A Path Analytic Approach Using Partial Least Square Technique to Explain the Effects of Power Imbalance in Buyer-Supplier Relationships

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ABSTRACT

In this paper, we develop a model that identifies and integrates relational variables and supporting justifications to better explain the dynamics of power imbalance in buyer supplier relationships using resource dependence theory. We propose that even though power imbalance may exist in buyer-supplier relationships, levels of partner commitment and trust play a significant role in reducing friction between partner firms. This paper tests the hypothesized model using partial least squares technique. The results of this study show that power imbalance positively impacts high relational embeddedness, which is completely mediated by buyer commitment and partially mediated by supplier commitment. Additionally, the relationship between power imbalance and high relational embeddedness is partially mediated by buyer trust and completely mediated by perception of supplier trust. High relational embeddedness improves overall organizational performance.

Keywords: Power Imbalance, Buyer Supplier Relationships, Supply Management, Partial Least Square Technique (PLS), Relational Embeddedness

INTRODUCTION

The subject of buyer-supplier relationships is an increasingly important topic for researchers and managers alike. With increased global competition, relationships between buyers and suppliers have become a critical strategic issue for management, as organizations have come to rely increasingly on outside suppliers. For example, in 1945, direct materials represented approximately 40 percent of a manufacturer's cost to produce an airplane. By 2000, that figure had risen to slightly over 65 percent. This example is representative of many industries where the percentage of direct material has increased and the percentage of direct labor decreased. (Burt, Petcavage, & Pinkerton, 2010). For every sales dollar collected by manufacturers, an average of 55 percent is paid to suppliers (Monczka, Handfield, Giupero, & Paterson, 2009). This fact underscores the need for managers to develop, nourish, and maintain relationships under asymmetrical conditions rather than myopically focusing on cost cutting in short term relationships. To foster such relationships, buyers and suppliers need to assess the level of authority, which is consequently attributable to of some form of commitment and dependence (increased support for resources) (Frazier, 1983). The level of dependence of one party is a function of the power of another party in a relationship (Emerson, 1962), which may lead to conflict if a party with a power advantage pursues a strategy that has undesirable consequences to the other party (Frazier, 1983). As a result, the subdued party often seeks strategies that decrease the impact of power differences.

Power imbalance or, alternatively, power asymmetry is '*the difference between two actors' dependencies, or the ratio of the power of the more powerful actor to that of the less powerful actor'* (Casciaro & Piskorski, 2005: pg 170). In a supply chain context, the 'actors' are buyers and suppliers. Power imbalance has been a subject of a number of different studies (Hingley, Angell, & Lindgreen, 2015). For example, Gundlach & Cadotte (1994) conducted a market channel simulation that explored the actions of parties engaged in asymmetric relationships. Geyskens, Steenkamp, and Scheer (1996) considered how trust and commitment were impacted by the stronger or weaker party in the relationship, which they defined as the relative difference in interdependence between buyer and seller. Benton and Maloni (2005) examined the impact that power imbalance in the buyer-supplier relationship has on supplier satisfaction. Ireland and Webb (2007) considered four basic strategies that buyer and suppliers will use to reduce the impact of power in strategic supply chains. More specifically, Hingley (2005a, 2005b) supported by other researchers (Cox, Lonsdale, Watson, & Qiao, 2003) stressed the importance of simultaneous existence of relational factors and power imbalance by UK agri-food supply channels. Although, there may be negative biases against power in existing literature and it may be viewed as the antithesis of trust, it cannot and should not be ignored as it is central to most business relationships. Hingley (2005a; 2005b; 2005c) further suggested that relationships with power imbalance are not necessarily unstable and can be managed by relational factors of trust, commitment, collaboration, etc. Additionally, Zhuang, Xi, and Tsang (2010) and Zhuang and Zhang (2011) conducted studies highlighting reciprocity and relationship development among relational variables. Zhuang, et.al. (2010) found that emotional closeness has a positive impact on perceived cooperation, reciprocity between the parties, and a decrease in the use of coercive power. Zhuang and Zhang (2011) found that a relationship marketing orientation has a positive impact on problem solving and a decrease in coercive power between partners. Contributing to the

more recent theoretical discussion, if asymmetrical power relations promote harmonious or increased conflicting relationships, Cuevas, Julkunen & Gabrielsson (2015) suggest that no straightforward determination can be made. Instead, goal congruence plays an important role in establishing long term relationships.

Research Question

In this study, we seek the answer to the following question: 'How do buyers' and suppliers' level of commitment and trust allow buyers to enter into complex relationships with their suppliers even when a substantial power imbalance exists?' To answer this question, we focus on the buyers' perspective in the buyer-supplier relationship both in terms of how they view the difference in power and how their own perception affects their decision making. In addition, we asked buyers to infer suppliers' views on various aspects of the relationship because we believed that this inference could influence buyers' actions to mitigate perceived threats.

Motivations and Contribution

In this paper, we analyze the direct and mediating effects of relational variables on the overall impact of power imbalance on the buyer-supplier relationship. In particular, we consider relationships involving power imbalance, relational embeddedness (level of closeness in a relationship), buyer and supplier tangible commitment, perceived level of trust, and organizational performance. It is our intention to propose and confirm a model that builds a systematic understanding of the role trust and commitment play in determining the level of power imbalance and the impact of the latter on the degree of relational embeddedness of the parties.

