of negotiation outcomes. The inherent trait of entitled negotiators is found to be a significant moderator of the relationships between the dominating and the cooperative approach and satisfactory negotiation outcomes (see Models 4, 5 and 6).

Practical Implications and Further Research Areas

The increasingly complex nature of construction projects has led to a substantial increase in the number of disputes and claims (Egan 1998, Latham 1994). In practice, negotiation is usually considered to be the most efficient dispute or claim resolution method in the construction industry. Using the data of experienced negotiators of construction disputes, this study applied the concept of equity sensitivity to the study of construction dispute negotiation to investigate how negotiators react in equitable and inequitable situations. This research has important implications, as previous research reveals that perceptions of equity affect negotiating behavior (Mintu-Wimsatt 2005; Vecchio 1981). Most importantly, this study advances the present understanding of equity sensitivity and negotiation by extending its scope through investigating the relationship between negotiating behaviors and negotiation outcome. Specifically, it investigated the role of equity sensitivity in moderating this relationship. With this specific objective, an equity sensitivity construct was developed. This construct suggested that construction negotiators do not conform consistently to the norm of equity. It also appears to be relevant by explaining how negotiators actually perceive inputs and outcomes. These negotiators are most likely to be entitleds, who expect their input/outcome ratio to exceed that of their negotiating partner(s). This finding is in line with the proposition of Huseman et al. (1987) that "negotiators [will] react consistently to specific, but different, preferences they have for the balance between their outcome/input ratio and that of a comparison other." Second, using the equity sensitivity construct that was used to relate negotiating behavior and

negotiation outcomes, MMR revealed a total of six significant MMR models. These models explain how negotiators of construction disputes react to equitable or inequitable situation, and explain the moderating effects of these actions on behavior-outcome relationships. Among the three major classes of negotiators, entitled negotiators were found to be versatile moderators who fostered satisfactory negotiation outcomes in construction dispute negotiation. The findings have important practical implications for managers in the construction industry. They need to be aware that the majority of negotiators in construction are entitleds, who will behave less cooperatively than the other classes of negotiators. Negotiators should also take this into account when they design strategies for their negotiations. The significant MMR models in this study can also help negotiators to choose an appropriate type of negotiating behavior. For instance, as shown in Figure 3, Model 4 suggests that the adoption of the dominating approach would be appropriate for interactions with entitleds to achieve satisfying negotiation outcomes. Model 3 suggests that the deterioration of a relationship may result from the use of an aggressive approach by equity sensitive negotiators. Taken together, the six significant MMR models suggest that the contingent adoption of negotiating behavior or strategies is essential in construction dispute negotiation. Again, taking Model 4 as an example, this model reveals that the dominating approach is contingently effective for achieving satisfactory negotiation outcomes when used by entitled negotiators. In this connection, this study can also inspire negotiators in the construction industry to take a closer look at the effects that equity sensitivity

appears to have on behavioral responses and outcomes. Finally, the findings of this study merit further research into equity theory in business negotiation. For example, future research could predict negotiators' options for bringing equity ratios into balance (Greenberg 1990; Allen and White 2002). This is known as equity restoration, and is critical to the creation of an equitable environment in construction dispute negotiation.

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Appendix. Sample of Questions (Equity Preference Questionnaire, EPQ) (modified from Sauley and Bedeian 2000):

Consider a recently completed negotiation case and indicate the degree of your agreement with the following statements.

In the negotiation process…

Q1. I prefer to do as little as possible while getting as much as I can from my counterpart.
Q2. I am most satisfied when I expend as little effort as possible.
Q3. I try to get out of the negotiation table.
Q4. If I can leave the negotiation table, I try to work just a little more slowly than my counterparts expect.
Q5. It is a smart negotiator who gets as much as he can while giving as little as possible in return.
Q6. It is really satisfying when I can gain something for nothing.
Q7. A wise negotiator is concerned about his own outcomes rather than his inputs.
Q8. When I have completed my task, I help out other negotiation partners who have yet to complete their tasks.
Q9. Even if I reach a non-desirable negotiation outcome, I will still try to do my best to settle the dispute/claim.
Q10. If the negotiation has gone on a long time, I will probably quit.
Q11. I feel obligated to negotiate the best deal for my client.
Q12. My greatest concern is whether or not I can achieve a desirable negotiation outcome.
Q13. I prefer to handle many issues rather than one.
Q14. I feel uneasy when there is little work for me to do.
Q15. I become very dissatisfied if I handle few or no issues.
Q16. If the duties are equal among my negotiation partners, then it is better to deal with complex issues rather than a few issues.

