

Buyer Power and Supplier Relationship Commitment: A Cognitive Evaluation Theory Perspective

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Abstract

Our study investigates how buyer power affects supplier relationship commitment. When a buyer exerts power on a supplier, the supplier response can be either simple compliance or commitment at a deeper level. Theoretically, the latter pertains to a supplier's intrinsic motivation. Building on cognitive evaluation theory, our model proposes the distinctive yet interactive nature of reward power and coercive power, commonly considered together as mediated powers. It also posits that non-mediated powers (expert, referent, and legitimate) amplify the influences of reward and coercive powers. An empirical investigation, based on large-scale multi-national survey data, provides support for our theoretical arguments. We discuss the practical implications for how buyers can use reward and coercive powers to improve supplier relationship commitment.

Keywords: *power bases; interorganizational relationship commitment; cognitive evaluation theory*

INTRODUCTION

Buyers exert reward and coercive powers to facilitate desired actions from suppliers. Reward power—the ability to administer positive valence or decrease negative valence (French & Raven, 1959)—is often used by buyers to induce desired behaviors from suppliers. Leading automakers including Toyota, Honda, and General Motors grant annual awards to suppliers that attain desired outcomes (General Motors, 2016; Honda, 2015; Toyota, 2016). Buyers also use coercive power—the ability to punish if the power recipient fails to respond (French & Raven, 1959)—to pressure suppliers to comply with the buyers' requirements. For example, Wal-Mart made clear that it would continue doing business only with the suppliers that complied with its greenhouse gas emissions requirements (Rosenbloom, 2010).

When using reward and coercive powers, buyers need to consider their suppliers' relationship commitment (Brown, Lusch, & Nicholson, 1995; Zhao, Huo, Flynn, & Yeung, 2008). Suppliers would have preferred buyers that they prefer to work for because of the buyers' superior knowledge and respectable business values, philosophies, and norms (Liker & Choi, 2004). In this regard, the supplier's relationship commitment reflects its *intrinsic* motivation to contribute to the relationship with the buyer, over and above economic calculus. Such relationship commitment facilitates suppliers' collaborative behaviors, investments in buyer-specific assets, and integration with the buyer (Anderson & Weitz, 1992; Krause, 1999; Krause, Handfield, & Tyler, 2007; Krause, Scannell, & Calantone, 2000; Prahinski & Benton, 2004; Zhao et al., 2008).

Then, how can buyers affect suppliers' relationship commitment? While the extant literature generally agrees that reward and coercive powers can effectuate supplier compliance (i.e., instrumental commitment), research findings regarding their influence on intrinsic commitment (i.e., normative commitment) have been less clear (e.g., Brown et al., 1995; Maloni & Benton, 2000; Zhao et al., 2008). Reward and coercive powers are viewed as

extrinsic forms of reinforcement and, as such, they are thought to damage relational norms and cooperation between exchange partners (e.g., Benton & Maloni, 2005; Brown et al., 1995; Dapiran & Hogarth-Scott, 2003; Handley & Benton, 2012; Ke, Liu, Wei, Gu, & Chen, 2009; Maloni & Benton, 2000; Terpend & Ashenbaum, 2012; Zhao et al., 2008). However, recent studies have started to recognize the distinctive effects of reward and coercive powers in buyer-supplier relationships, calling for further research (e.g., Nyaga, Lynch, Marshall, & Ambrose, 2013; Pulles, Veldman, Schiele, & Sierksma, 2014). Moreover, the extant research has not yet investigated how distinctive power sources interact each other to affect suppliers' relationship commitment. Buyers can use reward power in conjunction with coercive power in practice, but it is unclear how this joint use of both powers affects supplier relationship commitment. In addition, the literature differentiates non-mediated powers (expert, referent, and legitimate) from mediated powers (reward and coercive). Such non-mediated powers can provide the contexts that may either amplify or hinder the effects of mediated powers on suppliers' relationship commitment. While Gaski (1986) examined interrelationships among different power bases, interactions between buyer power bases and their effects on supplier relationship commitment has not yet been examined in the literature.

We adopt cognitive evaluation theory (CET) as the theoretical perspective to explain how reward and coercive powers of the buyer influence supplier relationship commitment. CET considers how social factors influence intrinsic motivation (Deci, 1975; Deci & Ryan, 1985; Ryan & Deci, 2000). It helps us distinguish between reward and coercive powers and understand how they interact with each other and other types of powers that are non-mediated to influence intrinsic relationship commitment (see Figure 1). By developing theoretical arguments based on CET and using a large-scale multinational dataset, we try to answer the following research questions. What are the distinctive effects of the buyer's reward and coercive powers on supplier relationship commitment? How do reward and coercive powers

interact with each other? How do non-mediated powers serve as the contexts that moderate the effects of reward and coercive powers?

-- FIGURE 1 ABOUT HERE --

Our investigation offers a more comprehensive understanding of the relationships between buyer power and supplier relationship commitment. The contribution of our study is three-fold. First, our study contributes to the body of research on power by applying CET and revealing the distinctive effects of reward and coercive powers on relationship commitment. Second, our study investigates the interactions among different types of power. Third, by conducting a large-scale empirical study that encompasses Asia and the United States, we increase the external validity of our findings and attempt to resolve the previously inconclusive effects of reward and coercive powers.

THEORETICAL BACKGROUND

Power and Relationship Commitment in Buyer-Supplier Relationships

First introduced more than 50 years ago, French and Raven's (1959) classification of power bases—reward, coercive, legitimate, referent, and expert—has been widely used in general management and supply chain management research (Benton & Maloni, 2005; Rahim, Antonioni, & Psenicka, 2001; Terpend & Ashenbaum, 2012). As listed in Table 1, the five power bases are often grouped as mediated and non-mediated powers (Brown et al., 1995; Ke et al., 2009; Maloni & Benton, 2000). Use of mediated powers involves deliberate attempts to reinforce specific actions from the target and relies on *extrinsic* forms of motivation (Benton & Maloni, 2005; Brown et al., 1995; Handley & Benton, 2012b). Non-mediated powers, in contrast, are not intended to bring about specific actions from the target. Rather, they rely on the *intrinsic* motivation of the target (Brown et al., 1995; Handley & Benton, 2012b; Kreps, 1997).

-- TABLE 1 ABOUT HERE --

The effectiveness of the buyer's powers in facilitating the desired supplier behaviors depends on the extent to which such powers can motivate the supplier to maintain its relationship with the buyer. The literature has focused on relationship commitment as a reflection of a firm's motivation to develop and sustain a long-term relationship with its supply chain partners (Anderson & Weitz, 1992; Brown et al., 1995; Moore, 1998; Zhao et al., 2011). More specifically, Caldwell, Chatman, and O'Reilly (1990) suggest two types of organizational commitment: instrumental and normative. Instrumental commitment, focused on compliance, occurs when one accepts influence to achieve a favorable reaction from another (Kelman, 1958). Normative commitment occurs when one accepts influence to satisfy one's own self-defining relationship, where the relationship itself is intrinsically rewarding (Kelman, 1958).

These conceptualizations of commitment were largely researched at the individual level until Brown et al. (1995) extended them to inter-organizational settings. Describing an organization's commitment to the relationship with another partnering organization (i.e., relationship commitment), they recognize that normative commitment is *intrinsic*, "as it is based on identification and involvement with the organization," while instrumental commitment is "driven by the *extrinsic* objects (i.e. rewards and punishments) mediated" by the partner organization in the relationship (Brown et al., 1995: 366). Thus, normative commitment reflects the extent to which the organization prefers to work with the partner organization because of intrinsically rewarding relationship attributes. In other studies, normative commitment is also known as affective commitment, which represents an individual's attachment to, identification with, and involvement in the organization (Cantor, Morrow, & Montabon, 2012; Meyer & Allen, 1997; Wichmann, Carter, Kaufmann, & Wilson, 2016).

Considering mediated powers (both reward and coercive powers) as an extrinsic

factor that influences motivation, Brown et al. (1995) suggest that the use of mediated power is *negatively* associated with *normative* relationship commitment but is *positively* associated with *instrumental* relationship commitment. Subsequently, it has been suggested that normative relationship commitment improves firm performance (Anderson & Weitz, 1992; Krause, 1999; Krause, Handfield, & Tyler, 2007; Krause, Scannell, & Calantone, 2000; Prahinski & Benton, 2004; Zhao et al., 2008), while instrumental relationship commitment has no significant effect on supply chain integration (Zhao et al., 2008) or a negative effect on performance (Brown et al., 1995). In this stream of research, the findings surrounding instrumental relationship commitment are comparatively more straightforward and intuitive. However, the findings around normative relationship commitment are more ambivalent. We question whether both types of mediated power (reward and coercive) would have a unilaterally adverse effect on normative relationship commitment. In our study, we focus on normative relationship commitment as the dependent variable because it has been regarded as “genuine” (Maloni & Benton, 2000:55) relationship commitment in the field of supply chain management and integral in affecting performance (Krause et al., 2007; Maloni & Benton, 2000; Zhao, Huo, Selen, & Yeung, 2011).

