

TWO ESSAYS ON INTER-FIRM COOPERATIVE JOINT VENTURES

By Steve Kyungjae Lee

A dissertation submitted to the
Graduate School-Newark
Rutgers, The State University of New Jersey
in partial fulfillment of requirements
for the degree of
Doctor of Philosophy
Ph.D. in Management
Written under the direction of
Professor Douglas Miller
and approved by

Dr. Douglas Miller

Dr. Farok Contractor

Dr. Ajai Gaur

Dr. Myung-Su Chae

Newark, New Jersey

May 2017

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ABSTRACT OF THE DISSERTATION

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By Steve Kyungjae Lee

Dissertation Director: Professor Douglas Miller

The first essay examines the effects of influential power each partner can exercise in the industry toward the unexpected dissolution of JVs formed between competitors. Based on the transaction-cost economics for the decision of ‘termination-or-sustenance’ of inter-firm collaboration and the situational assumption of ‘mixed-motive interaction’ that partners face for continuing cooperative behavior with competitor through JV, I theoretically argue that it is the influential power each partners exercise within the industry that causes JVs between direct competitors to have differential risk of dissolution. Event-history analysis was used to test the hypothesis based on the sample of 188 JVs between 2001 and 2015. A key finding is that JV failure is negatively related with the influential power.

The second essay further sophisticates prior finding in that it provides the condition under which positive effect of alliance experience to future activities becomes weaker or even disappear. Whereas early researches on experience emphasized that alliance experience generally seems to be conducive to firms’ alliance activities, this study seeks to go further by providing a boundary condition regarding when alliance experience supports alliances activities and when its effect becomes weaker or even disappear. Focusing on 203 firms whose focal joint-ventures were formed between 2001 and 2010 and observing their immediate subsequent joint-venture activities for following 5 years, the study demonstrates that although alliance experience generally influences positively to the likelihood of firms’ re-entrance of joint-venture, its positive

effect to the formation rate of new JV becomes insignificant especially when focal firms have a JV failure in the most recent one.

DEDICATION

To my parents, my sisters, and my friends

ACKNOWLEDGEMENTS

I would never have been able to finish my dissertation without the guidance of my committee members, assistance from colleagues, and support from my family.

I would like to express my deepest appreciation to my advisor, Dr. Douglas Miller, for his excellent support and guidance. Dr. Miller has been such a great counselor not only as an academic advisor but also as a genuine teacher for my life. The conversations with him have been a good opportunity to broaden my research areas and even my career plan after doctoral studies at Rutgers. I am very pleased to have worked under the supervision of an outstanding scholar and a great person like him.

I am also very thankful to Dr. Farok Contractor for his warm advices throughout the Ph.D. program. I sincerely admire his passion for research, and the lessons from him will be very important guidance for my future career as a management scholar.

I also would like to thank Dr. Ajai Gaur for his insightful comments and assistance. Whenever I stop by his office for guidance, he has always provided me very helpful advices. I deeply appreciate his help and kindness. I also thank Dr. Myun-Su Chae for serving on my outside dissertation committee member and for his critical comments and suggestions for my proposal and defense.

I am also very thankful to Dr. Byun-Tae Lee at Korean Advanced Institute of Science and Technology for providing licensed-permission on S&P Capital IQ and Bloomberg business. Without his help, I couldn't obtain the data required for my dissertation studies.

Most importantly, I cannot imagine that I could have accomplished this work without the support from my family. I would like to express my warmest appreciation to my parents and two sisters.

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Chapter 1: Introduction

Joint-Venture (JV) is one of the most prevalent governances of economic transaction. Despite its research predominance in the academic field of management, earlier studies in a static view were skewed to investigating the antecedents of formation of such cooperative relationship and consequences which happen to the firm once it created a JV. Based on the observation of entire-life histories of sampled JVs and event-history analysis with panel data, my dissertation attempts to proceed more deeply by answering what naturally seems critical follow-up questions; a) why so many JVs are unexpectedly dissolved? and b) how prior JV failure negatively moderates the relationship between alliance experience and future JV activities?

Specifically, the first essay focuses on why so many JVs, particularly those formed between competitors, are unexpectedly dissolved. To do that, I examine the effects of influential power each partner can exercise in the industry toward the unexpected dissolution of JVs formed between competitors. Although there have been both theoretical and empirical consensuses that inter-firm collaboration is more likely to fail if partners are direct competitors, there is still insufficient theoretical explanation regarding why there are differential risks of failure of JVs between competitors. Based on the transaction-cost economics for the decision of ‘termination-or-sustenance’ of inter-firm collaboration and the situational assumption of ‘mixed-motive interaction’ that partners face for sustaining a cooperative behavior with competitor through JV, I theoretically argue that it is the influential power each partners exercise within the industry that causes JVs between direct competitors to have differential risk of dissolution. Event-history analysis was used to test the hypothesis based on the sample of 188 JVs between 2001 and 2015. A key finding is that JV failure is negatively related with the influential power. Controlling the relative power among the partners, the study

found that as the level of average influential power of partners increases, the rate of unplanned termination of JV between competing firms declines. In other words, as firms become more powerful within the industry, they face greater incentive to cooperate with competitor through sustenance of current JV than to pursue self-interest benefit through opportunistically dissolving current collaboration with competitor. Also, it demonstrates that collaboration between competitors becomes more stable as each partners' power over the JV itself through ownership share gets closer to '50 vs 50'. In this respect, this study tries to further sophisticate our understanding of complex nature of inter-firm cooperative relations by providing us the insights about why there are differential hazard of JV failure between direct competitors.

