Power Imbalance in Exchange Relationships

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Abstract

This paper focuses on the exchange relationships that exist between the small manufacturing firms and their alters within the semiconductor industry, and examines the effects that a power imbalance in the relations of a firm can lead to: a deterioration in the performance of the dependent firm. I first examine how the effect of power imbalance on performance is mediated by exploitation, tie strength, and centrality. I then examine how the effect of power imbalance and exploitation is moderated by the level of complementarity, homophily, and trust. I propose to conduct a study to test my hypotheses focusing on small manufacturing firms in the semiconductor industry. After a detailed outline of my proposed statistical analysis, I will discuss the implications and limitations of this study.

Introduction

Previous researchers have focused on the concept of power, specifically looking at how the dependence of one firm on another can lead to the acquisition of power. They have studied the role of power from the theoretical perspectives of dependence in a social exchange (Emerson, 1962) and more specifically, resource dependence (Pfeffer & Salancik, 1978). As a result of this research on the powerful positions held by a firm, the concepts of power, power use, and power imbalance are all connected. For instance, at the individual level, researchers have explored the link between potential power and power use (Brass & Burkhardt, 1993; Bacharach & Lawler, 1980), other researchers McCall (1979) and Mintzberg (1983) have argued against the notion of the separation of power and power use, claiming it as being unrealistic. Further, Molm (1981, 1985) explore the link between power imbalance and power use, and how the imbalance of dependence of the weaker party on the stronger party can constrain the ability to use power in the weaker party and cause variation in the use of power in the stronger party. Over the last two decades, researchers have devoted more attention to the concept of power imbalance and its effects on the firm; in particular, looking at how a power imbalance between two firms can lead to constraint absorption (Casciaro & Piskorski, 2005), negative outcomes of negotiations (Mannix & Neale, 1993). Gulati and Sytch (2007) while studying the automotive sector looked into the occurrence of joint dependence between two firms and its effects on performance rather than looking at the dependence asymmetries. Most of the studies focusing on the imbalance of power first, do not explore empirically the effects of power imbalance directly on the dependent firm's performance and second, do not look into the effects of a power imbalance occurring within one or more relationships between the dependent firm, and its effect on the closeness of the dependent firm within its network of exchange relations.

I propose that exploitation of the dependent firm's resources mediates the relationship between power imbalance and firm performance as an increase in the power imbalance in the relationship will lead to the firm negotiating contracts in their favor, and requiring more of the dependent firm's resources (time, personnel and money) to maintain the relationship. As the firm's

resources are exploited by the power-advantaged firm, I believe that this will contribute, in the short term to a reduction in the frequency of contact and closeness in the exchange relationships that the dependent firm has with other firms in its network. I believe that the aspects of the relationship between the power-advantaged firm and the dependent firm can reduce the imbalance between them and therefore, reduce the ability of the former firm to exploit the latter. Specifically, I discuss the moderation of complementarity, homophily, and trust on exploitation.

The layout of the paper will adhere to the following format. First, I will define the concepts of power, and power imbalance considering the position of the ego firm (Everett & Borgatti, 2005). Second, I will discuss the roles of exploitation of the dependent firm, and resource allocation within the ego firm, and how they impact the overall performance of the ego firm. Third, I will provide a brief overview of the proposed statistical analysis and methods, and finally I will discuss the possible theoretical and practical implications as well as the limitations of this study.

Theoretical Background and Hypothesis

Weber (1968) defines power as "the ability of an individual or group to achieve their own goals or aims when others are trying to prevent them from realizing them." Weber's definition is reiterated in Mintzberg's (1983) definition of power as the ability to affect the outcome and get things done. Weber defines power as the ability of the actor, whereas Emerson (1962) defines power as an attribute of a social relation or interaction and not as an ability of the actor. Thompson (1967) further argues that power is not just an attribute of the social relation and is linked directly to the resource dependence in the exchange relation, where it is measured as the reciprocal of dependence. Specifically, Thompson states that it is the access to and control over resources within the network of relations that provides the actors with a powerful position. For my purposes I will be using a definition of power similar to that of Thompson's as the access and control over resources in a network (Burt, 1992).

The views of Molm (1981) and Emerson differ on the use of power, in that Molm believes that the concepts of power and power use are distinct and having power does not imply using it while Emerson (1972) believes that the concepts are intertwined and that "to have a power advantage is to use it", with the dependency theory implying that power use will vary directly with power imbalance (Emerson, 1972). The concept of power imbalance is based on the theories of resource dependency and social exchange (Emerson, 1962; Pfeffer & Salancik, 1978), where resource dependence theory conceptualizes a power imbalance as the asymmetry in dependencies between two actors. According to resource dependence theory, actors engage in exchange relationships to obtain complementary resource and capabilities and to reduce uncertainty by negotiating contracts that provide relatively predictable outcomes (Pfeffer & Salancik, 1978; Thompson, 1967).