Framing Reward and Coercive Powers

Between mediated powers and non-mediated powers, mediated powers are what the buyer manipulates to manage suppliers. In that regard, it is important to consider their impact on relational commitment. This then raises the question of whether we consider them together as one construct called mediated power or separately as two constructs (reward and coercive) that may have differential effects. Our choice is to consider them separately.

The existing literature, in general, has considered them together. As discussed above, Brown et al. (1995) conceptualize mediated powers as an extrinsic factor and argue that both reward and coercive powers of supply chain partners can negatively influence relationship

commitment. Others, building on their work, have generally focused on the negative effects of reward and coercive powers (e.g., Benton & Maloni, 2005; Dapiran & Hogarth-Scott, 2003; Handley & Benton, 2012b; Ke, Liu, Wei, Gu, & Chen, 2009; Maloni & Benton, 2000; Terpend & Ashenbaum, 2012; Zhao et al., 2008). Overall, empirical findings about the roles of reward and coercive powers in buyer-supplier relationships have been mixed. On the one hand, there have been studies showing negative effects of mediated powers on buyer-supplier relationships (e.g., Brown et al., 1995; Dapiran & Hogarth-Scott, 2003; Handley & Benton, 2012b; Ke et al., 2009; Teimoury, Fesharaki, & Bazayr, 2010). Conversely, other researchers have found contrasting or insignificant effects of reward and coercive powers on buyer-supplier relationships (e.g., Benton & Maloni, 2005; Maloni & Benton, 2000; Terpend & Ashenbaum, 2012; Zhao et al., 2008).

Recent studies, therefore, have begun suggesting that reward and coercive powers should be considered separately. For instance, Nyaga et al. (2013) and Pulles et al. (2014) recognize the varied roles of reward and coercive powers in supply chain relationships. Departing from the past literature, Nyaga et al. (2013) posit the positive effect of reward power. Pulles et al. (2014) investigate the effects of reward and coercive powers separately on supplier resource allocation and trust. Given these recent findings regarding reward and coercive powers, we also consider them separately in the framing of our model. Reward power influences others through positive feedback and coercive power does that through punishment (French and Raven, 1959). In the buyer-supplier context, the buyer would use these external factors to control supplier behavior. Since we are interested in investigating how such external factors affect intrinsic motivation, we apply cognitive evaluation theory (CET).

Cognitive Evaluation Theory

CET considers the social and environmental factors that facilitate or undermine

intrinsic motivation (Deci, 1975). In particular, the theory focuses on people's fundamental needs for *autonomy* and *competence* as the two main conditions that promote intrinsic motivation. First, the theory proposes that people's fundamental needs for autonomy are satisfied when they perceive that they can regulate their behaviors. This is often referred as "internal perceived locus of causality" (deCharms, 1968: 27). The external forces that promote this internal perceived locus of causality enhance intrinsic motivation, whereas the external forces that promote "external perceived locus of causality" undermine intrinsic motivation (Deci & Ryan, 1980; Zuckerman, Porac, Lathin, Smith, & Deci, 1978). Second, CET argues that the external forces that promote feelings of competence increase intrinsic motivation, while those that undermine feelings of competence decrease intrinsic motivation (Fisher, 1978; Ryan, 1982). Examples of competence-enhancing external forces are reward and recognition that confirm capability (Amabile, 1993) and positive feedback (Deci, 1971). Deadlines (Amabile, DeJong, & Lepper, 1976) and surveillance (Lepper & Greene, 1975) are considered autonomy-destroying aspects of external forces. Threats, coercion, and negative feedback tend to be competence-destroying (Amabile, 1993; Deci & Ryan, 1985; Ryan & Deci, 2000).

Extending such tenets of CET to buyer-supplier relationships, we believe that suppliers are intrinsically motivated to maintain their relationships with the buyer as long as they perceive that they have autonomy and competence in managing the relationship in the long term. CET also emphasizes that intrinsic motivation is crucial for improving task performance, as intrinsic motivation is associated with enhanced interest and confidence (Ryan & Deci, 2000), creativity (Amabile, 1979; Deci & Ryan, 1991; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), and self-esteem (Deci & Ryan, 1995). More specifically, CET implies that a buyer's use of reward power acts as positive feedback and then enhances a supplier's perceived competence, while its use of coercive power destroys the supplier's

perceived competence and perceived autonomy. CET also helps us frame the role of non-mediated powers. As non-mediated powers are based on the power target's intrinsic motivation and self-determined choices (Brown et al., 1995; Handley & Benton, 2012b; Kreps, 1997), the buyer's non-mediated powers offer autonomy-supporting contexts that can provide a sense of autonomy to the supplier. A supplier can feel more autonomous when working with a buyer with high non-mediated powers because the supplier is committed to the relationship with the buyer on its volition. In contrast, the supplier may elect not to engage with a buyer with low non-mediated power. While this inaction is also a result of the supplier's autonomous decision, CET suggests that autonomy can be defined with respect to the agent's actual functioning (Deci and Ryan, 1985). Table 2 summarizes our CET-based framework of buyer powers. We employ CET in more depth as we engage in the development of the study's hypotheses.

-- TABLE 2 ABOUT HERE --

CET is an interpersonal-level theory (Deci & Ryan, 1985). We elevate the level of this theory to the inter-organizational context. Such "vertical theory borrowing" (Whetten, Felin, & King, 2009: 9) is viable when the organization can be regarded as a social actor (King, Felin, & Whetten, 2010). The organizational and individual level constructs exhibit similar functions even if they have dissimilar structures, where functions are "the causal outputs or effects of a given construct" (Morgeson & Hofmann, 1999: 254). In our study, the supplier's relationship commitment performs a function that is similar to an individual's intrinsic motivation. An intrinsically motivated individual continues to engage in an activity or a relationship without being forced or controlled by external parties (Deci, 1971). Similarly, the supplier with a high level of normative relationship commitment is willing to keep a long-term relationship with the buyer and proactively accommodate its needs without being forced by the buyer (Brown et al., 1995; Zhao et al., 2008). Due to such functional similarity

between normative commitment and intrinsic motivation, scholars have applied individual level motivational processes to the organizational and inter-organizational contexts (Brown et al., 1995; Caldwell et al., 1990; O'Reilly & Chatman, 1986). We follow this tradition and apply CET to investigate how the external factors (i.e., reward and coercive powers) influence the supplier's relationship commitment.

HYPOTHESIS DEVELOPMENT

Effects of Buyer's Reward and Coercive Powers on Supplier Relationship Commitment

Using CET as our lens, we posit that the buyer's reward power enhances the supplier's relationship commitment by providing a sense of competence and achievement. According to CET, social-contextual events such as positive feedback, communications, and rewards that contribute to the feelings of competence can enhance intrinsic motivation (Deci, 1975; Ryan & Deci, 2000). In particular, rewards are regarded as symbols of success and superior performance and can increase intrinsic motivation toward the task (Morgan, 1984). Specifically, reward power is grounded in the supplier's historical assessment of the buyer's ability to provide rewards (Zhao et al., 2008). Rewards administered by the buyer convey its affirmation of the supplier's competence in contributing to the buyer's competitive advantage. Therefore, the buyer's rewards are positive feedback that can elevate the supplier's perceived competence. Different types of rewards such as supplier awards, greater spend volumes, and extended-term contracts constitute positive feedback, and suppliers can recognize these as the material evidence of their competence (Terpend & Krause, 2015). For example, upon receiving the supplier award from its buyers Airbus and Boeing, Universal Alloy Corporation explicitly communicated the award as confirmation of its exceptional performance (Universal Alloy Corporation, 2016). Leading automakers including GM, Honda, and Toyota recognize top-performing suppliers with annual supplier awards and the award-winning suppliers highly publicize the awards as the evidence of their performance competence (General Motors, 2016;

Honda, 2015; Toyota, 2016). In sum, through the use of reward power, the buyer can enhance the supplier's sense of competence and therefore self-motivate the supplier to engage in a continued relationship with the buyer.

H1: The use of reward power by the buyer is positively associated with the supplier's relationship commitment.

In contrast, we argue that the buyer's coercive power can damage not only the supplier's sense of competence but also autonomy. CET maintains that threats, deadlines, punishments, and pressured evaluations can lead to the perception of an external locus of control (Amabile et al., 1976; Goudas, Biddle, & Fox, 1994; Ryan & Deci, 2000). As coercive power is exhibited through threats and punishments so as to control the supplier to engage in desired behaviors (Zhao et al., 2008), the buyer's frequent use of coercive power can shift the supplier's perceived locus of control from internal to external. This, in turn, will damage the supplier's sense of autonomy. Moreover, according to CET, negative feedback that "clearly signifies incompetence to the recipient will undermine intrinsic motivation" (Deci & Ryan, 1985: 61). Buyers often rely on coercive power to express dissatisfaction with their suppliers' performance and demand behavioral changes from suppliers (Zhao et al., 2008). Thus, the buyer's use of coercive power can be perceived by the supplier as negative performance feedback. It can damage the supplier's sense of competence and autonomy, which leads to lowered self-motivation to continue the relationship with the buyer.

H2: The use of coercive power by the buyer is negatively associated with the supplier's relationship commitment.