On the other hands, the second essay pay attentions to the question of whether past experience is always positive in the future. If not, when does its positive effect becomes weaker or even disappear and how? In other words, the second essay tries to further sophisticates prior finding in that it provides the condition under which positive effect of alliance experience to future activities becomes weaker or even disappear. Whereas early researches on experience in a strategic setting with the implicit assumption that experience is always positive, as Barkema and Schijven (2008) critique, emphasized that alliance experience generally seems to be conducive to firms' alliance activities, this study seeks to go further by providing a boundary condition regarding when alliance experience supports alliances activities and when it does not. In this study, I intentionally consider whether the firms have a prior alliance failure such as unplanned liquidation, bankruptcy, or sale to third-parties because I argue that alliance experience has disappearing effect on the firms' subsequent alliance activities with the existence of prior alliance failure. Focusing on 203 firms whose focal JV were formed between 2001 and 2010 and observing their immediate subsequent JV activities for following 5

years, the study demonstrates that the existence of prior JV failure not only affects negatively to the firms' likelihood of re-entrance, it can also delay the time of re-entrance. In addition, more interestingly, the results show that although alliance experience generally influences positively to the likelihood of firms' re-entrance of JV, its positive effect to the formation rate of new JV becomes insignificant especially when focal firms have a JV failure in the most recent one. Overall, this study has contributions to the literature on corporate alliance by further sophisticating the relationship between alliance experience and alliance activities, providing a more dynamic perspective and new insights on the nature of firms' behavior to enter into a new alliance and enabling managers to be cautious about the notion that past experience is always positive in the future activities.

1.2 Methodology: Event-history analysis

Both dependent variables in my essay one and two are defined as the form of probability- the likelihood of joint-venture failure for essay one and the likelihood of firms' re-entrance of joint-venture subsequently for essay two. In this regard, event history analysis (EHA) is appropriate because this technique attempts to estimate the likelihood of event on the basis of given observations and therefore mathematically links change in future outcomes to conditions in the past. What we ultimately want to calculate in EHA is the so-called 'hazard rate'. Specifically, it is interpreted as the probability that an event happens at the right moment of given time 't' given that event has not occur so far. So, hazard rate is a special type of conditional probability. The basic form of a hazard rate is as follows;

$$(h(t))^{\wedge} = f(t, x; \theta) = \lambda_{-0}(t) * g(x; \theta) \text{ where } \theta \text{ represent the vector of model parameters}$$

Then, hazard rate function can be understood as consisting of two parts; the underlying

baseline hazard rate, often denoted $\lambda_0(t)$, showing how the likelihood of event per time unit varies over time at baseline levels of covariates; and the parameter effects, representing how the hazard changes in response to explanatory covariates. To avoid misspecification, I used a conservative Cox proportional hazards model, which is more flexible and robust for cases in which it is difficult to specify a particular shape of the time dependence of the hazard rate.

In order to conduct event-history analysis, my data structure should include information about the timing and sequence of the events that are being examined (Blossfeld et.al., 2007). For instance, if focal firm in the sample re-start a new alliance of the same type, my data structure should provide information about the timing of this event (day, month, year), and any other relevant alliance-, firm-, and industry-level information. My data structure, therefore, provide information on changes in variables that might take place at any specific point in time during my observation period. Specifically, in essay two, each firm's history began either one-day after the date of alliance failure or 4 years later from the date of focal alliance formation and ended at the time of an event (entering a new alliance of same type) or at the end of the year, whichever comes first. The firm's second spell began on the following day and ended at the time of an event or the end of the next following year. This pattern continued until the end of the observation period (Dec 31 2015), allowing time-varying covariates to be updated throughout the firm's history at yearly intervals.

1.3 Why using event-history analysis instead of multiple logistic regression?

Why is it necessary to adopt a more refined and sophisticated technique for analyzing panel data. Why is it impossible to relate the occurrence of an event during the observation period to a set of covariates simply by the technique of, for example,

logistic regression model, in which the binary dependent variable represents whether a particular event happened during the observation period or not? If utilizing such a logistic regression modeling were fully enough strategy, it would not be necessary to use more annoying methods such as EHA for analyzing event history data because EHA is usually more complicated task than logistic regression. The first reason is that the information about the timing of event-occurrence within observation period cannot be used if scholar adopts logistic regression (Allison, 1999; Yamaguchi 1991). So, for example, both machine A that experience a failure at observation period 2 and machine B that experience a failure at year 4 are treated as equal since logistic regression cannot use the information on the timing of event-occurrence for the analysis. Also, logistic regression assumes that the covariate effects are constant over time; in other words, it cannot allow covariate-time interactions because its data structure is cross-sectional (Blossfeld et.al., 2012; Yamaguchi 1991). Lastly, logistic regression cannot cope with observations that are right-censored, which happens if event does not occur by end of observation period (Blossfeld et.al., 2012). So, data for logistic regression does not contain censored cases because a categorical (binary) dependent variable is only necessary.