Emerson (1972) defines an exchange relation as "interactive relations between two parties based on reciprocal reinforcement". Reciprocal relations are beneficial as they help to build trust and collaboration, and foster the exchange of information between the two organizations. Additional benefits that can be gained through engaging in exchange relationships are the improvement in legitimacy, status and reputation of the firm through affiliation; they can increase access to resources that they might not be capable of acquiring through market transactions (Pfeffer & Salancik, 1978).

As the power imbalance in the relationship increases, so do the asymmetries in the exchange which increases the opportunity of the power-advantaged firm to realize greater financial gains (Molm, 1981, 1985). For instance, with an increase in alternatives available to the dependent firm diminishing the power imbalance in the relationship, the power imbalance between two actors is determined by both the extent to which a firm is dependent on the access to resources and the

number of alternatives sources by which it can gain access to the resources it requires (Cook, 1977; Levine & White, 1981).
For the most part, firms prefer to enter relations of balanced dependence as an increasing power imbalance occurring between two firms can lead to instability as one of the firms acquires more from the relationship than the other, and more costs to the dependent firm (Cook, 1977). Therefore, in the long run, it is beneficial for the exchange relationship to establish a "profit latitude" (Michaels & Wiggins, 1976), a value for the asymmetrical exchange ratio above which both firms are profitable.

> *Hypothesis 1: The dependence of the manufacturing firm is negatively related to its performance in the exchange relationship.*

Mediating Effects

In addition to exploring the relationship above, I would like to investigate the mediating effects of exploitation on the relationship between power imbalance and the dependent firm's performance. In this study, I will be using the definition of exploitation as the act of making use and unfairly benefitting from the resources of others. For example, the more power a firm has, the more influence it has to dictate the nature and rules of the exchange, thereby, placing itself in a position where it will benefit from a greater opportunity to realize increased profits, usually at the cost of the dependent firm (Emerson, 1962). These increased profits may be the result of the appropriation of a larger portion of the benefits resulting from the exchange (Friedkin, 1986). This may occur first, due to the power imbalance in the negotiation as studies using the prisoner's dilemma found that negotiators with an unequal power position are more likely to see asymmetries in the dispersion of outcomes between the two parties (McClintock, Messick, Kulman, & Campos, 1973). Second, because the more powerful firm has alternative resources it can therefore threaten to withdraw from the exchange, which would be detrimental to the success of the dependent firm (Molm, 1985). Third, power imbalance leads to asymmetrical exchange, with the more dependent firm contributing more to the relationship than it receives. The power-advantaged firm uses rewards to influence the actions of the dependent firm so that it can increase its benefits and shift the exchange ratio in its favor (Molm, 1985).

> *Hypothesis 2: Exploitation will mediate the effects of power imbalance on the manufacturing firm's performance in the exchange relationship.*

I would like to test for the possible mediating effects of closeness on the relationship between exploitation and firm performance. As the exploitation of the dependent firm by the power-advantaged firm increases is there a negative effect on the closeness of its balanced relationships, and therefore a potential decrease in the firm's performance? For instance, if the exchange is asymmetrical, the dependent firm is over- allocating its own resources into the exchange and receiving less in return (Molm, 1985). The dependent firm is therefore investing more time, money and personnel into the asymmetrical exchange. The issue with this is that the dependent firm does not have unlimited resources at its disposal; if it over- allocates resources to one relationship it will not necessarily have the needed resources to commit to the coordination of its other relationships. E.g. this phenomena can be seen in the communication between firms, as the power imbalanced relationship requires more attention in the form of more frequent communication. More frequent communication consumes more time and as there are only a limited amount of work hours, the employees at the dependent firm may be left with less time to communicate with the firm's other ties. As the frequency of communication decreases between firms, there is the potential that the

firm's alters become dissatisfied with the ego and its inability to provide them with their desired resources, and in an extreme case the alter may attempt to change their partners to gain better access from new partners (Kim, Oh, & Swaminathan, 2006). As previous research indicates that resource allocation decisions are influenced by short-term maximization of profits, I expect to see an effect in the short term as changes to the organization's structure and addition to the dependent firm's personnel can increase its coordination efforts (Anderson, Lodish, & Weitz, 1987).