Two-way Interactions among Reward, Coercive, and Non-Mediated Powers

CET offers another possibility for revealing the previously overlooked complexity involving reward and coercive powers: their interactions with non-mediated powers. The positive influence of non-mediated powers on supply chain relationships has been found consistently in the literature (e.g., Brown et al., 1995; Benton & Maloni, 2005; Nyaga et al.,

2013; Zhao et al., 2008), and therefore, we focus on how non-mediated powers moderate the effects of reward and coercive powers on relationship commitment.

While reward and coercive powers are used to reinforce specific actions from the target, non-mediated powers (i.e., expert, referent, legitimate) are not based on the intention to bring about specific actions from the target (Benton & Maloni, 2005; Brown et al., 1995; Handley & Benton, 2012b). With non-mediated power, the power holder does not control the reinforcements (Tedeschi, Schlenker, & Lindskold, 1972) but relies on the intrinsic motivation of the target (Brown et al., 1995; Handley & Benton, 2012b; Kreps, 1997). The supplier under the influence of the buyer's non-mediated powers commits to the relationship with the buyer not because the buyer intentionally made it do so. Rather, the supplier chooses to commit to the relationship by accepting the buyer's values, norms, and non-manipulative influence (Brown et al., 1995; Zhao et al., 2008). Non-mediated powers essentially serve as informational stimuli that make the power targets perceive that their actions are beyond the power holder's control and therefore are autonomous (Dahlstrom & Boyle, 1994).

Enabling Interaction: Reward and Non-Mediated Powers. We argue that non-mediated powers can enable or unlock the potential benefits of reward power. Compared to mediated powers, non-mediated powers can provide more opportunities for choice and promote autonomy (Dahlstrom & Boyle, 1994). Laboratory experiment studies related to CET have found that feelings of competence increase intrinsic motivation much more strongly when the subjects also have a sense of autonomy (Fisher, 1978; Ryan, 1982). Amabile (1993) and Hennessey, Amabile, and Martinage (1989) also suggest that certain types of extrinsic factors (i.e. rewards) can interact synergistically with intrinsic motivation especially when intrinsic motivation is high. Therefore, the supplier's feelings of competence enhanced by the buyer's reward power will positively interact with the sense of autonomy when augmented by the buyer's non-mediated powers to further increase relationship

commitment.

Specifically, the buyer's non-mediated powers facilitate the social environment in which the supplier accepts the buyer's influence out of its own volition because the supplier perceives that the buyer's values and knowledge are inherently rewarding. This autonomy-supporting environment allows the supplier to make self-determined choices. Having options for making choices enhances intrinsic motivation (Zuckerman et al., 1978). If the supplier autonomously chose to work with the buyer to learn from its expertise, the buyer's positive feedback could further enhance the supplier's motivation to learn from the buyer (Sujan, Weitz, & Kumar, 1994). Keith, Jackson, and Crosby (1990) also find that expert power enhances the exchange counterpart's perceptions of self-control. The supplier can identify with the buyer (i.e., accepting referent power) because it regards the two firms as having similar values and norms (Brown et al., 1995; Zhao et al., 2008). This can enhance the relationship between the firms and promote the perception that they are interested in each other's success (Dahlstrom & Boyle, 1994; Mohr & Nevin, 1990), which further justifies the self-determined choice to keep the relationship with the partner. Also, when the supplier accepts the buyer's legitimate power, it regards the buyer's requests as a natural part of the buyer-supplier relationship (Zhao et al., 2008) and not as a controlling mechanism. Since the supplier autonomously chooses to accept the influence, its commitment to the relationship with the buyer is self-determined. In this context, the buyer's rewards can be recognized as a positive feedback (Amabile, 1993) and can further enhance the supplier's relationship commitment. In contrast, when a supplier works with a buyer with low non-mediated powers, the supplier may not be motivated to strengthen the relationship with the buyer. While this inaction is also a result of the supplier's autonomous decision, it does not induce any volitional actions from the supplier, and therefore, can be considered as being passive and providing the supplier with only a limited sense of autonomy. Deci and Ryan (1985) argue

that self-determination can be only be defined with respect to the actual functioning of a person. Therefore, we suggest that non-mediated powers can strengthen the positive effect of reward power on relationship commitment.

H3: The interaction between the buyer's use of reward power and non-mediated powers is positively associated with the supplier's relationship commitment.

Disruptive Interaction: Coercive and Non-Mediated Powers. The inherently controlling aspect of coercive power (Zhao et al., 2008) can lead to the power target perceiving that the power holder is choosing not to use other types of power. This autonomy-destroying aspect (Deci & Ryan, 1985) of coercive power can be even more damaging when the buyer has a high level of non-mediated powers because the use of coercive power can undermine the base of non-mediated powers (Gaski, 1986). A supplier under the strong influence of the buyer's non-mediated powers would be intrinsically committed to the relationship with the buyer. When the buyer resorts to coercive power in this context, the supplier can feel unexpectedly controlled and constrained by external forces (i.e., a perceived external locus of control). Unlike reward power, coercive power cannot be used to promote feelings of competence. Therefore, from the supplier's perspective, the buyer's use of coercive power toward an already intrinsically committed supplier can be strictly controlling. In sum, the sense of autonomy that could be provided by the buyer's non-mediated powers would be negated by its use of coercive power. In this case, the supplier may try to avoid the relationship (French & Raven, 1959) or behave opportunistically (Handley & Benton, 2012a), further damaging the positive influence of the buyer's non-mediated powers on the supplier's relationship commitment. In contrast, if the buyer has a low level of non-mediated powers, then the supplier's relationship commitment would already be low and, therefore, the disruptive interaction effect of coercive power would be limited. Moreover, the supplier may become dissatisfied with the relationship if it perceives the buyer is abusing coercive power (Molm,

1991). Therefore, we propose the following:

H4: The interaction between the buyer's use of coercive power and non-mediated powers is negatively associated with the supplier's relationship commitment.

Compensating Interaction: Reward and Coercive Powers. We also argue that the negative influence of coercive power can be curbed by the use of reward power. Commonly referred to as the “carrot-and-stick approaches” to motivation (Stone, Deci, & Ryan, 2009), simultaneous use of reward and punishment has been suggested by the operant conditioning literature as effective ways of stimulating behaviors (Honig, 1966; Skinner, 1963). Extant research on the effects of the carrot-and-stick approaches to motivation provides mixed findings. In experimental economics, the combination of reward and punishment has been found to promote cooperation and provision of public goods (Andreoni, Harbaugh, & Vesterlund, 2003; Rockenbach & Millinski, 2006; Sefton, Shupp, & Walker, 2007). Fehr and Schmidt (2007), however, find that the carrot (voluntary bonuses) is more effective than the carrot-and-stick (a combination of voluntary bonuses and fines) in inducing more work effort. In contrast, Dari-Mattiacci and De Geest (2010) argue that the threats of punishment can be more effective than rewards because the threats can be used multiple times without incurring the cost of providing rewards. Van der Klaauw and Van Ours (2013) also suggest that financial sticks are more effective than financial carrots in motivating unemployment benefit recipients to work. While these studies compare the use of rewards and punishments, they do not test the interaction between reward and coercive powers. Then how would the interplay between the carrot and stick affect intrinsic supplier commitment? Deci and Ryan (1985: 61) suggest that “negative feedback that facilitates one's future competence” may not be as deleterious as negative feedback with no future implications. Empirical studies report that negative feedback combined with rewards may not be as detrimental as negative feedback without rewards (Deci, Koestner, & Ryan, 1999). When coercive power is used in

conjunction with reward power, the supplier may perceive that the buyer is exercising its coercive power not just as a manipulation but also as a form of guidance to improve its competence. Finkelstein and Fishbach (2012), based on the dynamics of self-regulation, suggest that power targets tend to regard negative feedback as a signal for further improvement if they accumulate more knowledge about the tasks.

The buyer's coercive power may still reduce the supplier's sense of autonomy but it may not significantly decrease the sense of competence given the presence of the buyer's rewards. Thus, from the perspective of CET, the negative influence of coercive power can be offset by reward power. In support of this, Lewin (1935) suggests that to achieve conformity, the power holder should not only rely on negative valence through the threat of punishment but also provide positive restraining forces to prevent the power target from completely leaving the power holder's field of influence. Therefore, we suggest that the buying firm's reward power can reduce the negative impact of its coercive power on the supplier's relationship commitment by preventing the supplier from avoiding the relationship.

H5: The interaction between the buyer's use of reward power and use of coercive power is positively associated with the supplier's relationship commitment.

METHODOLOGY

Sampling and Data Collection

To test our hypotheses in a multi-cultural setting, we participated in international data collection efforts involving China, Hong Kong, South Korea, Taiwan, and the United States. Previous studies on power in buyer-supplier relationships have been largely limited to a single cultural context. Since power dynamics in buyer-supplier relationships could be significantly affected by national culture (Zhao et al., 2008), we cross-validate prior power study results by collecting data from multiple countries. Data collection from four East Asian regions with high Confucian values (Brook & Luong, 1999) and the United States allows

comparisons within similar cultures as well as between the countries with significant national cultural differences. The original questionnaire was written in English and then translated into Chinese (Mandarin, Cantonese, and Taiwanese) and Korean. To assure accuracy in translation, each translated version of the questionnaire was then back-translated into English and compared with the original English version to identify any possible discrepancies by country coordinators. This process was repeated until the questionnaires in different languages became consistent.