Chapter 2 Literature review

In chapter 2 which I intend as a theory section of my dissertation, I conduct several important theoretical discussions to make readers to better understand the main part of my dissertation especially for first essay. Specifically, I discuss 1) unstable nature of inter-firm collaboration between competitors, 2) characteristics of decision-making in inter-firm collaboration between competitor, 3) why JV can be the best governance solution, 4) why firm cooperates with competitors and 5) whether inter-firm cooperation with competitor can be potential source of firms' competitive advantage. Because following two essays do not pay separate theoretical attention on these issues, chapter 2 plays an important role by complementing the theoretical lack of my two empirical studies.

2.1 Unstable nature of inter-firm collaboration between competitors demonstrated by frequent occurrences of unplanned dissolution

Considering that it is the inter-firm collaboration between competitors (ICC) in the same industry, the partners of ICC would experience much greater uncertainty and risk compared to regular collaborations such as those with suppliers or customers. In real business world, for example, there have been numerous events of ICCs' unstableness demonstrated by frequent incidences of unexpected termination or complete sale-to-third party. Thus, management scholars have both theoretical and empirical consensus that inter-firm cooperative relation is more likely to be risky and unstable if partners have high level of competitive rivalry by sharing same primary markets for business operations (Kogut, 1988; Park & Ungson, 1997). So, in the first section of chapter two, I particularly pay attentions on why ICC have such an unstable nature.

Firstly, we can adopt an individualistic approach (user-oriented approaches) to

view the emergence of ICC, its structure of roles, division of labor, and distribution of power, as well as ICC's sustenance, change, and even dissolution as outcomes arising from complex exchange between individual partners pursuing self-interest goals. In this approach, individuals are assumed to participate in cooperation as users of community's resources for the pursuit of their own individual benefits (Robert & Wasti, 2002). Therefore, ICCs are theoretically regarded as associations of self-interested members, sustained by the rewards that autonomous participants obtain from their engagement in ICC. In other words, we can conceptually define ICC as a designed mechanism between competitors for efficient distribution of personal benefits. So, each time there are conflicts between partners or changes over the preference in cooperation, ICC's current status is very likely to be re-designed, sold to third-party or even dissolved without expectation.

Secondly, we can also analyze the unstable nature of ICC in terms of the perspective of fragmented organizational culture. In ICCs where present friends can easily become future foes, there might be a lack of consensus on several critical issues among the partners, implying that the organizational culture of inter-firm collaboration entity (e.g. joint-venture) is likely to be multifaceted and contested. In other word, various cultures can directly clash each other in newly created collaboration entity especially when partners are competitors because ICC could invariably affect the competitive positions of the participating firms (Morris & Hergert, 1987). To the extent that different cultures of shared meanings and values are observed in different participating competitors, they lead to the formation of discrete subcultures, which suppresses the success of cooperation and generates separate islands of sense-making within given ICC. Considering that ICC shows the exact feature of fragmented organizational culture, no wonder that ICC constantly experiences severe unstableness

throughout its life history.

2.2 The realization of ICC through the formation of Joint-Venture: The characteristics of decision-making in ICC and why JV can be the best governance solution

Empirical tests of hypotheses were conducted in my dissertation based on the sample of joint-ventures between competitors because I firmly believe that firm is most likely to choose joint-venture for the realization of ICC among the various types of economic governances. In other words, empirical test of ICC by looking at the firms' joint-venture activities stems from the theoretical contemplation that joint-venture can be the best economic transaction governance for the successful management of ICC, thereby making the firm to have the biggest incentive to choose joint-venture instead of other types of governance.

For understanding how the firm might structure and manage ICC, we first need to comprehend the features of decision-making in ICC. When it comes to ICC where more than two parties come together for the achievement of collective objectives, there tends to be high degree of non-rationality on decision-making process. Firstly, when cooperating with competitors, the firm faces the problem of bounded-rationality because it retains limited information regarding potential partners, and the firm has a lack of capability to fully evaluate partners even with the complete knowledge about who they are. Secondly, the firms are likely to change their initial minds such that the preferences of partners are not constant throughout the time. Thirdly, although competitors come together and decide to cooperate for the pursuit of collective goals, each partner still has its own interest about what the cooperation should be like and what its goals should be. Hence, all of these imply, as March and Simon (1958) argued, "the composition and goals of the ICC are not given; it is negotiated and bargained".

Given these distinctive features of decision making process, I firmly argue that most of ICCs are realized either through joint-venture created by partners' equity-investment or through strategic-alliance based on detailed legal contracts rather than through less binding types of transaction governance such as inter-firm consortia or free market exchange. Here, we can apply transaction-cost economics to understand why the ICC's task of allocation, supervision, and coordination are managed and structured in a way that takes advantage of joint-venture or legally bounding alliance. According to Williamson's idea (1979), each of the multitudes of recurrent transactions that arise in a society can be managed either in a market or internal hierarchy. And which transaction governance is preferred depends on the extent to which individual firm encounters opportunistic behavior (cost of monitoring and enforcement), bounded-rationality (uncertainty), and informational asymmetry. TCE argues that transactions are better managed within the boundary of the firm when much more need to be known, much less is certain, and there may be quasi-moral elements.