THEORETICAL BACKGROUND

This study is grounded in the resource dependence theory (Pfeffer & Salancik, 1978, 2003). This theory has implications for the actions of buyers and sellers in business relationships. Resource dependence theory posits that, to survive, organizations take actions necessary to secure supply of critical resources. Such actions logically could include developing relational embeddedness for critical information exchange with key buyers and suppliers. To assure continuity of the exchange, commitment is necessary; and in order for commitment to occur, some degree of trust must exist between the parties. These relational variables are also likely to mitigate the power imbalance between the two parties and reduce any suspicion on the part of the weaker party (buyer or supplier) of any threat of dominance or opportunism on the part of the stronger party. Cowan, Paswan, & Steenburg (2015) use the term 'ideal relationship' to explain such as relationship where 'firms communicate transparently, and have high trust, commitment, relational norms and high functional conflict resolution'. However, there are no guarantees that the powerful party will not engage in some level of coercion and exploitation (Rokkan, Heide, & Wathne, 2003), which can lead to the defection of the weaker party.

DEVELOPMENT OF TERMS, CONSTRUCTS AND RESEARCH HYPOTHESES

In the following sections, we first define key terms and constructs. Then, using these and the theoretical background, we explain the development of hypotheses concerning the interrelationships of the terms and constructs. Research methodology, results, and discussion of the results are explicated in the latter half of the paper.

Power Imbalance

In buyer-seller relationships, there are often differences in the degree of power that one party possesses compared to the other party. In fact, some researchers find that the nature of power in supply chain relationships presupposes an asymmetrical distribution of power between partners (Belaya, Gagalyuk, & Hanf, 2009). *Buyer power* exists when there is an increased number of suppliers and substitutes or reduced buyer competition in the industry, which limits suppliers' market alternatives. The size of the buyer in terms of annual percentage of estimated purchasing budget allotted to the suppliers is also said to increasingly impact buyer power especially when the percentage is high. *Supplier power* exists when there is reduced supplier competition, limited number of substitutes available, or increased number of buyers in the industry. Possession of critical and rare resources, such as patented technology, is also said to positively impact supplier power (Casciaro & Piskorski, 2005).

Commitment

Previous studies have defined commitment in several different ways. For this research, commitment is defined as *"an implicit or explicit pledge of relational continuity with exchange partners"* (Dwyer, Schurr, & Oh, 1987; pg: 19). Organizations may use different mechanisms to demonstrate commitment, such as, (1) aligning changes to the processes, products, or procedures specific to the needs of the buyer or supplier (Cannon & Homburg, 2001) such as changes to technology, procedural knowledge, working relationships and routines, as well as idiosyncratic investments in equipment (Bennett & Gabriel, 2001; Lai, Cheng, & Yeung, 2005; Liu, Leach & Bernhardt, 2005; Miyamoto & Rexha, 2004; Kang, Mahoney, & Tan, 2009); (2) establishing cooperative norms such as creating operational linkages, drawing out legal contracts; facilitating open and collaborative communication; obtaining organizational endorsements (Buvik & Haugland, 2005; Stuart, Hoang, & Hybels, 1999); and (3) encouraging goal congruence (Cannon & Perrault, 1999; Jap & Anderson, 2003; Prahinski & Benton, 2004). These may be considered as more tangible forms of commitment.

Trust

To develop, implement, and operationalize cooperative behavior between supply chain parties requires a degree of trust by both partners. Such trust means that each partner feels they can rely on the other party because they have positive expectations of the other party's performance regarding collaborative arrangements, and to expect that

the other party will forego opportunism at the expense of its partner (Cuevas, et. al., 2015; Lumineau & Malhotra, 2011; Poppo, Zhou, & Ryu, 2008; Rokkan, Heide, & Wathne, 2003). Thus, trust can be both *intended* and *realized*. One party intends to do what it takes to reduce opportunism but the other party must realize these actions. Thus, trust can only be gauged by the perception of both parties. Intended trust may be the desire of one party to behave in an acceptable manner, which may or may not be acknowledged by the other party. Realized trust is one that actually exists. Previous research primarily used trust to operationalize relational capital (Nahapiet & Ghoshal, 1997), and much of the research on trust is devoted to clarifying the meaning of trust in different social contexts (Tsai, 2001). In this paper, we define trust as '*one's confidence in another that encourages the other party to behave in a predictable and mutually acceptable manner'* (Morgan & Hunt, 1994, Sabel, 1993).

Relational Embeddedness

The concept of embeddedness is a means of describing the degree of closeness and interrelatedness of two parties in a relationship. By developing close relationships with other organizations, a business can access the capabilities of its partner organizations and enhance its own capabilities. Embeddedness with other organizations is a source of a firm's improved capability and expected performance and is assumed to develop over time through adaptation and trust (Gulati, 1998; Hansen, 1999; McEvily & Zaheer, 1999; Uzzi & Lancaster, 2003). Relational embeddedness stresses the "role of direct cohesive ties as a mechanism for gaining fine-grained information" (Gulati, 1998: 296). In a growing number of recent studies, researchers have begun to explore the impact of relational embeddedness on inter-organizational outcomes by examining inter-organizational reciprocal helping relations (Hansen, 1999), leveraging of knowledge gained (Gulati & Sytch, 2007), impact on execution-oriented and innovation-oriented task performance (Moran, 2005), and ease of knowledge transfer (Reagans & McEvily, 2003). Hence, partner firms with a high degree of relational embeddedness are likely to have strong relationships and exchange tacit knowledge.

HYPOTHESES

In a study of secondary data of mergers and acquisitions, Casciaro & Piskorski (2005) show that the stronger party is less likely to agree to commitment with the weaker party unless there is mutual dependence. Although mergers and acquisitions are a much deeper, life-long form of commitment than the relational embeddedness that occurs in long-term buyer-supplier relationships, the results of the study are relevant to both groups.