Each responding manufacturer was asked about its relationship with a major customer, which is defined as the one that accounts for the largest sales share of the responding manufacturer. Country coordinators agreed upon the standard guidelines regarding sampling and data collection. To begin with, target manufacturing companies were randomly selected from a sampling pool using directories of manufacturer associations and the yellow pages in each country/region. Each of the target manufacturers was subsequently contacted to identify the key informants who were knowledgeable about their company's processes and relationships with a major customer. They had the titles of supply chain managers, CEOs/presidents, plant managers, sales/marketing managers, and other senior directors/managers. The key informants were first asked about their willingness to participate in the survey. Then, a questionnaire was mailed with a cover letter explaining the objectives and the potential contributions of the study. Follow-up calls were also made to improve the response rate and clarify missing data. The combined response rate across the countries was 11.5% based on 1,229 valid responses received out of 10,712 manufacturers that were sent questionnaires. The number of respondents, response rate by country and respondent company profiles are shown in Table 3.

-- TABLE 3 AROUND HERE --

Measurement Instrument

All constructs in our study were adopted from the existing literature. The measures for the five bases of power (reward, coercive, expert, referent, and legitimate) were adapted from Zhao et al. (2008) and Brown et al. (1995). We then operationalized non-mediated powers as a second-order construct which consists of expert, referent, and legitimate powers. Since we investigate reward and coercive powers separately in our study, we did not operationalize a second-order construct for mediated power. The measures for relationship commitment were adopted from Zhao et al. (2008), who developed the scales based on Morgan and Hunt (1994) and Brown et al. (1995). The items measuring the bases of power and relationship commitment asked respondents to assess the use of power by their major buyer and their commitment to that buyer, using a 7-point-Likert scale.

Since the questionnaire was answered by a single respondent in each company, we checked for single respondent bias using Harman's one-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The results of the test showed that there were six distinct factors with eigenvalues above 1.0, explaining 68.5% of the total variance. The first factor explained 29.0% of the variance, which was less than 50% and did not account for the majority of the total variance.

Reliability and Validity

Cronbach's alpha and composite reliability (CR) for each factor were computed to assess the internal reliability of the constructs. The extracted factors were consistent with the suggested measurement model, and the Cronbach's alpha and CR values were all above 0.70 (Kline 2000). Appendix A displays the factor loadings of each measurement item and the Cronbach's alpha of each construct (see Table 4 for CR values). To assess convergent validity, we conducted a confirmatory factor analysis (CFA). The CFA model with the five power bases and relationship commitment constructs (normed χ^2 (265) = 3.67, RMSEA = 0.05, TLI = 0.95, CFI = 0.96, standardized RMR = 0.05) showed an acceptable model fit (Kline 2000).

In addition, the composite reliability (CR) of each construct was greater than the average variance extracted (AVE) value for the construct, providing evidence for convergent validity (see Table 4). Regarding discriminant validity, the squared correlation between each construct and other constructs was smaller than the average variance extracted (AVE) for the construct (Fornell & Larcker, 1981). Moreover, both the maximum shared variance (MSV) and average shared variance (ASV) of each construct were smaller than the AVE of the construct (see Table 4), further rendering support for discriminant validity.

-- TABLE 4 AROUND HERE --

Assessing the Second-Order Factor of Non-Mediated Powers and the Single Factor of Mediated Power

For parsimony and to better focus on reward and coercive powers, we combined expert, referent, and legitimate powers into the second-order non-mediated powers construct. To validate the use of a second-order factor of non-mediated power, we followed the four-step procedure suggested by Mishra and Shah (2009). We compared the CFA model fits of the following four models: (1) the single factor model with 11 items for expert, referent, and legitimate powers, (2) the three-factor model with no correlation between each pair of the factors, (3) the three-factor model with pairwise correlation allowed, and (4) the second order model with three reflective factors of expert, referent, and coercive powers. As Table 5 shows, both Models 3 and 4 have the best model fit indices. Hence, we selected Model 4, which is parsimonious and better suits the purpose of our study.

Also, we checked the CFA model fit of (5) the single factor that combines the eight items for reward and coercive powers and compared it with the model fit of (6) the two-factor model with correlations allowed between the factors. Because there are only two first order factors (i.e., reward and coercive powers), the two-factor model with no correlation and the second order model could not be identified (Raubenheimer, 2004). Table 5 shows that Model

6 has an acceptable model fit while the model fit of Model 5 is unacceptable. This result also strengthens our argument for clearly distinguishing between reward and coercive powers.

-- TABLE 5 AROUND HERE --

Country Effect and Control Variables

Since the data were collected from multiple countries, there can exist unobserved heterogeneity across the countries. In this case, correlated observations within countries can bias ordinary least squares (OLS) estimates (Raudenbush & Bryk, 2002). To effectively control for the unobserved heterogeneity, we tested our hypotheses using multilevel moderated regression. We also included industry dummy variables to account for industry differences (Carey, Lawson, & Krause, 2011; Villena, Revilla, & Choi, 2011). Besides country and industry, other variables that can affect either relationship commitment, including supplier's firm size (yearly sales), supplier's dependency on the buyer (% of sales ratio), and duration of the buyer-supplier relationship (years), are included as control variables in our multilevel regression models. The supplier's firm size may influence relationship commitment since larger firms can have more resources that affect relative power (Casciaro & Piskorski, 2005; Pfeffer & Salancik, 2003). A supplier's dependency on the buyer has been suggested to increase the supplier's relationship commitment (Krause et al., 2007). The duration of the relationship could also influence relationship commitment (Carey et al., 2011).

ANALYSIS AND RESULTS

We employed multilevel regression using Stata 14.1 ("mixed" command) to test the hypotheses. Countries are defined as groups in our models. Full information maximum likelihood estimator was used to run the models (Singer & Willett, 2003). To minimize the effects of multicollinearity, we grand-mean-centered the power variables to create interaction terms, following the procedure for testing interaction effects suggested by Aiken and West (1991).

Before we tested our hypotheses, we first ran unconditional models with relationship commitment as the dependent variable and country as the group variable (Model 1 in Table 7). The inter-class correlation (ICC) values indicated that 14% of the variability in relationship commitment are attributed to the country effect, showing significant between-group variability. Next, we ran random intercept models, which are explained in the following sections.

Main Effects of Reward and Coercive Powers

Table 7 reports the results of multilevel regression analyses with random intercept models and heteroskedasticity robust standard errors (Models 2-4). We regressed the supplier's relationship commitment on power variables after controlling for the control variables and found significant main effects for non-mediated, reward, and coercive power bases (see Model 4 in Table 7). Consistent with previous studies (e.g., Maloni & Benton, 2000; Zhao et al., 2008), non-mediated powers had a strong positive effect on relationship commitment ($\gamma = 0.49, p < 0.001$). Reward power showed a significant positive main effect on the supplier's relationship commitment ($\gamma = 0.11, p = 0.02$) in support of H1. Coercive power, in contrast, had a significant negative main effect on relationship commitment ($\gamma = -0.15, p < 0.001$), supporting H2.

-- TABLES 6 AND 7 AROUND HERE --

Two-way Interactions among Power Variables

H3 posits that non-mediated powers positively moderate the impact of reward power on the supplier's relationship commitment. Model 4 in Table 7 shows that the interaction between reward power and non-mediated powers had a significant positive effect ($\gamma = 0.05, p = 0.02$) on relationship commitment, supporting H3. Hypothesis 4 suggests a negative interaction between coercive and non-mediated powers. The interaction between coercive power and non-mediated powers had a marginally significant negative effect ($\gamma = -0.03, p =$

0.05) on relationship commitment, providing moderate support for H4. Figures 2 and 3 illustrate the interactions between reward and non-mediated powers and between coercive and non-mediated powers, respectively. To test H5, the interaction between reward and coercive powers was also analyzed. The interaction between reward and coercive powers had a significant positive effect ($\gamma = 0.12$, $p < 0.001$) on relationship commitment, supporting H5. Figure 4 displays this interaction.

-- FIGURES 2, 3, AND 4 AROUND HERE --

Post Hoc Analysis: Country Slope Variance

We checked whether the effects of reward and coercive powers are different across the countries. Previous mixed findings on the effect of reward and coercive powers may be attributed to country differences. Zhao et al. (2008) recognized that the power dynamics in buyer-supplier relationships could be significantly affected by national culture. The effects of reward and coercive powers might be stronger in high power-distance cultures, where people tend to accept power inequalities and the use of reward and coercive powers by more powerful parties (Hofstede, 1991; Randolph & Sashkin, 2002). Zhao et al. (2008) also noted that relationship commitment could be more easily developed in collectivist cultures due to the tendency to look for belongingness and relatedness (Griffith, Myers, & Harvey, 2006; Eaton & Louw, 2000).