Considering that the firm encounters a) bounded rationality due to lack of sufficient information about the partner, b) potential opportunistic behavior due to partner's varying preference over time, and c) the difference in each partners' own goals, either joint-venture or legally bounding alliance might be an ideal type of management of ICC because they bring the poorly informed partners to a transaction together under some extent of certainty. Particularly, creating a joint-venture with competitor can effectively cope with many problems arising from implementation of ICC because decision-making in ICC has some characteristics similar to those of so called "organized anarchy" (Cohen et.al., 1972). Specifically, the nature of decision-making process under ICC shows 1) quasi resolution of conflict and 2) learning process. Given that each competitor brings each own different interest into the ICC even though they

seek collective benefits, devices for quasi resolution such as ‘local rationality’ and ‘acceptable-level decision rules’ might be necessary devices for dealing with the inherent problem of conflicts between partners. Also, mainly due to bounded rationality that I mentioned above, decision-making process under ICC is a learning process, where the firms learn as they go rather than begin with all required information. In this respect, joint-venture can be an effective tool for following reasons. Firstly, it extends the bounds on rationality. Although the rationalities of each partners in ICC are still limited, joint-venture enable the partners to exchange more information and even impose penalties for opportunistic behavior such that it can partially solve the inherent problem of decision-making in ICC. Also, by forming a joint-venture with partners, the firms are better able to deal with complex problem by splitting a complex problem into smaller sequential orders. By doing so, the firm pays attentions to a given aspect of situations as they gradually move forward rather than all at once. For these reasons, joint-venture can be reasonably the best solution for the successful implementation of ICC. However, in chapter three which examines the effects of influential power toward the unexpected dissolution of JVs between competitors, I argue that although shared ownership in joint-venture weakens some of the incentives to disrupt the venture for the benefit of individual goals, equity shares short of full ownership still cannot fully resolve the potential for competitive conflict in the mixed-motive situation, which is the reason why even ICCs with the realization of joint-venture still experience high risk of failure.

2.3 Why firm cooperates with competitor?

Now it is a time to answer the most fundamental question; why firm engage in inter-firm collaboration with competitors. My empirical essay on influential power

implicitly treats the existence of ICC (e.g. joint-venture between competitors) as a given and therefore does not pay separate theoretical attention on the formation of collaboration entity with competitor, which makes the study relatively skewed to only explaining the dissolution of it. However, because cooperation with competitor is clearly not an outcome from random experiment, but the result from strategic decision made by the firm, theoretical consideration on the question of why firm decide to cooperate with competitor is recommended for the complete understanding of ICC. Unfortunately, unlike the studies on the antecedent of general types of inter-firm cooperation (e.g. R&D alliance with suppliers, distribution consortia with customer), few studies on the antecedent of ICC have been conducted so far, thereby making literature review based on prior studies and/or findings almost difficult, if not impossible. So, theoretical frameworks on the antecedent of ICC in this section has great research potential for empirical testing in future research.

We can take mainly three theoretical approaches to the antecedent of ICC. The first approach is ‘population ecology of organization’ (Hannan & Freeman, 1977). This approach does not view inter-firm cooperation between competitors as an intended outcome made by firms. Rather, this approach tends to see that ICC is a natural and widespread phenomenon resulting from the adaptive process of organizational population toward changing business ecological environment. The rationale based on the first approach has high validity especially when 1) change in an organization is largely uncontrolled, 2) what happens is more disorganized than what management planned, and 3) differing views, unreliable information, and unexpected eventualities make it unsure whether they will get what they want. Indeed, given that recent business environment becomes more complex and uncertain, this ecological perspective has some contributions to understanding recent business trend in ICC. However, this

approach has some limitations in that it questions the effectiveness of the efforts commonly undertaken to re-structure existing companies as managements try to keep up with change. Indeed, considering organizations as passive entities which do have little control over their formulated strategic objectives is rather far-fetched assumption. When it comes to the cooperation with direct competitors, it is more reasonable to see ICC as an outcome arising from purposeful decisions made by active organizations in order to survive and adapt to external changing environment. This consideration which views individual firm as an active entity leads to following two approaches.

Second approach is a 'resource-dependency approach' (Pfeffer & Salancik, 2003), which analyzes the companies in terms of their inter-dependence with others organization in the environment. So, unlike ecological perspective which sees ICC as an unplanned outcome irrelevant to organizational strategic action, resource-dependency approach assumes that it is an outcome arising when resource-interdependent firms interact with each other. If we take second approach, we can understand ICC as one of strategies that the firm may utilize to balance its dependencies, as argued by Pfeffer and Salanick (2003). According to their view, resource-dependent company may negotiate its environments by interlocking directorships or joint ventures with other firms or by other association. In other words, by cooperating with competitors either via alliance or joint-venture, firms may obtain from partner the valuable resources, which they lack. However, although resource-dependency approach can be applied to the case of ICC as well, it might be better theoretical perspective for the antecedent of vertical and horizontal inter-firm cooperation because high degree of asset homogeneity is likely to exist between competitors in the same industry, which reduces the value of collaboration in terms of resource complementarities.