> *Hypothesis 3a: The increase in exploitation of the manufacturing firm, by the power-advantaged firm, will lead to the reduction in the closeness of the manufacturing firm within its network of exchange relationships.*

> *Hypothesis 3b: The reduction in the closeness of the manufacturing firm within its network of exchange relationship will have a negative effect on the overall performance of the firm.*

Moderating Effects

Finally, I propose to explore the possible interaction effects of resource complementarity, homophily, and trust on the relationship between power imbalance and exploitation. Park and Ungson (2007) define complementarity as "the similarity of on certain organizational variables and the convergence of their economic motivations". Since firms can create value by accessing complementary resources residing in other firms (Penrose, 1959) firms, actively seek exchange relationships when complementary resources are not accessible in the market (Chung, Singh, & Lee, 2000). As complementary resources between partners increases, so does the mutual gain, as each partner's resources complements the other's weaknesses (Hamel, Doz, & Prahalad, 1989). As the complementarity of resources between the two firms increases so does the stability of the relationship, as it is to their mutual benefit to maintain the relations, then to dissolve them (Park & Ungson, 2007). The benefits obtained from complementarity will then reduce the motivation of the power-advantaged firm to exploit resources from the dependent firm as it might incur more costs in pursuing an exchange relation with a different firm providing the same resources (Hladik, 1985).

> *Hypothesis 4. Complementarity moderates the positive relationship between power imbalance and exploitation of the dependent firm, such that this relationship will be weaker for relationships that score higher in complementarity.*

Homophily is defined as the tendency for individuals to associate more with others who are similar to themselves (McPherson, Smith-Lovin, & Cook, 2001). Organizations that are located within the same geographic region, are structurally similar, share similar cultures and goals, and in general find it easier to partake in exchange relations with each other (Lincoln & McBride, 1985). The similarity between organizations is said to foster trust and reciprocity, and increase the predictability of the behavior of the partners involved in an exchange relationship (Brass & Krackhardt, 1993).The concept of organizational culture can be defined as a system of shared beliefs, values, and assumptions that govern how people behave in the organization (Needle, 2004; Ravasi & Schultz, 2006). The mismatching of organizational cultures is the most cited reason that exchange relationships fail (Weber, 2000). Shared goals between two organizations are said to foster the cooperative relationship between the two parties and increase the probability of attaining shared goals (Reid, 1969). The relational and structural similarities occurring between the two firms will reduce the likelihood that a conflict will arise, and in turn reduces the probability that the power-advantaged firm will exercise its power over the dependent firm (Brass & Krackhardt, 1993). As the probability of power use by the power-advantaged firm decreases, so does the power imbalance between the two firms, and, therefore, homophily will reduce the exploitation of the dependent firm.

Hypothesis 5. Homophily moderates the positive relationship between power imbalance and exploitation of the dependent form, such that this relationship will be weaker for relationships that score higher in homophily.

Method

Participants and Procedure

I intend to collect data from a sample of small manufacturing firms in the semiconductor industry. The semiconductor industry in the U.S. is vast, with 43 billion dollars in exports last year alone, making it the third largest export industry, second only to the automotive and airline industries. It is a diverse industry comprised of manufacturers of memory, microprocessors, integrated circuits and SOCs, whose products are a component of anything with an on/off switch. Because of the size and diverse nature of the industry, there is a significant variation in the ties that manufacturers can have. For instance, not all small manufacturing firms deal with large distributors that act as brokers to supply contractors with the components they require. They may deal directly with the contractors themselves. Also, these small firms may not deal with either contractors or distributors but rather supply products to other manufacturers down the supply chain.

In addition to the variation in the ties, there is significant variation in the size of the firms with small and large firms occupying positions in the three different channels; supply and manufacture, distribution, and procurement. The diverse nature of this industry makes it a good sample for studying the power imbalance occurring within the exchange relations of manufacturers as each firm will likely have a very different network; some more balanced than others.

The survey will be provided to a sample of 5-10 employees in the ego firms (manufacturers). Information on the characteristics of its alters, including their relation to the ego firm will be obtained entirely from the ego firm (Everett & Borgatti, 2005). The composition of each of the sample respondents will ideally include employees working in sales, sourcing and accounting, and the founder or CEO, as these individuals will have a better understanding of the firm's relationships and financial performance.