After running random intercept models, we ran random slope models, which allow the slopes of reward and coercive powers to randomly vary across the countries. The slopes of the other independent variables were not considered to be random. The results from the random slope models indicate that the between-country variances of the slopes of reward ($\tau_{reward} = 0.0001$, $p > 0.1$) and coercive ($\tau_{coercive} = 0.007$, $p > 0.1$) powers on relationship commitment are negligible. Thus, we conclude that the effects of reward and coercive powers are similar across the countries.

DISCUSSION

To work with suppliers, buying companies resort to using both reward and coercive powers. Building on CET, our study investigates the varied influences of reward and coercive powers. It differentiates the competence-enhancing aspect of reward power and the competence-destroying aspects of coercive power (Deci & Ryan, 1985). We provide empirical evidence that reward power provides additional benefits by creating synergy with non-mediated powers while coercive power undermines the positive influence of non-mediated powers. We also show how the strong negative impact of coercive power can be curbed by reward power.

Contrasting the Effects of Reward and Coercive Powers

The results demonstrate that the buyer's reward power enhances the supplier's relationship commitment (H1), while its coercive power hampers it (H2). Although there have been several empirical findings that show positive influences of reward power on relationship commitment, these findings had been interpreted as being inconclusive (Benton & Maloni, 2005; Maloni & Benton, 2000) or as an artifact of a specific national culture (Zhao et al., 2008). Based on the data from five different countries, our study reveals that the differential effect of reward and coercive powers on relationship commitment is consistent across different countries. This is an important finding since supplier commitment, compared to supplier compliance, is a stronger predictor on performance (Brown et al., 1995; Zhao et al., 2008).

Therefore, reward power indeed operates differently from coercive power when applied to supplier relationship management. Reward and coercive powers should therefore not be simply bundled together as mediated powers, as have been done before (e.g., Brown et al., 1995; Dapiran & Hogarth-Scott, 2003; Handley & Benton, 2012b; Ke et al., 2009; Teimoury, Fesharaki, & Bazayr, 2010). Reward power, as a form of positive feedback to the

supplier, promotes a sense of competence and enhances the supplier's motivation to commit to the relationship. In contrast, coercive power, as a form of negative feedback, destroys the supplier's sense of autonomy and competence. This, in turn, disrupts its motivation to sustain a long-term relationship with the buyer and its willingness to meet the buyer's requirements.

For the buyer, a proper understanding of reward power is paramount to getting its suppliers to be fully committed to their relationship, beyond merely complying with requests (Wayne, Shore, Bommer, & Tetrick, 2002; Podsakoff, Todor, & Skov, 1982). With a theoretical argument based on CET and empirical support based on the multinational data, our study take a step toward identifying potential benefits of reward power in buyer-supplier relationships. Our study points out the need to re-evaluate the roles of reward power, as compared to those of coercive power, in enhancing relational outcomes, as many published studies have grouped them together as one construct under the label of mediated powers. We may need to reconsider trust (Hausman & Johnston, 2010), collaborative behaviors (Nyaga et al. 2013), and partner-specific resource allocation (Pulles et al. 2014) and opportunism (Handley & Benton, 2012). Furthermore, this study encourages future research to investigate effective design and administration schemes of how a buyer should dispense positive feedback to promote supplier commitment. For instance, should the positive feedback be task-contingent or performance-contingent? Should the feedback involve non-contingent rewards with positive feedback (Deci & Ryan, 1985)?

Non-Mediated Powers and Amplifying Effects

The positive influence of the buyer's reward power on the supplier's relationship commitment is, on the one hand, amplified with higher non-mediated powers (H3). On the other, the negative effect of coercive power on relationship commitment is increased under the high non-mediated powers of the buyer (H4). In the same token, the positive effect of reward power on relationship commitment is weakened under lower non-mediated powers

(see Figure 2). When a supplier can perceive autonomy in the relationship with the buyer, the buyer's non-mediated power can facilitate the effectiveness of reward power. The positive interaction between non-mediated powers and reward power aligns with the CET literature, in that rewards can be more effective when intrinsic motivation is high (Amabile, 1993; Hennessey et al., 1989). In contrast, non-mediated powers and coercive power can interact negatively as the autonomy-supporting environment created by non-mediated power is disrupted by the use of coercive power.

Our study brings to the fore the interactions among different types of power. Whereas past studies have focused on the main effects of power, our study addresses how the effects of reward and coercive powers can be moderated by non-mediated powers. For instance, Gaski (1986) investigates causal interrelationships among the five power variable but without considering interaction effects across different types of powers. The buyer's non-mediated powers (expert, referent, and legitimate) cannot be easily controlled or manipulated in the short term (French & Raven, 1959). As such, the present study demonstrates how non-mediated powers would provide an important relational context in which the buyer's reward and coercive powers become either more effective or more detrimental. In other words, non-mediated powers is the context that can reshape the influences of reward and coercive powers—we believe this recognition spells a significant point of departure. It provides an explanation for the previously inconsistent findings regarding the roles of reward and coercive powers in buyer-supplier relationships and the need for investigating more nuanced, contextual use of power in supply chain relationships.

One avenue for future studies could be on individual types of non-mediated powers that can augment the effectiveness of reward power or nullify the damaging effect of coercive power on buyer-supplier relationships. For example, Sahadev (2005) substantiates the positive effect of expert power on cooperation, communication, and conflict resolution, while

Terpend and Ashenbaum (2012) find that referent power is the most significant source of buyer power in determining supplier performance. Zhao et al. (2008) also report that expert and referent powers significantly affect relationship commitment but legitimate power does not. These studies imply that each component of non-mediated powers may have varying degrees of impact on intrinsic motivation for relationship commitment. These studies call for investigation of additional contexts that can alter the impacts of reward and coercive powers, such as buyer-specific, supplier-specific, or broader environmental contexts. Another related research area is on how to develop supplier-perceived expert and referent powers. Take, for instance, a supplier development program. A buyer's supplier development programs demonstrate the buyer's expertise, philosophies, values, and norms (Prahinski & Benton, 2004; Modi & Mabert, 2007) and may have profound implications for its expert and referent powers. It would be a fruitful endeavor to investigate the linkages between supplier development, supplier-perceived expert and referent powers, and the supplier's relationship commitment.

Curbing the Negative Influence of Coercive Power

The empirical support for H5 reveals that reward power can reduce the negative influence of coercive power on relationship commitment. If the effects of reward and coercive powers on suppliers were similar, as suggested by the past literature, there would be no interaction between the two. In line with Lewin (1935), reward power appears to be the restraining force against coercive power. This finding echoes the experimental results of complementarity between reward and coercive powers (Andreoni et al., 2003), in that cooperation is most successfully enforced when both rewards and punishment are available. Andreoni et al. (2003: 901) contend that "the stick can help by getting people to move away from perfect selfishness and to test the waters of cooperation. The carrot can then take over by encouraging further cooperation, rendering the stick a rarely used but necessary tool." In

other words, if coercive power (stick) is applied as a means to guide suppliers, reward power (carrot) should also be used as a necessary tool to support a supplier's competence.

While the buyer's reward power can reduce the negative effect of its coercive power, one might also surmise that coercive power can weaken the positive impact of reward power. This reverse argument might be plausible if the competence-destroying aspect of coercive power dominates the competence-enhancing aspect of reward power. To test this reverse argument, we split the sample into two groups where one group has buyers with stronger coercive power and the other group has buyers with stronger reward power. In both groups, the interaction between reward and coercive powers has a strong positive effect (high coercive power group: $\gamma = 0.12$, $p < 0.001$; high reward power group: $\gamma = 0.21$, $p < 0.001$) on relationship commitment, which does not support the reverse argument.

Depending on the maturity of buyer-supplier relationship, the interaction between reward and coercive powers may or may not happen. Based on the dynamics of self-regulation, Fishbach et al. (2010) contend that negative feedback will undermine commitment for new relationship partners who wish to evaluate the strength of their commitment. As the relationship deepens, however, relationship partners could become more committed to the relationship and wish to monitor the progress of their relationship by seeking more negative feedback and respond to it by increasing their efforts (Fishbach & Finkelstein, 2009). Therefore, it is plausible that a buyer's simultaneous administration of reward and coercive powers may shift from a negative interaction to a positive interaction as their relationship matures over time.

MANAGERIAL IMPLICATIONS

For practicing supply managers, our study points to the need for more careful application of reward and coercive powers. Unlike non-mediated powers, reward and coercive powers can be wielded (Carver & White, 1994) according to the intentions of the

supply managers at the buying company. Rather than using reward and coercive powers simply to induce desired behaviors from suppliers, supply managers should consider the competence-enhancing role of reward power and the autonomy/competence-destroying aspect of coercive power. By doing so, the managers can better motivate the suppliers.

The buyer's reward power has a positive impact on the supplier's relationship commitment, whereas an overemphasis on coercive power can damage future relationships with the supplier (Golicic & Mentzer, 2005; Maloni & Benton, 2000; Terpend & Ashenbaum, 2012; Zhao et al., 2008). In this regard, the positive interaction between reward and coercive powers delivers a practical message to supply managers: coercive power used in isolation can hurt the supplier's relationship commitment, but in combination with reward power it can be less damaging to relationship commitment. This finding can be particularly useful for buyers that use coercive power. Consider a situation where a buyer may have to exercise coercive power to address poor supplier quality, environmentally harmful practices, or ethical issues. For instance, Apple has enforced its supplier code of conduct to all suppliers to the point of terminating contracts with non-compliant suppliers (Apple Inc., 2016). In this case, Apple should also enact reward power to minimize the negative effect of the coercive power. For the same reason, if mandatory annual cost reduction is unavoidable via the use of coercive power, the buyer should consider combining that with a reward such as the "Supplier of the Year Award" and other forms of recognition.