Final theoretical framework to answering the question of why firm cooperate

with competitors is based on ‘organizational learning approach’. Unlike previous approaches, the last approach highly emphasizes the importance of active organizational learning capabilities toward the success and survival of firms. Specifically, this approach embraces the idea that currently firms are in situations that require continuous learning and development (Senge, 2006). Indeed, mainly due to the globalization, development of information technology, and fast paced product innovation, many recent firms face a business environment where classification of industry and competitor based on traditional insight becomes increasingly obsolete. Furthermore, even clear identification of competitor in the market becomes more difficult. Thus, in this complex and uncertain situation, final approach argues that firm needs to become more open-minded to effectively learn and innovate (Argyris, 1997, Senge, 2006). So, organizational learning approach emphasizes the significance of active organizational role. Interestingly, the normative prescription suggested by last approach could be opposite from that of ecological perspective because first approach would probably advise there’s nothing company can do in the face of changing environment and therefore it would probably provide the recommendation of founding a new form of company suitable for new business ecological state. On the other hand, according to the last approach, ICC can be regarded as an outcome resulting from purposeful endeavor by firm to become so called ‘learning organization’. In this regard, firms intentionally cooperate with competitors by establishing, for example, jointly-owned R&D department for the pursuit of becoming learning and innovating firm. By doing so, ICC would have positive effect on the generation of scientific knowledge and technology required for the development and innovation of product. If we take the last approach, we can have better understanding of why there are relatively many cases of ICC especially for high-tech industries and relatively less in traditional industries. Part

of reasons is that in high-tech industries, it is important for firm to effectively learn either through internally or externally and to innovate its product and service continuously based on knowledge obtained from learning process to be successful in the market. So, the last one seems to be the most appropriate perspective for the recent increasing ICC formation rate in high-tech industries.

2.4 ICC as a potential source of firm's competitive advantage

So far, although I try to provide theoretical insight about the understanding of the antecedent, decision-making process, appropriate governance structure, and the unstable nature of ICC, there is a lack of explicit theoretical endeavor in trying to analyze ICC in terms of the strategic management perspective. Theoretically, it means that we need to address the issues of ICC in relation to the competitive advantage of the firm. In other word, it is theoretically desirable to pay attentions toward the question of whether ICC could be potential source of firms' competitive advantage. However, similar to the situation that I face when trying to answer the question of why firm cooperate with competitor, there have been not much prior attentions by management scholars on this issue. Thus, theoretical endeavor in analyzing the ICC through the lenses of competitive-advantage has considerable research potential in the future research.

But firstly, given its significant role in comprehending ICC from the strategic management perspective, it is important to have a clear conceptualization of competitive advantage. There is a theoretical consensus among management scholars that competitive advantage happens if the firms (or organizations) acquire or generate an attribute or combination of attributes that enables it to do better than its competitors. And it is generally accepted that the more the firm has a competitive advantage vis-à-

vis other competitors, the more likely that the firm with higher level of it has the greater likelihood of better performance and survival in the market place at the firm-level. Based on this fundamental comprehension on the importance of competitive advantage on the firms' performance and survival, most strategic management scholars, therefore, have paid a significant amount of theoretical interests toward identifying the main sources of firms' competitive advantage. So, historically, organizational economists and the scholars in the strategic management have had relatively narrower research domain of organization compared to that of organization theorist and organization sociologist.

Then, how inter-firm collaboration with competitor can be a potential sources of firm's competitive advantage? Firstly, by cooperating with competitor, the firm is able to further increase its market power and/or the extent of current market barrier in comparison with other firms in the same industry which do not engage in collaboration with competitor. Similar to merger and acquisition, ICC can be an effective mechanism to the participating firms for strengthening their current market power. Even though firms might not create a complete dominance, they may be better able to influence market environment and structure favorably by restraining the level of competition especially when the firms have considerable power within the industry such as Apple in IT and Toyota in automobile industry. However, given the fact that most governments in recent developed countries have restricted the establishment of cartels and other collusive actions in order to instigate competition for the benefit of consumer, I firmly expect that recently few ICCs are undertaken due to the mere pursuit of increasing market-power or decreasing the extent of competition within the industry. Rather, as I mentioned above, increasing number of firms currently engage in ICC for the pursuit of learning and technological innovation as the economic system has gradually shifted from the traditional hierarchical capitalism toward the knowledge- and technology-