To measure the causal mechanisms between predictor and outcomes, and the indirect effects of the mediating variables, the questionnaires will be sent out in three stages over a period of twelve consecutive months (Chan, 1998; Ployhart & Vandenberg, 2010; Podsakoff, MacKenzie, & Podsakoff, 2012). There will be a waiting period of four months in between the dates that each questionnaire is sent out to respondents, so as to reduce common method bias, sensitization and practice, therefore maximizing the validity of the study (Podsakoff, MacKenzie, & Podsakoff, 2003). The survey will be distributed by email and ideally endorsed by and sent from the Semiconductor Industry Association, with a letter attached encouraging participation in the study. The survey questions will be embedded within each email, and the participants will be asked to complete each stage within a two-week window (Dillman, Smyth, & Christian, 2009). Participants will also be guaranteed that their responses will remain confidential.

In the first stage, the questionnaire comprising the measure of power imbalance, firm performance, and some additional contextual questions will be sent to the respondents. The ego firm's performance will be measured at this point and in the last stage so as to determine whether growth or decay has occurred in firm performance. In the second stage, the questionnaire will contain the measures for the moderators and mediators; exploitation, tie strength, trust and homophily. In the third stage, the survey will include the measure for firm performance.

The major drawback of this proposed procedure is the decline in the response rate, and as non-response can lead to errors in the statistics as one cannot speculate about the characteristics of the non-respondents or the nature of the non-response (Schwarz, Groves, & Schuman, 1998; Ployhart

& Vandenberg, 2010). A gentle reminder will be distributed in all three stages by email with the questionnaire embedded in an attempt to lower the attrition rate.

Measures

Independent Variables

Power Imbalance. Pfeffer and Salancik (1978) define dependence as the combination of two variables; the importance of the input or output to a firm and the extent to which it is controlled by another firm. The measure of power imbalance will, therefore, contain two variables. The first, will measure dependence and will be calculated as the amount of alternative exchange relationships in which the dependent firm is involved that can act as a substitute and provide similar resources to the dependent firm, a smaller value indicating higher dependence. The second variable will measure the importance of the input or output obtained from the power-advantaged firm.

Exploitation. The exploitation by the power-advantaged firm of the dependent firm's resources can occur through two processes. The first is through the negotiation process where the power advantaged firm uses its power during the negotiation process to obtain results in its favor (Cook, 1977; Molm, 1985). The second is through the relationship management process, as the power-advantaged firm may first, contribute less to the relationship and, therefore, require the dependent firm to pick up the slack and or require more investment in time, personnel, and resources (Molm, 1985).

Closeness. To measure tie strength, I will use a modified version of the 3-item scale from Hansen (1999) which measures the closeness of a working relation and the communication frequency between two actors (Granovetter, 1973, 1974). The scale is a 7-point Likert-type with one reverse coded item with each of the three items having different anchors. Also, a measure of the closeness centrality will be calculated by adding the minimum number of links between the focal manufacturing firm and all others within its network (Freeman, 1979, Knoke & Burt, 1983).

Complementarity. I will follow the procedure developed by Wang and Zajac (2007) to measure the complementarity between the power-advantaged firm and the dependent firm. This procedure involves using the complementarity of NAICS codes as a proxy for business complementarity. The logic is as follows, if firms that engage in activity A always engage in activity B, then activities A and B are complementary. Therefore, if one firm of an exchange is involved in activity A and another firm is involved in activity B, the businesses of the two firms can be concluded to be complementary.

Trust. To measure trust, I will use a modified version of the 6 item scale developed by Zaheer, McEvily, and Perrone (1998) which measures elements of interorganizational trust. The scale is a 7-point Likert-type scale with anchors (1=Strongly Disagree) to (7= Strongly Agree).

Homophily. A shortened and modified version of the Hofstede (1998) measure of organizational culture will be combined with questions about the firm's geographic location and primary function of the organization within the supply chain. The wording of the questions will be modified so as to determine whether similarities occur in the aspects of culture, location and function between the power-advantaged and dependent firms.

Dependent Variables

Firm Performance. To measure firm performance, I will use the accounting measures of net profit and ROA, and a question regarding the relative performance of the firm. As I will measure firm performance in the first and last stages of the survey, this will allow for the calculation of the growth

of the firm over the quarter (3 months). I will use the calculated level of growth and compare it to a benchmark industry average.

Control Variables

Several control variables were included to control for alternative explanations and to increase the robustness of results (Spector & Brannick, 2011; Carlson & Wu, 2012). First, I will control for the duration of the relationship because of its effects on trust, exchange and performance (Uzzi, 1997, 1999, Gulati & Sytch, 2007). A dummy variable will be used to distinguish between short-term and long-term exchange relationships between the ego firm and the power-advantaged firm, as a short-term relationship should have lower trust when compared to the long-term relationships. Second, the size of the firm will be controlled for as firms with more employees and more resources at their disposal will be more capable of meeting the demands of the dependent firm without making sacrifices to the maintenance of the other exchange ties. Third, a categorical variable will be used to capture the nature of the activity within the supply chain of the power-advantaged firm, whether they are a (1 = Supplier, 2 = Manufacturer, 3 = Distributor and 4 = Contractor). Lastly, the age of the firm will be controlled for as new firms may be more willing to sacrifice profits for the affiliation and legitimacy that can be derived from the tie with a power-advantaged firm.