The central tenet of resource dependence theory is that organizations will use various tactics to reduce uncertainty in the supply of resources critical to their survival from the external environment (Pfeffer & Salancik, 1978). Our hypotheses represent our expectations of some of the implications of this theory (in particular supply security and continuation) for a power imbalance situation in buyer supplier relationships.

The following example illustrates mutual dependence in a power imbalance situation. The situation is the position of Amazon.com, Inc. vis-à-vis the large number of

small and medium-size businesses that sell products on the Amazon online marketplace. In this example, Amazon is the supplier of market access and the smaller business (through fees paid to Amazon) are buyers of access to the marketplace. Due to its position as a market access provider through its high-traffic website, Amazon has significantly higher power than the smaller business that list their products on the site. The typical small or medium sized business would not be able to attract as much web traffic to its own website, or achieve high positions in online searches, as it has the probability to do through Amazon. In this situation, the power imbalance fosters high relational embeddedness in the following way: Amazon wants high embeddedness with such businesses because many of them offer niche or otherwise hard-to-find products, or a more complete line of some products, than is available at brick-and-mortar stores. This is the long tail phenomenon in which Amazon is not subject to the physical restrictions of a bricks and mortar retailer and can offer less popular products. The more of such products listed on Amazon.com, the more people will regard Amazon as the "source of last resort" in the sense that if you can't find something in a brick-and-mortar retail store, you will likely find it on Amazon. This, in turn, attracts more traffic to Amazon and to the products offered by Amazon's smaller business partners. The small business partners recognize that Amazon provides possibly the largest possible market for its products and are willing to work with Amazon because of the large benefit to them. The degree of commitment to Amazon or another alternative would depend on the supplier's assessment of the importance of Amazon to their success. In a buyer supplier relationship, there are always alternatives, and each business must choose what is best for them.

Clearly, in this example, power imbalance appears to foster high- relational embeddedness. The more powerful Amazon gains product line breadth, and the less powerful seller gains market access and exposure.

Power Imbalance and High Relational Embeddedness

When a buyer's dependence on supplier or a supplier's dependence on a buyer increases, power imbalance is experienced. In keeping with resource dependence theory, firms will use various means to reduce the level of critical resource supply uncertainty (Pfeffer & Salancik, 1978). One means of achieving this aim is to foster high relational embeddedness, as that would guarantee resource attainment and provide potential means for cost reduction through cooperative efforts by establishing close buyer supplier relationships. These close relationships result in a situation of joint dependence, and it has been found that such joint dependence, operating through a logic of embeddedness in an asymmetric power situation, has a positive effect on the performance of the relationship (Gulati & Sytch, 2007). Some potential performance benefits could include: achievement of consistency in quality and price, opportunities for reduction of both appropriation costs and risk of increased losses, and reduced internal opposition to frequent changes in the supplier base. These benefits should provide motivation for increasing relational embeddedness. Therefore, power imbalance would seem to enhance the potential for the development of high relational embeddedness through close buyer-supplier relationships. For the more powerful party, it presents a situation where they likely have more control of the structure of the relationship, and, for the weaker party it

can present a way to obtain more assurance of continued supply of critical resources than perhaps would be possible from an arms-length relationship. Thus:

Hypothesis 1: Power imbalance fosters high relational embeddedness.

Power Imbalance, Buyer and Supplier Tangible Commitment, and High Relational Embeddedness.

In this paper, we argue that the relationship between power imbalance and high relational embeddedness is mediated by tangible buyer and supplier tangible commitment. Resource dependence theory suggests that the degree of commitment by either party would influence the extent of embeddedness that exists. It further posits that firms seek to establish secure sources of critical resources (Pfeffer & Salancik, 1978). One aspect of source security is providing for resources in the long term. As the level of asymmetry between parties increases, the likelihood that one or both parties will seek a long-term commitment is higher (Geyskens et. al, 1996). Thus, it would seem to follow that the level of commitment by either party would have a mediating effect on the level of embeddedness. Evidence of tangible commitment through investment in processes, technology, procedures, etc. by generally the weaker party in the relationship would enhance cooperation and goal congruence, increasing switching costs and the likelihood of greater relational embeddedness (Buvik & Haugland, 2005; Cannon & Perrault, 1999; Jap & Anderson, 2003), further strengthening the relationship.

Hypothesis2a (i): The relationship between power imbalance and high relational embeddedness is positively mediated by tangible buyer commitment.

Hypothesis2a (ii): The relationship between power imbalance and high relational embeddedness is positively mediated by tangible supplier commitment.

Power Imbalance, Buyer and Supplier Intended and Realized Trust, and High Relational Embeddedness

Both buyer and supplier trust are also likely to mediate the relationship between power imbalance and high relational embeddedness. Resource dependence theory implies some type of contractual relationship between buyer and seller to implement sourcing agreements to secure supplies of critical resources. Any agreement between buyers and sellers requires a degree of trust by both parties. It would therefore seem to follow that the degree of trust would mediate the level of relational embeddedness that may exist in a given relationship because it has also been found that trust can be either an enabler or a constraint between buyers and suppliers in long-term relationships (Cuevas, et. al., 2015; Day, Fawcett, Fawcett, & Magnan, 2013). Trust allows both parties to work together in confidence whilst reducing anxiety and fear of opportunism and deceit (Dyer & Chu 2003) of generally the stronger party, encouraging them to share novel and discrete information and knowledge pertinent to project or task at hand. Yet, neither the buyer nor the seller actually knows whether the level of trust is reciprocal as intention may not be translated into realization by another party. Hence, it is critical for both to realize the

level of trust. So, decisions made by buyers are based on their belief in the level of trust of their supplier. Hence:

Hypothesis 2b: The relationship between power imbalance and high relational embeddedness is positively mediated by buyer's intended trust.