Our findings on the moderating role of non-mediated powers has implications for supply managers. On the one hand, reward power can be more effective for enhancing the supplier's relationship commitment when the buyer has high non-mediated powers. On the other hand, coercive power can be even more damaging for the supplier's relationship commitment when the buyer with high non-mediated powers exercises it. Therefore, the buyer with high non-mediated powers should exercise caution when applying coercive power.

Further, the buyer with low non-mediated powers should be mindful of the potentially limited effectiveness of its reward power. This finding is particularly meaningful because buyers are now increasingly concerned with how they are being perceived by their suppliers in terms their working relations (Planning Perspectives, 2015). The supplier's perception of a buyer reflects not only the buyer's reward and coercive powers but also its non-mediated powers.

The buyer should keep in mind that the influence of reward and coercive powers on supplier relationship commitment, either positively or negatively, depends on the supplier's perception of non-mediated powers. For example, we suspect that a company such as Toyota, which is recognized as "the customer of choice" or "the most favored buyer" (Planning Perspectives, 2015), is effectively exercising its reward power in the context of non-mediated powers. We propose that if such a company, with high levels of non-mediated powers, were to exercise coercive power, the negative consequences would be worse. Therefore, buyers should understand carefully how they are being regarded by their suppliers in terms of non-mediated powers before attempting to influence them through coercive power.

LIMITATIONS AND CONCLUSION

Our study is based on the data collected from only five countries. Due to this limitation, we could not explicitly test the effects of national culture (e.g., power distance and individualism/collectivism). Instead, we examined slope variances of reward and coercive powers across the five countries. Future studies should utilize data collected from a larger number of countries and investigate the cross-level interactions between firm-level power variables and national-level culture variables to gain a deeper understanding of the role of power in different cultural contexts.

In addition, our study considers the influence of power exerted by the buyer. In many cases, however, the supplier may also hold power over the buyer (Bastl, Johnson, & Choi, 2013). The supplier may, in fact, have comparatively more power (i.e., intellectual properties),

or the buyer and the supplier both may have significant power over each other (Davis & Mentzer, 2006). Further research may investigate varying dynamics created by relative power differences between the buyer and the supplier.

Lastly, our study does not consider that there could be differences in the level of the buyer's power as perceived by the buyer and by the supplier. In other words, "power dissonance" (Flynn, Gruenfeld, Molm, & Polzer, 2011) may exist between two partner firms. The buyer can overestimate its relative power over the supplier while the supplier can underestimate it. How might this discrepancy in the perception of relative power affect various aspects of buyer-supplier relationships? The obvious limitation of our study is that the data are collected from only the supplier's side. Future research needs to collect dyadic data from both the supplier's and customer's sides and delve into the issue of differences in power perceptions to uncover more realistic yet complex dynamics of power in buyer-supplier relationships.

To enhance its competitive strength, a buyer tries to induce their suppliers to engage in various partnership behaviors. Building on CET, this study contends that a supplier's relationship commitment, as a key driver of partnership behaviors, represents its intrinsic motivation for a continued relationship and that the buyer's powers can facilitate or undermine the supplier's commitment. A deeper understanding of the interplay between buyer powers and supplier intrinsic motivation, therefore, would be crucial for effective supplier management.

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TABLE 1
Bases of Social Power

Classification	Power base	Definition
Mediated	Reward	<p>“Reward power depends on the ability of the power holder to administer positive valences and to remove or decrease negative valence” (French & Raven, 1959: 156).</p> <p>“Source retains ability to mediate rewards to target” (Maloni & Benton, 2000).</p>
	Coercive	<p>“Coercive power stems from the expectation on the part of the power recipient that he will be punished by the power holder if he fails to conform to the influence attempt” (French & Raven, 1959: 157).</p> <p>“Source holds ability to mediate punishment to target” (Maloni & Benton, 2000).</p>
Non-mediated	Expert	<p>“The strength of expert power varies with the extent of the knowledge or perception which the power recipient attributes to the power holder within a given area” (French & Raven, 1959: 163).</p> <p>“Source has access to knowledge and skills desired by target” (Maloni & Benton, 2000).</p>
	Referent	<p>“Referent power has its basis in the identification of the power recipient with the power holder” (French & Raven, 1959: 161).</p> <p>“Target values identification with source” (Maloni & Benton, 2000).</p>
	Legitimate	<p>“Legitimate power is defined as that power which stems from internalized values in the power recipient which dictate that the power holder has a legitimate right to influence the power recipient and that the power recipient has an obligation to accept this influence” (French & Raven, 1959: 159).</p> <p>“Target believes source retains natural right to influence” (Maloni & Benton, 2000).</p>

TABLE 2

Different Views on Power Bases in Supply Chain Relationships

Power Bases	Past Literature's View	Our Study's View Based on CET
Reward power	Manipulative/extrinsic	Competence-enhancing
Coercive power	Manipulative/extrinsic	Autonomy and competence-destroying
Non-mediated power	Non-manipulative/intrinsic	Autonomy-supporting

TABLE 3
Response Rates and Company Profiles by Country

Response Rates	Total	China	Hong Kong	South Korea	Taiwan	U.S.
Number of questionnaires sent	10,712	2,878	2,056	1,278	2,000	2,500
Number of valid responses	1,229	410	202	203	212	202
Response rate	11.47%	14.25%	9.82%	15.88%	10.60%	8.08%

Industry	Total (n = 1229)	China (n = 410)	Hong Kong (n = 202)	South Korea (n = 203)	Taiwan (n = 212)	U.S. (n = 202)
Arts and crafts	6 (0.5%)	4 (1.0%)	1 (0.5%)	0 (0.0%)	0 (0.0%)	1 (0.5%)
Building materials	53 (4.3%)	29 (7.1%)	3 (1.5%)	4 (2.0%)	4 (1.9%)	13 (6.4%)
Chemicals and petrochemicals	85 (6.9%)	38 (9.3%)	3 (1.5%)	19 (9.4%)	15 (7.1%)	10 (5.0%)
Electronics and electrical	222 (18.1%)	59 (14.4%)	33 (16.3%)	46 (22.7%)	66 (31.1%)	18 (8.9%)
Food, beverage, alcohol, and cigarettes	59 (4.8%)	19 (4.6%)	7 (3.5%)	15 (7.4%)	1 (0.5%)	17 (8.4%)
Jewelry	61 (5.0%)	1 (0.2%)	4 (2.0%)	1 (0.5%)	0 (0.0%)	0 (0.0%)
Metal, mechanical, and engineering	261 (21.2%)	146 (35.6%)	27 (13.4%)	41 (20.2%)	47 (22.2%)	55 (27.2%)
Pharmaceutical and medicals	31 (2.5%)	4 (1%)	1 (0.5%)	7 (3.4%)	11 (5.2%)	8 (4.0%)
Publishing and printing	49 (4.0%)	22 (5.4%)	2 (1.0%)	7 (3.4%)	2 (0.9%)	16 (7.9%)
Rubber and plastics	87 (7.1%)	27 (6.6%)	13 (6.4%)	7 (3.4%)	27 (12.7%)	13 (6.4%)
Textiles and apparel	140 (11.4%)	34 (8.3%)	79 (39.1%)	18 (8.9%)	6 (2.8%)	3 (1.5%)
Toys	16 (1.3%)	0 (0.0%)	11 (5.4%)	0 (0.0%)	4 (1.9%)	1 (0.5%)
Wood and furniture	32 (2.6%)	18 (4.4%)	2 (1.0%)	3 (1.5%)	3 (1.4%)	6 (3.0%)
Others	127 (10.3%)	9 (2.2%)	16 (7.9%)	35 (17.2%)	26 (12.3%)	41 (20.3%)

Sales	Total (n = 1211)	China (n = 410)	Hong Kong (n = 199)	South Korea (n = 203)	Taiwan (n = 212)	U.S. (n = 187)
<US\$5 million	256 (21.1%)	168 (41.0%)	25 (12.4%)	9 (4.4%)	34 (16.0%)	20 (9.9%)
US\$5 m to < US\$10 m	169 (14.0%)	71 (17.3%)	39 (19.3%)	22 (10.8%)	18 (8.5%)	19 (9.4%)
US\$10 m to < US\$20 m	161 (13.3%)	46 (11.2%)	38 (18.8%)	34 (16.7%)	21 (9.9%)	22 (10.9%)
US\$20 m to < US\$50 m	178 (14.7%)	49 (12.0%)	28 (13.9%)	54 (26.6%)	25 (11.8%)	22 (10.9%)
US\$50 m to < US\$100 m	154 (12.7%)	29 (7.1%)	26 (12.9%)	44 (21.7%)	30 (14.2%)	25 (12.4%)
US\$100 million or more	293 (24.2%)	47 (11.5%)	43 (21.3%)	40 (19.7%)	84 (39.6%)	79 (39.1%)