Statistical Analysis

As a majority of the data acquired in this study is from self-reports there is the concern that common method bias can affect the validity of the study and lead to type 1 and type 2 errors. To test for its presence, an exploratory factor analysis, specifically, Harman's single-factor test will be conducted to determine whether a single factor accounts for the majority of the variance in the data (Podsakoff & Organ, 1986).

To ensure the reliability and the validity of the constructs, a majority of the measures have been used in pre-existing research. I intend to conduct a pretest of the measures, after which I will eliminate any items that appear to be ambiguous or unclear in nature. I will use the data from the pre-test to first run an exploratory factor analysis (EFA) for the two measures created in this study; power imbalance and exploitation. Second, I will test for the convergent and divergent validity of the created measures. Third, I will conduct multiple confirmatory factor analyses (CFA) to show that the constructs are indeed distinct, and I will run an additional CFA model with direct oblimin rotation to ensure that the 8-factor model has the best fit among the multiple factor models being compared. I will use the Chi-square and the following fit indices; SRMR, CFI, and RMSEA to determine the goodness of fit of the model (Hu & Bentler, 1999).

I will provide a descriptive statistics table with the calculated means, standard deviations and correlations of variables, paying attention to the incidence of high correlation. To test the hypotheses, I will use EQS, a structural equation modeling software program, to determine whether moderated mediation is present in both indirect paths of the model (Kenny & Judd, 1984; Baron & Kenny, 1986). First, I will use the bootstrapping method to assess whether the impact of exploitations and resource allocation on power imbalance and firm performance is significantly different than zero. Following the framework outlined in the working paper by Preacher, Rucker and Hayes (2005) I will then proceed to evaluate the significance of the conditional indirect effects, to determine whether the effect of exploitation and resource allocation is dependent on the values of complementarity, homophily and trust (Preacher, Rucker, & Hayes, 2005; Little, Card, Bovaird, Preacher, & Crandall, 2007).

Using the multigroup analysis function in SEM, I will separate the data into four groups (exchange with Suppliers, Manufacturers, Distributors, and Contractors) to determine whether there is any difference in the model. The results of the multigroup analysis will provide further insight into how the nature of the exchange relationship impacts the direct and indirect effects of power imbalance on firm performance.

Discussion

Theoretical Implications

Previous research has explored the effects that a power imbalance has on the performance of the firm, though it has not examined how the presence of an imbalance within the exchange relationships of the firm can negatively affect the other relationships of the firm. First, this study explores the relationship between power imbalance and firm performance that has not been empirically tested. This study should then act as a stepping stone for future research to further explore the proposed mechanisms through which firm performance is affected directly and indirectly by a power imbalance. Second, it tests the mediating role exploitation by the power-advantaged firm by determining whether power-advantaged firms make use of their power and whether their dominance is manifested in the exploitation and absorption of resources from the dependent firm. It looks at how the exploitation by the power-advantaged firm can lead to the weakening of the relationships of the firm and how this may impact firm performance in the short term. Third, it investigates the moderating role of complementarity, homophily and trust, specifically looking into the role they play in dampening the effects of the existence of a power imbalance occurring in the exchange relationship. Last, by categorizing the types of exchange relationships between ego and it's alters it will allow for the determination of whether the effects of the mediators and moderators are similar across the four different types of exchange relationships.

Limitations

First, sampling from a single industry may decrease the generalizability of the results, but I am hoping that by categorizing the types of exchange relationships that the ego firm has with the power-advantaged firm the viability of the results will be increased and lead to studies exploring the power in distribution, supply, and sourcing channels. Second, using only a handful of representatives of the firm may lead to a bias as we have not captured the opinions of everyone working at the firm. As I am using small manufacturing firms as my sample, I hope that employees that are both responsible for the relationship management for the firm, and have firsthand knowledge of the firm's financial performance will adequately represent the views of the firm. Last, as I have designed the study to be conducted over a period of one business year so that I can benefit from the reports of yearly returns of the firm's earnings I am concerned that the causal mechanism may not be evident, and, therefore, it might be more appropriate to conduct this study over a longer period. The major issue with this is the increase in attrition as it will significantly decrease the power of the study.

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