Hypothesis 2b (ii): The relationship between power imbalance and high relational embeddedness is positively mediated by supplier's realized trust.

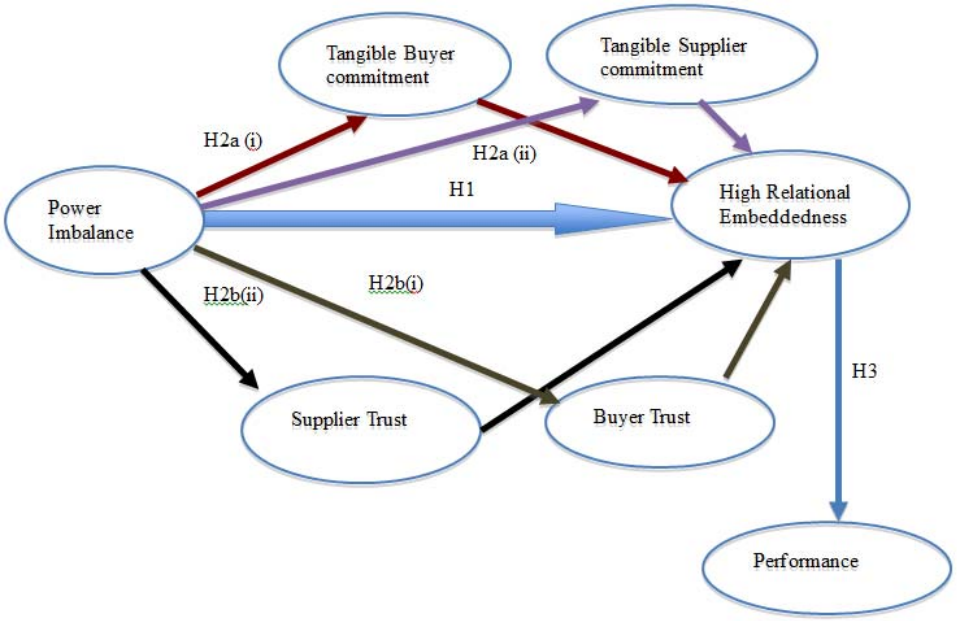
High Relational Embeddedness and Overall Performance

Both buyers and suppliers benefit from the strong ties and increased knowledge sharing of high relational embeddedness (Uzzi, 1996). This type of relationship increases the likelihood that buyers can obtain needed resources whilst reducing the threat of opportunism to either party. The cost and risk of losing those resources, and the significance of the resources to fulfill the goals and objectives of the organizations, determines the level of organizational performance (Hendricks & Singhal, 2003). Other research has found that the degree of relational embeddedness influences the type of knowledge transferred between partners and through this influences organizational performance (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004). Also, positive effects of embeddedness on firm performance as evidenced by survival potential were found by Uzzi (1996). In addition, relational embeddedness has been found to have a particular positive relationship with performance regarding innovation-related tasks (Moran, 2005; Galunic, 2007). It has also been found that as an indication of the degree of commitment by the partners, relational embeddedness, in the form of the level of joint action and the quality of information exchange between the partners, has a mediating effect on the performance of the relationship (Gulati & Sytch, 2007).
We therefore hypothesize:

Hypothesis 3: High relational embeddedness positively impacts overall organizational performance.

The resulting model with hypotheses is shown in Figure 1.

Figure 1: Hypothesized Model



METHODOLOGY

Survey Instrument Development

We used a three-step approach for developing the survey instrument. In the first step, the specific items were developed through an extensive literature review of previously validated measures. The resulting survey instrument contained 28 items being tested on a 7-point Likert scale, anchored by "Strongly Agree" and "Strongly Disagree." In the second step, a panel of three academics and three practitioners reviewed the proposed survey. After several refinements, the survey instrument was pre-tested as the third step by a group of 10 purchasing professionals. We had them complete the survey and then conducted an in-person interview to confirm instrument validation. The relevant measures from the survey are presented in Appendix 1.

Sample and Data Collection

Although we are analyzing interactions of variables, from the buyer's point of view over three stages of their relationships, data is not collected in different time periods. Rather, we divided our survey into three parts (t-1; t; and t+1), for each of the three stages. For example at the pre-deal stage, we asked the respondent questions regarding their firm's general experience pertinent to supplier relationships such as their relative power. The respondent was advised to consider 'All activities e.g. negotiations, exchange

of proposal, technical discussions, samples and prototypes, up until you have an agreement for transaction to take place.' At the deal stage, we investigate the firm's general experience with supplier relationships in terms of verbal or written agreements for buying and selling of goods and services. The deal could be a one-time transaction or the beginning of a long term relationship. In the third stage, we explore the firms' general experience with supplier relationships with respect to ongoing trust over an extended period of time.

Hence, we were able to obtain, from a single sample, data that pertained to each stage of the process. To strengthen the validity of the data collection method, buyers were asked to consider their firm's experience with supplier relationships in general when completing the survey. Also, at any given time, buyers are typically involved with suppliers in relationships that are in all three stages of development, thus giving them immediate experience from which to complete the survey.

We collected the sample data from two sources: (1) Institute of Supply Management monthly meetings in Houston, Dallas, San Antonio, and Atlanta, and (2) as class projects in supply chain management classes where students interviewed local professional buyers and had them complete the survey. All respondents were professional buyers who had buying responsibilities that involved interaction with suppliers sufficient to qualify them to complete the survey. Questions on the surveys were answered using a 7-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." A total of 110 usable completed surveys were obtained. We closely monitored all data collection activities, and no significant difference was found in data collected from the two different sources.