TABLE 4
Measures of Reliability and Validity

	CR	AVE	MSV	ASV
Reward power	0.785	0.478	0.444	0.219
Coercive power	0.890	0.669	0.372	0.093
Expert power	0.848	0.584	0.394	0.213
Referent power	0.903	0.757	0.387	0.224
Legitimate power	0.801	0.502	0.444	0.244
Relationship commitment	0.828	0.424	0.394	0.210

CR: Composite Reliability
 AVE: Average Variance Extracted
 MSV: Maximum Shared Variance
 ASV: Average Shared Variance

TABLE 5
Measurement Models for Non-Mediated and Mediated Power Constructs

Models	Normed χ^2 (df)	RMSEA (90% CI)	TLI	CFI	SRMR
<i>Non-mediated power</i>					
Model 1 (single-factor)	30.64 (43)	0.16 (0.15, 0.16)	0.52	0.62	0.11
Model 2 (3 uncorrelated factors)	10.23 (43)	0.09 (0.08, 0.09)	0.85	0.88	0.24
Model 3 (3 correlated factors)	2.37 (40)	0.03 (0.03, 0.04)	0.98	0.98	0.03
Model 4 (second-order factor)	2.37 (40)	0.03 (0.03, 0.04)	0.98	0.98	0.03
<i>Reward and coercive powers</i>					
Model 5 (single-factor)	12.69 (13)	0.10 (0.09, 0.11)	0.75	0.89	0.07
Model 6 (2 correlated factors)	3.95 (12)	0.05 (0.04, 0.06)	0.94	0.97	0.04

RMSEA: Root Mean Square Error of Approximation
 TLI: Tucker Lewis Index (also called non-normed fit index or NNFI)
 CFI: Comparative Fit Index
 SRMR: Standardized Root Mean Square Residual

TABLE 6
Descriptive Statistics

	Correlations					
	Reward Power	Coercive Power	Expert Power	Referent Power	Legitimate Power	Relationship Commitment
Reward power	1					
Coercive power	.456***	1				
Expert power	.265***	-.053	1			
Referent power	.327***	.045	.502***	1		
Legitimate power	.509***	.219***	.403***	.449***	1	
Relationship commitment	.267***	-.067*	.560***	.480***	.361***	1
Mean	4.575	3.863	5.272	4.526	4.95	5.603
Standard deviation	1.044	1.355	0.955	1.187	1.047	0.798

* $p < 0.05$, *** $p < 0.001$

TABLE 7

Results of Multilevel Regression Analyses Predicting Relationship Commitment

Dependent Variable	Model 1		Model 2		Model 3		Model 4	
Relationship Commitment	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
(Constant)	4.980***	0.168	4.194***	0.258	4.674***	0.180	4.514***	0.270
Industry dummy variables			Included		Included		Included	
Theoretical control variables								
Firm size (sales)			0.012	0.021	0.011	0.016	0.028**	0.010
Dependence (% sales)			0.005**	0.002	0.005**	0.002	0.002	0.001
Relationship duration (years)			0.007**	0.002	0.007**	0.002	0.003†	0.002
Power variables								
Reward power (H1)					0.363***	0.068	0.109*	0.046
Coercive power (H2)					-0.219***	0.023	-0.147***	0.031
Non-mediated power							0.494***	0.028
Interactions								
Non-mediated*Reward (H3)							0.055*	0.022
Non-mediated*Coercive (H4)							-0.029†	0.015
Reward*Coercive (H5)							0.115***	0.023
Random effects parameters								
Within country variance (σ^2)	0.831	0.089	0.800	0.079	0.716	0.058	0.516	0.023
Between country variance (τ_{00})	0.109	0.048	0.096	0.046	0.071	0.035	0.045	0.024
Log-likelihood	-1639.13		-1615.21		-1546.94		-1345.47	
Deviance (-2Log-likelihood)	3278.26		3230.42		3093.88		2620.54	
Deviance difference			-47.84		-136.54		-473.34	

† p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Unstandardized coefficients are reported.

Heteroscedasticity robust standard errors are used.