based economy. In this respect, ICC can be a valuable tool for the sources of firms' knowledge- and technological competitive advantage. Specifically, by sharing core information, knowledge, and complementary technological assets only with the partners, ICC excludes other firms from having access to them. In addition to obtaining valuable inputs for the creations of the knowledge and innovation, the firm might be able to reduce the costs of transaction if the ICC can increase the efficiency of the partner. In other word, by creating relation-specific knowledge, assets and routines, the ICC can provide competitive advantage to the partners. In addition, by cooperating with competitors for the pursuit of collective benefit instead of self-interest goals, ICC can be a source of firms' competitive advantage if the ICC plays important roles in successfully obtaining governmental support and/or socio-legitimacy. For example, ICC could be an effective tool for the partner firms to create institutional environment in a way that support their business favorably. This is the most possible scenario especially for the infant industries where there is a lack of 1) clear established consensus on business model, 2) supporting infrastructure such as vocational education school for the supply of competent employees, 3) socio-legitimacy among the community member to approve its business operation, and 4) of comparative advantage vis-à-vis that of the established firms in other industries. In short, similar to organization in the early phase, nascent industry also face a number of problems, which could put the entire industry into danger. Therefore, in order for infant industries to overcome these difficulties, the constituent firms in these industries might need to cooperate together to some degree for the pursuit of collective objectives such as obtaining the socio-legitimacy or governmental support instead of just pursuing short-term self-interest economic profits.

Chapter 3: The effect of influential power of the partner within the industry toward the failure of cooperative joint-venture between direct competitors

3.1 Introduction

There have been considerable research interests among the strategy and organizational scholars toward a cooperative Joint Venture (JV), which entails the creation of a new entity with shared equity between partners. But, these research interests have skewed relatively to the antecedent of formation of such cooperative relationship and consequence which happens to the firm once it formed JV with others. Previous studies showed that the superiority of governance structure (Hennart, 1988), the impact of advancing technology (Clark, 1989), and the value of network organizations (Miles & Snow, 1986) are part of theoretical motivations for the formation of JV while, as Brass et.al's review (2004) has shown, transfer of information and skill, differential access to resources and power, and mediating transactions among partners are three basic replicated findings of consequences. While the questions of early studies in this research stream focus on 'why JV is good strategy?', several researchers, since mid 1980s, have begun to investigate the performance of JV by observing the termination of it, which seeks to answer an important follow-up question, 'why do so many JVs fail?' (Park & Russo, 1996).

The main focus of my research is also the failure of JV, particularly between direct competitors. Specifically, the objective of my research is to further sophisticate our understanding of complex nature of the unstableness of inter-firm cooperation. Then why are particularly JVs between firms competing in the same market given that there are also numerous different kinds of JVs between firms and suppliers, customers, and others? There have been both theoretical and empirical consensus among researchers that JVs are more likely to be unstable if partners are direct competitors. Several empirical studies demonstrated that JVs formed between direct competitors

experience a higher dissolution rate than those between indirect competitors for a number of reasons. For example, Kogut (1988) argued that the fear of competitive rivalry that leads to a JV's formation might also contribute to its eventual demise. Moreover, in a JV between competitors, goals are likely to be in direct conflict, and the venture can be detrimental to the attainment of such conflicting goals (Park & Ungson, 1997). Though these accounts provide us with some insights regarding the effect of direct rivalry between partners on the relative failure of JV, there is a lack of theoretical explanation of why there are differential likelihoods of the failure of JV between direct competitors. In other words, while the risk of dissolution of JVs is generally higher for those between direct competitors than those between indirect competitors, it could be further possible that there might be varying degrees of unstableness among JVs between direct competitors depending on certain factors. And in my research, based on the transaction-cost economics and situational assumption of 'mixed-motive interaction' that partners face for continuing cooperative behavior with competitor through JV, I argue that it is the influential power each partners exercise within the industry that causes JVs between direct competitors to have differential risk of dissolution.

Of course, studying failure by looking at dissolution is limited because it cannot distinguish between natural and untimely deaths. One reason that so many JV end is that they are predestined to do so by the parent firms at the very outset (Gulati, 1998). Also, Berg and Friedman (1978) documented several cases in which JVs were terminated, not because of failure, but as an outcome of success. They argue that a successful JV can become critical to one of its parent's overall businesses, therefore prompting this parent to turn the venture into a wholly owned subsidiary. In both of above cases, as Gomes-Casseres (1987) has argued, termination can be a paradoxical sign of success rather than a failure. These considerations clearly show the major

limitations of earlier work which placed all cases of instability in a negative light, but more recent contributions have assumed that such instability may not always represent failure. With these concerns in mind, my specific focus here is, thus, on the dissolutions of JVs that are unplanned. Also, I do not consider any JVs terminated due to acquisition by one of partners as a sign of failure because disagreements exist in the literature regarding whether the acquisition of a JV implies the failure of its activities. (Geringer & Hebert, 1991; Parkhe, 1993). Thus, following Park & Ungson (1997) and Park & Russo (1996), I do only consider unplanned liquidation or sale to third parties as the operational definition of JV failure and does not regard either planned termination or acquisitions by one of partners. Due to measuring JV dissolution in these narrow terms, I should accept some trade-off between internal consistency within a sample and external validity because it is difficult to draw a complete random sample from the entire spectrum of joint ventures that meet the requirements for external validity. The more detailed account of sampling to deal with these problems is provided on the following measurement section.