The data was collected only from buyers in order to get the buyers' general experience as they proceeded through the stages of relationship development. The data collection instrument was structured and the questions worded such that buyers, from their experience interacting with suppliers and from observation of supplier actions and behavior, could infer suppliers' views on various aspects of the relationship.

For purposes of clarification, the terms "buyer" and "supplier" are referring to firms and not to individuals employed by them. Although by necessity the data was collected from individuals, it represents firm-level practices and experiences.

Statistical Techniques

The partial least squares (PLS) technique is a path analytical model and is best suited to test the hypotheses. Recently, Shaver (2005) highlighted the discrepancies in standard tests for mediating relationships as proposed by Baron and Kenny (1986). He noted that violations of any of the assumptions, on which the tests are built, such as uncorrelated error terms, mostly skew the estimates resulting in lack of desirable statistical properties that lead to incorrect conclusion. As the PLS technique makes no assumptions of joint distribution, the results of the mediating tests are less likely to be skewed except for measurement error and missing variables.

PLS is a second-generation path analytical method, which has minimal demands on measurement scales. This technique is a three-stage approach consisting of a series of ordinary least-square analyses. In the first stage, scores for hypothesized latent variables are estimated; and in the second and third stages, OLS regression is used to estimate loadings, path coefficients, and parameter values (Chin, 1998). The PLS technique provides several benefits over competing second-generation techniques, which makes it

ideal for this study. It focuses on predictor specification and the variance of dependent variables. No assumptions are made regarding the joint distribution of the indicators or the independence of the sample cases. Since PLS focuses on prediction, factors are determinate, and the unique case values of the latent variables are estimated. Finally, it has minimum sample size requirements, and models are easily tested using path analysis and reflective measures (Chin, 1998; Chin & Newsted, 1999).

The number of indicators present determines the PLS estimates to a certain extent because with an increasing number of indicators, the estimates tend to become more stable as they converge to the true parameter values. The unique element of this second-generation technique is that it calculates weights and factor loadings of the outer model (i.e., parameters of the indicators leading to the latent variable) in the context of the theoretical model.

Composite Reliability

To assess the internal consistency for a given block of indicators, we calculated composite reliability. In comparison to Cronbach's alpha, this measure does not assume tau equivalency, which means that in a calculation of composite reliabilities, the indicators are not assumed to weigh equally. Therefore, alpha tends to be the lower bound estimate of reliability and pc a closer approximation. A modest reliability of 0.7 has been set as the standard for this analysis (Nunnally & Bernstein, 1994).

Average Variance Extracted (AVE): Average variance attempts to measure the amount of variance that a latent variable component captures from its indicators, relative to the amount due to measurement error. This measure is also interpreted as a reliability measure for the latent variable component score and is more conservative than the composite reliability measure. It is recommended that AVE should be greater than 0.5 (Chin, 1998), meaning that 50% or more variance of the indicators should be accounted for. The AVEs of the latent variables should be greater than the square of the correlation among the latent variables. Alternatively, discriminant validity, the square root of the AVEs of latent variables should be greater than the correlations among the latent variables, indicating that more variance is shared between the latent variable components and its block of indicators than is shared with another component representing a different block of indicators (Chin, 1998).

To assess the PLS model, we examined and interpreted effect size (*f*) for the endogenous variables of the measurement model and corresponding standardized path estimates in the same manner as a regression model. We used a bootstrapping technique to estimate the t-statistics for the weights and loadings of the indicators of the latent variables and the path coefficients of the measurement model. Bootstrapping can be implemented by constructing a number of resamples of the observed dataset (and of equal size to the observed dataset), each of which is obtained by random sampling with replacement from the original dataset.

RESULTS

In this section, we analyze the correlation matrix, composite reliability, AVEs, and discriminant validity, which are considered descriptive statistics of the PLS technique. Table 1 shows the correlations matrix with the diagonals indicating the square root of average variance extracted (AVE) to check for discriminant validity. Correlations of 0.5 and above are found among the variables of buyer and supplier commitment and trust, which is as expected since previous research have theorized and identified relationships among the same (Donaldson & O'Toole, 2000; Fynes & Voss, 2002; Heide & John, 1990). Discriminant validity is stated in the diagonals of the correlation matrix and ranges from 0.77-1.00. It is found to be more than the correlations of the latent variables indicating that the variables are seen to be distinct from each other, as they share more variance with their own block of indicators than with another component representing a different block of indicators.

Table 2 highlights the composite reliabilities and AVEs of independent latent variables. In general, the composite reliabilities range from 0.809-1.00, indicating internal consistency of latent variables. AVE scores range from 0.596-1.00, which explain reasonable variance shared among the latent variables and their respective block of indicators. It is also more than the square of the correlation of the latent variables, the highest being 0.543.

Table 1: Correlation Matrix[a]

	1	2	3	4	5	6	7	8	9
1- Buyer commitment	(0.890)								
2- Supplier commitment	0.604***	(0.770)							
3- Power imbalance	0.23*	0.158	(1.000)						
4- Relational Embeddedness	0.482***	0.428***	0.208*	(0.910)					
5- Buyer Trust	0.539***	0.423***	0.147	0.283**	(0.800)				
6- Perception of Supplier Trust	0.737***	0.529***	0.188*	0.489***	0.45***	(0.850)			
7- Overall performance	0.358**	0.341**	0.233*	0.247*	0.495***	0.257*	(0.940)		
8- Industry	-0.060	8.000	0.001	0.027	-0.001	-0.070	-0.100	(1.000)	
9- Size	0.050	0.060	-0.070	0.140	0.003	-0.090	-0.110	-0.070	(1.000)