FIGURE 1

Conceptual Model Based on CET

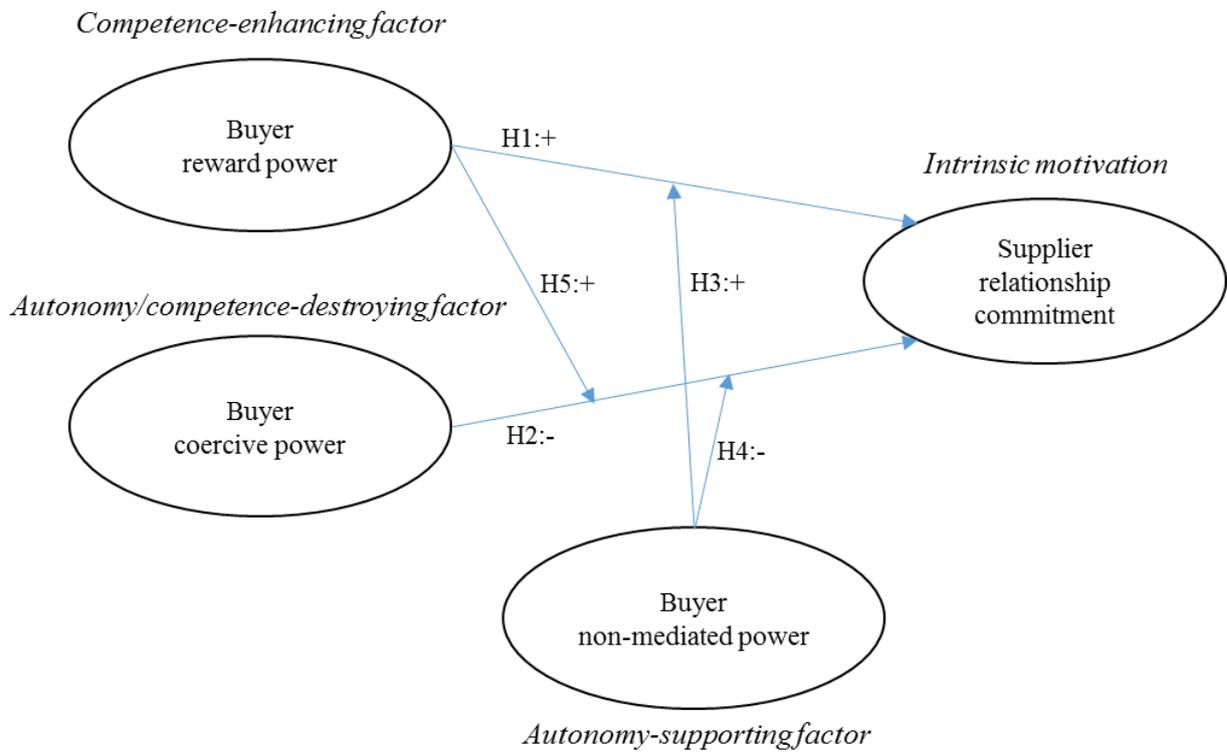


FIGURE 2

Interaction between Reward and Non-Mediated Powers

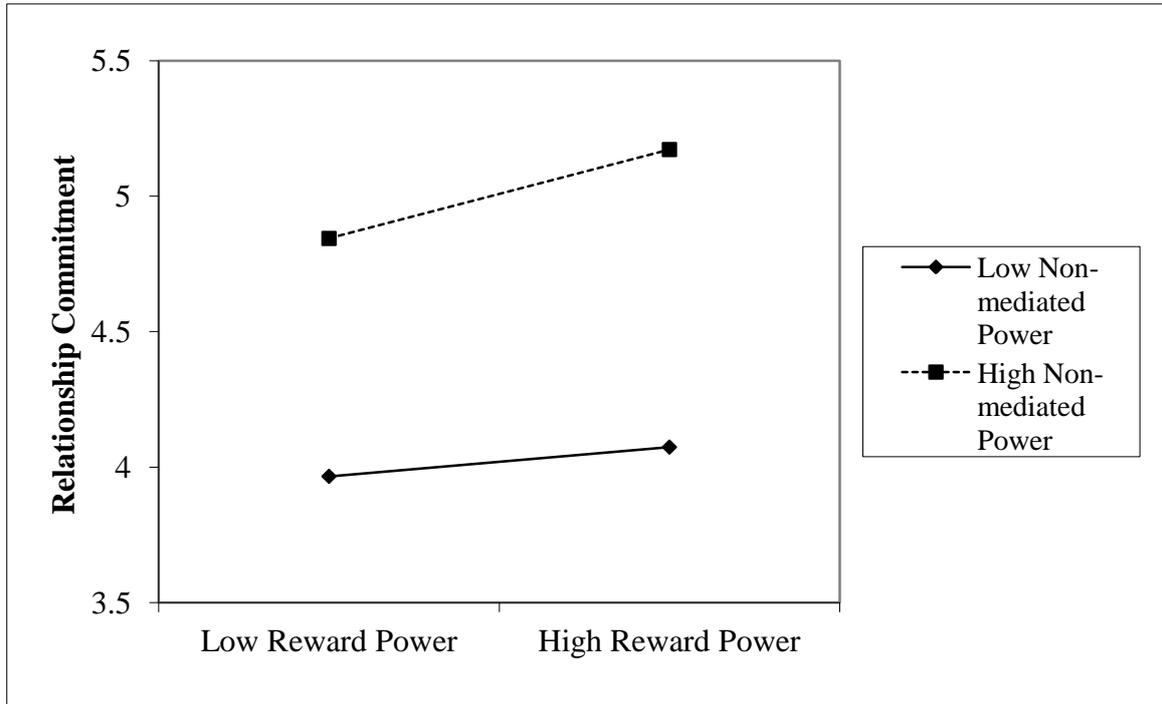


FIGURE 3

Interaction between Coercive and Non-Mediated Powers

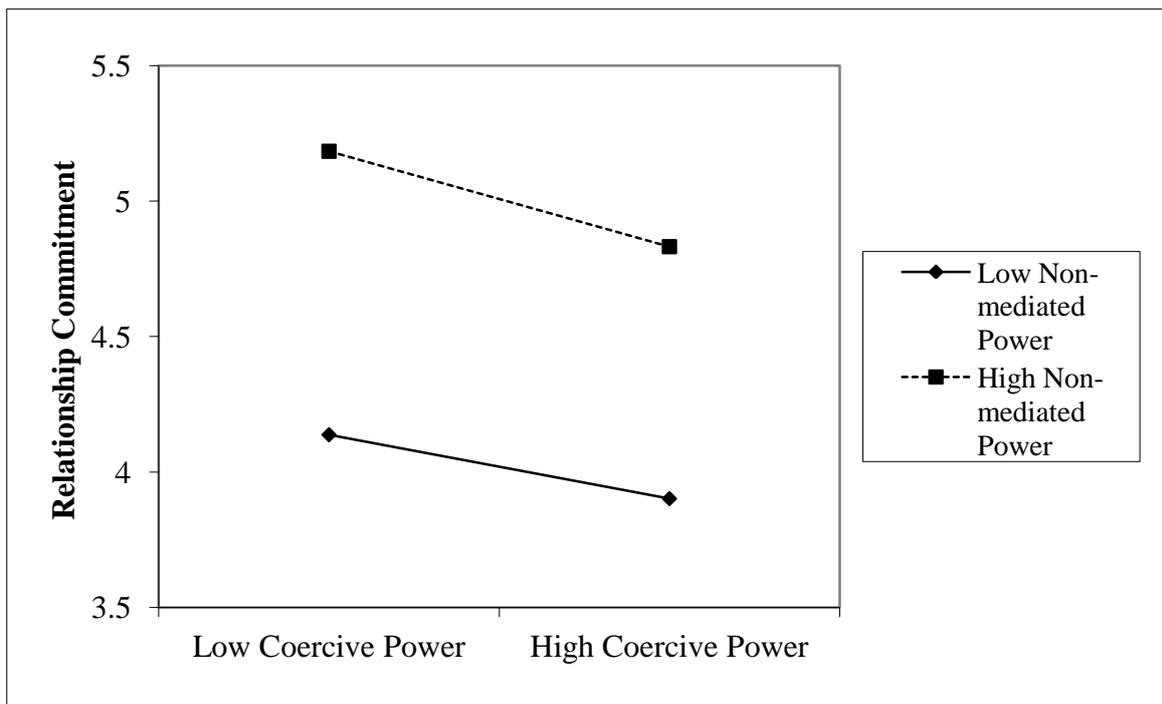
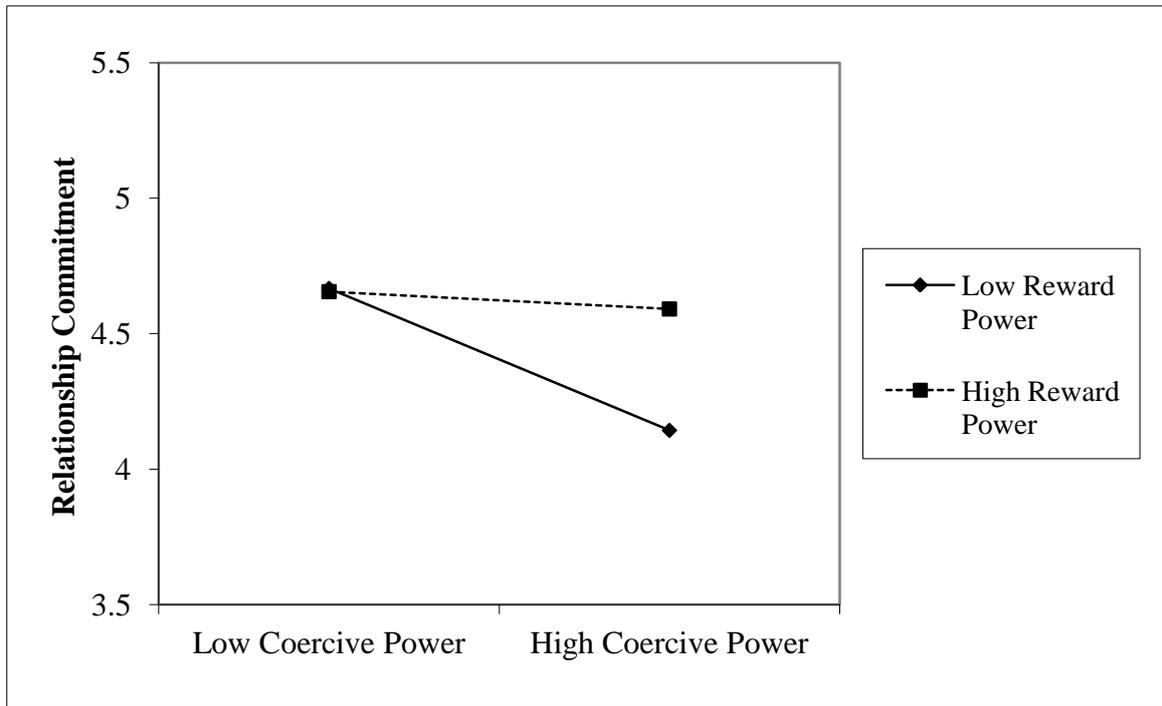


FIGURE 4

Interaction between Reward and Coercive Powers



APPENDIX

MEASUREMENT ITEMS WITH FACTOR LOADINGS

Power: The following statements are about you and your major customer concerning power. Please indicate the degree of agreement that you have with each statement (1 = strongly disagree; 7 = strongly agree).

<i>Reward power</i> (Cronbach's $\alpha = 0.77$)	
If we do not do what as our major customer asks, we will not receive very good treatment from it.	0.59
We feel that, by going along with our major customer, we will be favored by it on some other occasions.	0.82 0.75
By going along with our major customer's requests, we have avoided some of the problems other suppliers face.	0.56
Our major customer often rewards us, in order to get our company to go along with its wishes.	
<i>Coercive power</i> (Cronbach's $\alpha = 0.89$)	
Our major customer's personnel will somehow get back at us if they discover that we did not do as they asked.	0.75
Our major customer often hints that it will take certain actions that will reduce our profits if we do not go along with its requests.	0.85
Our major customer might withdraw certain needed services from us if we do not go along with its requests.	0.86
If our company does not agree to its suggestions, our major customer could make things more difficult for us.	0.82
<i>Expert power</i> (Cronbach's $\alpha = 0.85$)	
Our major customer's business expertise makes it likely to suggest the proper thing to do.	0.70
The people in our major customer's organization know what they are doing.	0.80
We usually get good advice from our major customer.	0.78
Our major customer has specially trained people who really know what has to be done.	0.77
<i>Referent power</i> (Cronbach's $\alpha = 0.87$)	
We really admire the way our major customer runs its business, so we try to follow its lead.	0.78
We generally want to operate our company in a way that is very similar to the way we think our major customer would.	0.89
Our company does what our major customer wants because we have very similar feelings about the way a business should be run.	0.83
<i>Legitimate power</i> (Cronbach's $\alpha = 0.82$)	
It is our duty to do as our major customer requests.	0.77
We have an obligation to do what our major customer wants, even though it isn't a part of the contract.	0.77
Since it is the customer, we accept our major customer's recommendations.	0.70
Our major customer has the right to expect us to go along with its requests.	0.65
 <i>Relationship commitment</i> (Cronbach's $\alpha = 0.84$): The following statements are about the relationship between your organization and your major customer. Please indicate the extent to which you agree with each statement (1 = strongly disagree; 7 = strongly agree).	
The relationship that our firm has with our major customer is something our firm is very committed to.	0.59 0.61
The relationship that our firm has with our major customer is something our firm intends to maintain indefinitely.	0.63
The relationship that our firm has with our major customer deserves our firm's maximum effort to maintain.	0.74
Our attachment to our major customer is primarily based on the similarity between its values and ours.	0.69 0.68
The reason we prefer our major customer to others is because of what it stands for, its values.	0.68
During the past year, our company's values and those of our major customer have become more	

similar.

What our major customer stands for is important to our company.