To briefly explain what I plan to do in my research, I first review the literature and show how previous studies lack for insights on the failure of JV between competitors. Next, I analyze resource-dependency (R/D) and reciprocity theories which might be theoretically comparable to the influential power concept. And then I introduce the concept of mixed-motive interaction and assume that when it comes to cooperating with competitor, individual firm is situated in the mixed-motive interaction in which there is a conflict between self-interest benefits via competition and benefits for the self and others via cooperation. Based on this situational assumption, I hypothesize that different levels of influential power each partner exercises over the industry can have varying impacts on the stability of JV. Specifically, I argue that due

to different levels of influential power, each partner has unequal net value (gain minus cost) of JV and, thus, differential incentives to cooperate with partners, which ultimately leads to various hazards of dissolution. To empirically test this hypothesis, I conduct the event-history analysis with Cox regression (Proportional hazard model) to provide an estimate of the contribution of the covariates to the likelihood of cooperative joint-venture dissolution. Finally, I will discuss several contribution and limitation of my research.

Before moving to next literature review section, I want to mention that in this paper, I assume that though shared ownership weakens some of the incentives to disrupt the venture for the benefit of individual goals, equity shares short of full ownership cannot fully resolve the potential for competitive conflict in the mixed-motive situation.

3.2 Previous Research

Instead of broadly discussing instability of JV, which in general includes not only failures, but also acquisitions of the successful operations by one of its partners, the focus of my review on literature is limited to a termination that is unplanned and premature from the perspective of either one or both partner's. By doing so, I hope to increase the relevance of my research to the previous studies that paid attentions to an unexpected event of dissolution.

In the joint venture literature, there are several studies that have defined the instability concept more narrowly, that is, instability as termination, and documented the tendency of JV to fail. Kogut (1989) examined JV termination through dissolution, as it reflects "more distinctly either a business failure or irresolvable conflict among the partners" (1989, p.187). Of the 92 manufacturing JV sample, he found that 27 were terminated through dissolution and 37 through acquisitions. According to his results,

dissolution was found to be influenced positively by changes in industry concentration and growth rates, and to be influenced negatively by concurrent ties among the same partners, which facilitated reciprocity. He analyzed the instability of JV in a cross-industry setting and carefully classified all termination into two groups, separating dissolutions from acquisition, which had seldom been grasped in prior research. Harrigan (1988) explored the 895 inter-firm alliances formed between 1974 and 1985 and found some support for the idea that strategic asymmetry between partners such as difference in nationality, size, and prior JV experience increases instability. She reported that about 55% of the 895 inter-firm alliances in the study were terminated and thus unstable.

During 1990s, studies on this topic have begun to research instability in the international business settings. Defining termination operationally as either liquidation or sales to a third party, Park & Ungson (1997) used the sample of 186 international joint ventures in electronics industry formed between 1979 and 1988 to test their hypothesis. Their empirical studies found interesting results that although no significant effect of cultural distance on the dissolution was found, U.S-Japan international joint ventures lasted longer than U.S-U.S ventures. Their results also supported the positive effect of prior experience on the relationship stability. Similar research was also conducted by Hennart et.al (1998), which mainly focused on three types of termination (sell-off, liquidation, and exit) from the sample of 284 Japanese affiliates in the U.S in 1980s. Their results showed that a higher rate of exit was attributable to sell-off and factors in termination by sell-off were different from those in termination by liquidation.

Recently, several scholars have paid attentions to the effect of social structure on the termination. Considering the hazard of unplanned JV dissolution as a dependent variable, Polidoro et.al (2011) build the model and tested the impacts of positional

embeddedness (network centrality) and structural embeddedness (common partners) on current tie stability between partners. The study showed structural embeddedness does help sustain alliances, particularly when partners have strong incentives to pursue self-interest at the expense of joint benefits. This study shows how the aggregate network of relationships among a set of firms affects JV survival, moving this literature beyond the traditional dyadic level of analysis.

In my view, the review of previous studies on the failure of JV confirms the need for research that would further sophisticate our understanding of complex nature of JV failure. Although several careful empirical inquiries have shed a light on some of the important factors that may be associated with the termination, such as industry conditions (growth rate and concentration), dyadic conditions (the presence of concurrent ties, partner asymmetry, the age of alliance, and the competitive overlap between partners), characteristics of the venture itself (autonomy and flexibility) and characteristics of parents (parent firm's financial problem), none of these studies specifically addressed JVs formed between firms competing in the same market. Therefore, although previous studies can have significant contributions for general insights on JV failure, there is a lack of theoretical explanation of why there are differential likelihoods of failure of JVs between direct competitors. Part of reasons stem from the fact that most of samples used in prior studies are not appropriate for this narrower research question, which only focuses on JVs between direct competitors. Most of prior studies I have reviewed were so engrossed with the issue of external-validity that their samples included not only JVs between direct competitors but also other kinds of JVs such as vertical JV with suppliers or clients, or horizontal JV with firms in other business industries. In my research, I attempt to increase the internal validity by specifically focusing on JVs formed between partners in the same industry.

By doing so, I must acknowledge some loss of external validity of my results.