[a]n= 110. The diagonals in parentheses indicate square root of AVE.
*p< 0.05
**p< 0.01
***p< 0.005

Table 2: Composite Reliabilities and Average Variance Extracted (AVEs) of Latent Variables

Variables	Composite Reliabilities	AVE
Tangible Buyer commitment	0.921	0.797
Tangible Supplier commitment	0.809	0.596
Power Imbalance	1.00	1.00
High Relational Embeddedness	0.903	0.824
Buyer Trust	0.874	0.636
Perception of Supplier Trust	0.928	0.720
Performance	0.959	0.886
Industry	1.00	1.00
Size	1.00	1.00

Modest composite reliability = 0.7
Modest AVE score = 0.5

In this paper, industry and size are used as control variables as they can influence power imbalance in buyer or supplier relationship. For example, buyers or suppliers in a niche industry where the probability of lack of available alternatives are high may create increased dependence. Size may be another factor determining power--the bigger the buyer or supplier the more powerful they would be. However, the results show no significant relationship between power imbalance and industry (β= 0.008; N.S.) And between power imbalance and size (β= -0.074; N.S.) The results indicate that hypotheses 1 is supported. Power imbalance positively impacts high relational embeddedness (β= 0.208; $p<0.01$), explaining a small variance of 4%. The relationship between power imbalance and high relational embeddedness is completely mediated by buyer commitment (β=0.232; $p<0.01$; β=0.473; $p<0.005$) with a high effect size (*f*) of 0.225 and partially mediated by supplier commitment (β=0.18; $p<0.05$; β=0.436; $p<0.005$) with a moderate effect size of (*f)* 0.171, supporting both hypotheses 2a(i) and 2a(ii). The results also indicate that the relationship between power imbalance and high relational embeddedness is partially mediated by buyer trust (β=0.15; $p<0.1$; β=0.29; $p<0.005$), indicating a weak effect size of (*f)* 0.081 and completely mediated by perception of supplier trust (β=0.19; $p<0.05$; β=0.469; $p<0.005$) with a high effect size of (*f)* 0.22, supporting hypotheses 2b(i) and 2b(ii). Hypothesis 3 is significantly supported where high relational embeddedness improves overall organizational performance (β=0.267; $p<0.005$) explaining a small variance of 6.6%.

Figure 2: Results of Hypothesis 1

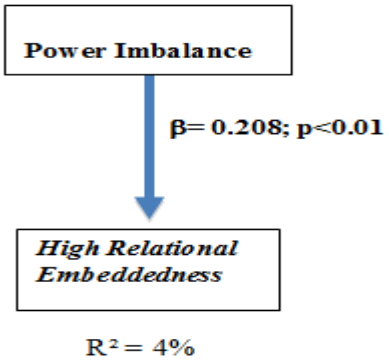


Figure 3: Results of Hypotheses 2a (i & ii)

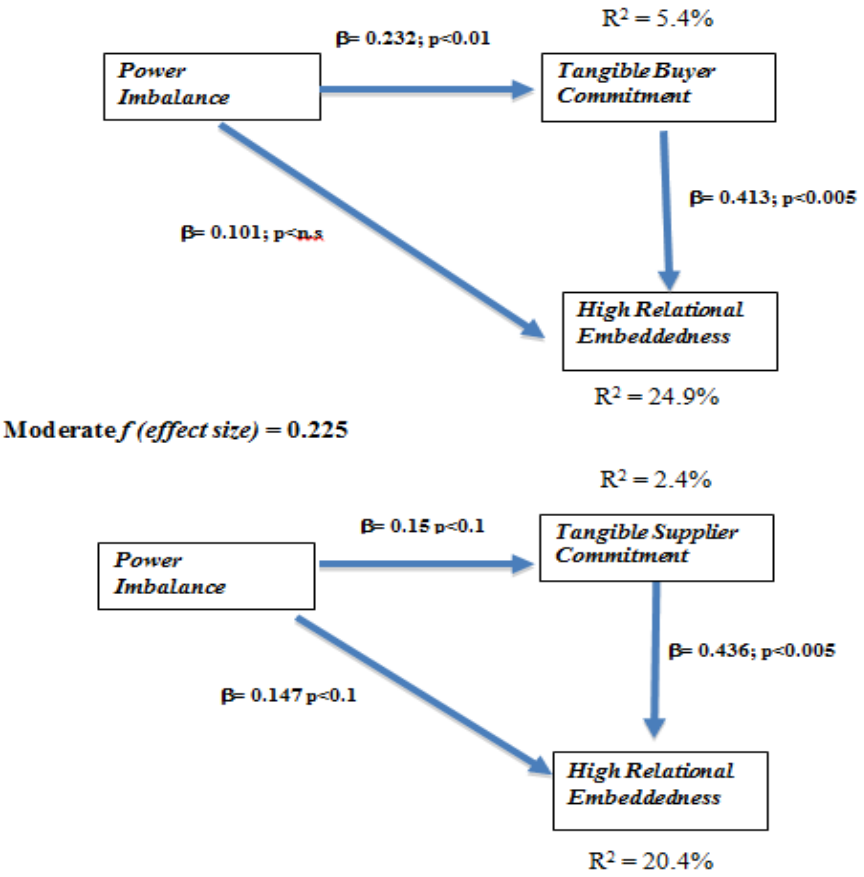


Figure 4: Results of Hypotheses 2b (i & ii)