Table 1. Equity Sensitivity Construct of Construction Dispute Negotiation

Equity Sensitivity Construct	**Factors**				
	1	**2**	**3**	**4**	**5**
Factor 1: Entitleds - unwillingness to reciprocate					
I try to get out of the negotiation table (Q3).	.800	-.225	-.092	-.101	.720
If I can leave the negotiation table, I try to work just a little more slowly than my counterparts expect (Q4).	.738	-.129	.010	.198	.602
I prefer to do as little as possible while getting as much as I can from my counterparts (Q1).	.728	-.126	-.304	.114	.722
I am most satisfied when I expend as little effort as possible (Q2).	.707	-.025	.131	.117	.572
Factor 2: Benevolents					
I feel obligated to negotiate the best deal for my client (Q11).	.072	.777	.076	-.024	.686
When I have completed my task, I help out other negotiation partners who have yet to complete their tasks (Q8).	-.194	.743	-.064	.115	.641
Even if I reach a non-desirable negotiation outcome, I will still try to do my best to settle the dispute/claim (Q9).	-.251	.675	.300	.050	.613
I prefer to handle many issues rather than waste time (Q13).	-.234	.513	.098	.149	.609
Factor 3: Equity Sensitives					
I feel uneasy when there is little work for me to do (Q14).	-.102	.123	.847	-.050	.794
I become very dissatisfied if I handle few or no issues (Q15).	.150	-.008	.804	.098	.778
If the duties are equal among my negotiation partners, then it is better to deal with complex issues rather than a few issues (Q16).	-.213	.249	.654	.392	.756
Factor 4: Entitleds – Self-interest					
A wise negotiator is concerned about his own outcomes rather than his inputs (Q7).	.046	.071	.046	.794	.698
It is a smart negotiator who gets as much as he can while giving as little as possible in return (Q5).	.064	-.024	.067	.744	.593
It is really satisfying when I can gain something for nothing (Q6).	.441	.205	.064	.646	.660
Factor 5: Entitleds – Press of Outcome					
If the negotiation has gone on for a long time, I will probably quit (Q10).	.069	.014	-.026	.099	.809
My greatest concern is whether or not I can achieve a desirable negotiation outcome (Q12).	-.222	.252	.179	.192	.386

Table 2. Factor Structure of Types of Negotiating Behavior

Factor Structure of Types of Negotiating Behavior	**Factors**			
	1	**2**	**3**	**4**
Factor 1: Solution-focused approach				
If problems arise, then I am willing to ask questions.[(1)]	.826	-.121	.015	.222
When problems arise, I am willing to solve the dispute with my counterparts. [(3)]	.733	-.029	.347	-.027
I expect to achieve outcomes that are beneficial to my company. [(1-2)]	.707	.105	.202	.251
*At work, I am willing to assist my counterparts to solve problems. [(1)]	.497	-.473	.085	.293
*It is essential to build a trustful working environment. [(4)]	.477	-.053	.320	-.283
Factor 2: Aggressive approach				
I will cheat and threaten my counterparts if necessary. [(1) (6-7)]	.003	.799	.122	-.163
I will make excessive demands of my counterparts. [(1) (6-7)]	-.163	.701	-.084	.219
I will achieve my own goal only at the expense of the other parties. [(1) (6)]	-.033	.653	-.405	.151
*My greatest concern is to ensure my relatively favorable individual settlement. [(1) (6)]	.355	.493	.157	.247
Factor 3: Cooperative approach				
I like to cooperate with my counterparts. [(1) (6-7)]	.213	-.097	.774	.025
Once my counterparts' requirements are fully understood, I will try my best to satisfy their needs. [(1)]	.059	.041	.694	.337
I will discuss with my counterparts both of our needs and preferences. [(1)]	.387	-.001	.606	.110
Factor 4: Dominating approach				
I will change my counterparts' attitudes, attributions or actions to achieve my expected goal. [(1) (5)]	.095	.166	.093	.796
I will try to induce concessions from my counterparts. [(1) (5)]	.330	-.052	.359	.616

[*]Discarded item – factor loading < 0.60.

[(1)]Graham et al. (1994); [(2)]Monge et al. (1997); [(3)]Sherif et al. (1965); [(4)]Luo (2002); [(5)]Mintu-Wimsatt & Calantone (1996); [(6)]Monge et al. (1997); [(7)]Crane et al. (1999); [(8)]Goyal (2004).

Table 3. Factor Structure of Negotiation Outcomes

Factor Structure of Negotiation Outcomes	**Factors**			
	1	**2**	**3**	**4**
Factor 1: ***Integrative agreement***				
Concessions were made by the negotiation partners. [5]	.753	-.047	.133	.166
The relationship between parties was harmonious and the possibility of dealing with each other in the future increased. [3]	.680	.158	.283	-.121
Trust developed between parties. [1] [2]	.675	.313	.204	-.270
Communication between parties increased. [7]	.625	.304	.431	-.195
*Both parties' expectations were met. [4]	.526	.363	-.068	-.360
*My counterparts' strategy was adopted. [13]	.400	.310	.035	.393
Factor 2: Time saving				
Future disagreements are less likely. [6]	.146	.876	.137	-.139
The time required to solve problems was reduced. [11]	.085	.751	.332	.145
*The level of conflict was reduced. [6]	.381	.529	.151	-.233
Factor 3: Effective information transmission				
Information exchange increased.[8]	.227	.143	.780	-.142
A mutually beneficial solution was created. [9]	.167	.175	.767	-.066
*Organizational decision making improved. [10]	.173	.511	.573	.013
Factor 4: Deterioration of relationship				
A climate of hostility and distrust developed. [10]	-.310	-.115	.037	.772
My counterparts' needs were not clearly defined. [6]	.062	-.032	-.358	.724

*Discarded item – factor loading < 0.60.

[1]Plowman (1998); [2]Dozzi et al (1996); [3]Schawarz and Peutsch (2001); [4]Luo (2002); [5]Graham et al. (1994); [6]Friedman et al. (2000); [7]Turner (2004); [8]Gulati (1995); [9]Bennett & Jayes (1995); [10]Rahim (2002); [11]Sheppard et al. (1989); [12]Porter (1979); [13]Mintu-Wimsatt & Calantone (1996).