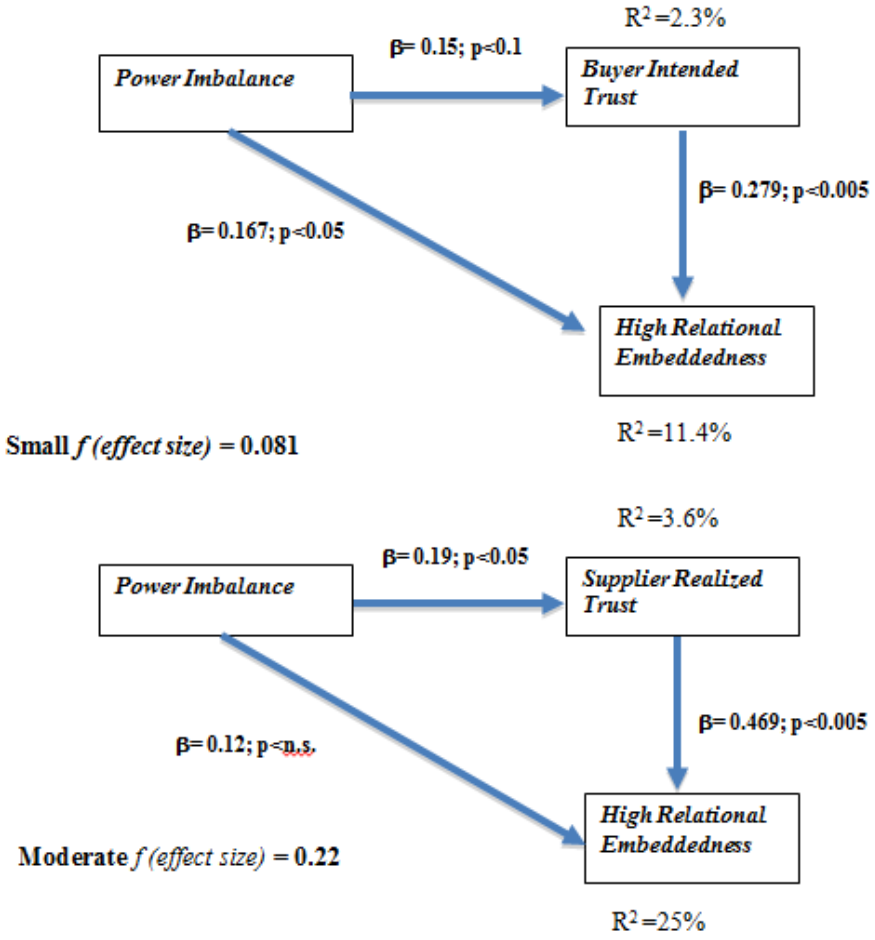
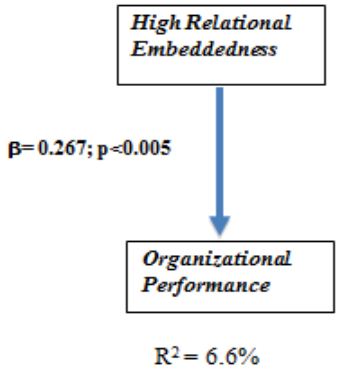


Figure 5: Results of Hypothesis 3



DISCUSSION

The theoretical model and empirical results developed in this paper provide a succinct relational view of power imbalance and level of closeness in the relationship and the latter's impact on organizational performance. Most of the previous research studies have focused on the directional aspect of power imbalance, and the impact of relational variables on the same or on buyer supplier relationships, but this study looks at the overall level of power imbalance on buyer-supplier relationship where trust and commitment play the role of a catalyst (e.g. Corsten & Felde, 2005; Cowan, et. al., 2015; Dyer & Chu, 2003; Kim, 2001; Miyamoto & Rexha, 2004; Morgan & Hunt, 1994).

The results of this study indicate that power imbalance does not necessarily result in arms-length relationships between suppliers and buyers. In fact, this study found that power imbalance fosters high relational embeddedness. This study also found that the relationship between power imbalance and high relational embeddedness is mediated by both buyer and supplier commitment and trust.

The finding that power imbalance can positively impact relational embeddedness may seem counter-intuitive. It is possible that when dependency of one party on the other requires continuance of an imbalance situation, a closer relationship may facilitate defensive and mitigating activities on the part of the weaker party. Something akin to this has been found for power imbalance situations relating to corporate merger and acquisition activity (Casciaro & Piskorski, (2005). Thus, our finding in this study may indicate similar developments in imbalanced buyer and supplier relationships; although they may be in general more fine-grained than merger and acquisition situations. Also, from the stronger party's perspective, in situations where the relationship is beneficial to the stronger party, actions to more closely tie the weaker party to the situation would be expected and could also be seen as a way to counter defensive and mitigating activities by the weaker party.

The findings that buyer and supplier commitment and trust contribute to increasing the embeddedness of a relationship, however, are not surprising. Tangible commitments of both buyers and suppliers to an imbalanced relationship helps reduce the fear of

insecurity and further strengthens the relationship between the two parties. Additionally, the analysis suggests that buyers may not be as confident of how the suppliers perceive their depiction of trust but the buyers, on the other hand, appear to trust their suppliers. It is the other party's perception of trust that is more important than ones' own portrayal of the same. As the data was collected only from buyers, suppliers' true perception of the intended level of trust depicted by the buyers is unknown. But given that the purchasing decision is made by the buyer based on the seller's previous offer to sell, the supplier's true perception is not as important because it is the buyer's perception of the seller's intentions that influences the purchasing decision. Furthermore, we can say with certainty that buyers in our survey perceive their primary suppliers to be trustworthy. Thus, supplier's depiction of trust influences relationship development more so than buyer depiction of trust. It also is not surprising that high relational embeddedness positively impacts overall organizational performance. Furthermore, it seems reasonable to conclude that the close working environment between buyer and supplier that is implied by high relational embeddedness should result in higher overall performance than would be possible with a more detached relationship.

Theoretical Implications

This model builds a systematic understanding of the role trust and commitment play in determining the level of power imbalance and the impact of the latter on the degree of relational embeddedness of the parties. Although there are negative connotations associated with power in existing literature, it cannot and should not be ignored as it exists in most relationships. This model is distinct in its approach whereby commitment and trust are not shown to directly impact the buyer-supplier relationships as depicted in previous research studies but are posited to impact the level of relational embeddedness in situations where power is imbalanced. Increased embeddedness can be expected to foster long-term relationships. Every partnership has some level of power imbalance, and this model addresses the issue of relational embeddedness in imbalanced relationships.

Managerial Implications

The results of this study have several implications for managers. First, it allows them to more fully understand certain aspects of imbalanced buyer-supplier relationships. Perhaps most surprising to managers may be that power imbalance situations can lead to closer buyer-seller relationships. Not so surprising is that commitment and trust by both buyer and supplier can be expected to increase the degree of closeness of the relationship.

A second implication is that, in an asymmetric buyer-seller relationship, the weaker party can be expected to take actions that, on the one hand, increases the closeness of the relationship; but on the on the other hand, provides some degree of mitigation or defense of the power of the stronger party. For example, the weaker seller could seek new customers, or the weaker buyer could seek secondary sources. The use of long-term contracts to limit short-term actions (e.g. price increases), which could be employed by the stronger party to take advantage of its position in the relationship, is a good example. A third implication is that the stronger party (assuming that continuation of the relationship is beneficial to it) can be expected to try to continue the relationship by employing actions that indicate commitment to the relationship and trust in the other

party thereby fostering a closer relationship and increased commitment. It should not be surprising to managers that closer relationships can be expected to lead to increased overall organizational performance.

Study Limitations

Self reporting, potential for perception bias, and convenience sampling are the principle limitations of this research. In addition, the survey data is gathered from buyers within the organization and only the perceived level of supplier input is recorded. A major limitation of survey methodology is that it does not provide detailed background information about the organizations. Detailed background information could be gathered in a future study using a multiple case study methodology. This will provide triangulation between the survey and case study methodologies.

Future Research

It is our intention to conduct a future study involving only suppliers to obtain the suppliers' perspective of the buyer-supplier relationship. This will enable us to compare and contrast the perspectives of the two parties, and it will allow us to confirm the theory by using a more fine-grained approach to testing the model by splitting the power imbalance between weaker and stronger partners. In addition, since this research topic is very promising, the logical extension of this paper would be to study the model in the context of horizontal relationships as well as exploring other factors that may impact buyer-supplier relationships, such as variations in the industry or network structure. Finally, a more practitioner-friendly paper can be premeditated from this theoretical piece as the growth in outsourcing has made managing and maintaining relationships a widely desired phenomenon.

CONCLUSION

In this paper, a research model of cohesive and close relationships in situations of power imbalance between buyers and suppliers is empirically tested. The findings indicate that development of buyer-supplier relationships in such situations are fostered by buyer and supplier commitment to the relationship and trust of the other party. An additional finding is that, not surprisingly, overall organizational performance is enhanced by the close relationships that are signified by increased relational embeddedness.

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APPENDIX 1
MEASURES OF LATENT VARIABLES

	Strongly Disagree						*Strongly Agree*
1-Buyer Tangible Commitment							
1- A high sense of unity exists between our suppliers and us.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- We are a very important ally for our suppliers' distribution.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3- We have developed a close business relationship with our suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(*adopted from Skarmeas, Katsikeas, & Schlegemilch (2002*))

2-Supplier Tangible Commitment							
1- Our suppliers devote more time to us when we need help.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- Our suppliers provide special aid to us when we are in trouble.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3- Suppliers have developed a close business relationship with us.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(adopted from Walter, Muller, Helfert, & Ritter (2003))

3-Power Imbalance (Average Buyer Power – Average Supplier Power)

Buyer Power							
1- Our firm would have to make major changes to switch suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- Developing working relationships with new suppliers would be a time consuming process for us.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Supplier Power							
1- Our suppliers would have to make major changes to replace us with a new customer	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- Developing working relationships with other customers would be a time consuming process for our suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(adopted from Krajewski, Wei & Tang (2005); Liu, Leach, & Bernhardt (2005))

4-High Relational Embeddedness

1- There is high corporate level of communication on important issues.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- Our firm and our suppliers have mutually binding agreements that regulate and integrate all activities.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(adopted from Carr & Smeltzer (2002); Buvik & Haugland (2005))

5-Buyer Trust

1- Promises made by us are reliable.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- We would make sacrifices to support our suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3- We feel that we can be counted on to help our suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4- In our relationship, we can be counted onto do what is right.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5- When making important decisions, we are concerned about suppliers' welfare.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
6- We are always honest with our suppliers.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

6-Supplier Perceived Trust

1- We believe the promises made by our suppliers are reliable.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- The suppliers follow through on their promises	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3- In our relationship, suppliers can be counted onto do what is right.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4- When making important decisions, our suppliers are concerned about our welfare.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5- Our suppliers are always honest with us.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(adopted from Doney and Cannon (1997); Fynes and Voss, 2002; Morgan and Hunt (1994); Walter, Muller, Helfert, & Ritter (2003))

7-Performance

Compared to the average in our industry…

1- Our ROA has been considerably better over the last three years.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2- Our sales have been considerably better over the last three years.	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3- Our financial results have been considerably better over the last three years.	**1**	**2**	**3**	**4**	**5**	**6**	**7**

(adopted from Corsten and Feld (2005))