3.3 Resource-dependency and reciprocity theories: Established perspectives comparable to the influential power concept

While previous section conducts literature review based on the prior studies which examined various antecedents of JV failure, this section introduces resource-dependency (R/D) and reciprocity theories which might be theoretically comparable to the influential power concept. So, I will explain how each established theory provides the insight regarding alliance dissolution. Both R/D and reciprocity theories are chosen because my theoretical perspective is comparable to them in that a) they seek to explain strategic actions undertaken by firms in relation to other firms in their industry and b) inter-firm relation is a basic unit of analysis. By doing so, I try to increase the novelty of influential power concept. Indeed, one of the problems facing current management academic community is the predominance of new similar concepts and perspectives by later researches without thorough recognition of established theories and consequently redundancy of new ideas (Hambrick, 2007). So, the objective of this section is to fully understand similar established perspectives, and therefore to avoid an indiscreet academic behavior.

But, in order for us to follow the discussion easily, I firstly introduce the definition of influential power before analyzing established perspectives. I conceptually define the influential power as the power relative to the industry as a whole and as the sum of three dimensions, which are (a) financial-based power, (b) market-based power, and (c) technology-based power. So, the firm is considered as being powerful within the given industry when its net asset (financial-based), annual sale (market-based), and the number of patents (technological-based) are great compared to other firms in the same industry. In this respect, we could consider, for example, Apple (IT industry) and

Toyota (Automobile industry) as having high degree of influential power within the industry whereas HTC (IT industry) and Kia (Automobile industry) is regarded as having medium-level of it. In my research, I argue that the risk of unexpected terminations of JVs formed between direct competitors could be influenced by average influential power that each partner can exercise over the industry. In other words, as firms becomes more powerful within the industry, they face greater incentive to cooperate with competitor through sustenance of current JV than to pursue self-interest benefit through opportunistically dissolving collaboration.

The first established theory comparable to the concept of influential power is the ‘Resource-dependency’ (R/D) theory. By assuming that firms cannot obtain all of necessary resources alone, R/D scholars argue that firms need to interact with other organizations in order to acquire what they want and to survive, thus regarding firm dependent upon other organizations in terms of resources (Preffer & Salancik, 2003). Creation of JV can be, therefore, one of the efficient strategic decisions to manage resource-dependent position with others. Through JV, each partner firm can not only safely obtain required resource from other partners but also lessen any transaction risk (Richard & Yang, 2007; Preffer & Salancik, 2003). According to R/D theory, as the value of each partners’ resource becomes greater, as its retained resource becomes less substitutable and therefore as partners becomes more resource-dependent with each other, the inter-firm cooperative relation becomes stronger and more stable. So, R/D theory views the degree of inter-firm dependency among partners as an important determinant for the stability and success of inter-firm cooperation.

Secondly, ‘Reciprocity-theory’ (Tit-for-Tat) is another established perspective in the study of stability and performance of inter-firm collaboration. According to Schelling (1960), relation stability may be preserved through the exchange of hostage,

which could be understood as potential for reciprocity. In particular, the scholars in this view argue that when partners recognize that they are situated in the mutual hostage position against each other, then partners are less likely to behave opportunistically for the pursuit of self-interest goal due to concern over the ‘tit-for-tat’ behavior (retaliation by one partner against another). Thus, less likelihood of opportunistic behavior by partners leads to more stable cooperative relation between them. Interestingly, unlike R/D theory that focuses on resource-dependent position, the reciprocity approach attempts to explain the stability of inter-firm collaboration in terms of partners’ capability to retaliate against another for potential opportunistic behavior. Therefore, it can well explain how ‘mutual forbearance’ (Buckley & Casson, 1988) arises from the partners’ awareness of tit-for-tat behavior and how that forbearance ultimately provides positive impact to the stability of inter-firm cooperation.

With the recognition of R/D and reciprocity theories, I will control these theories in the statistical models in addition to independent and control variables for predicting the likelihood of JV failure. By doing so, I want to compare the relative significance of each perspective (R/D, reciprocity and influential power theory) and demonstrate that although both R/D and reciprocity theory might provide good insight about the stability of inter-firm collaboration in general situation, they have relative lack of explanation particularly for the failure of inter-firm JV between competitors because these two perspective do not explicitly consider distinctive circumstance that partner faces when cooperating with competitors through JV, which is so-called ‘mixed-motive interaction’.

3.4 Mixed Motive Interaction and JV between Competitors

Before I introduce the concept of mixed-motive interaction, I first need to mention that I take a multilevel perspective in my research for complete understanding

of behaviors occurring at firm-level. Specifically, I apply micro-level (individual) theory to phenomena examined at the macro-level (organization). In doing so, I think we could come up with better insights for the failure of JV formed between direct competitors. It is apparent that multilevel thinking has been increasing in importance among management scholars and multilevel considerations are more likely to be reflected in recent studies (Hitt et.al, 2007).

Then what is the mixed-motive interaction? Mixed-motive interactions, including social dilemmas and bargaining encounters, pose a conflict between securing personal benefits through competition and pursuing benefits for the self and others through cooperation with other people (Sheldon & Fishbach, 2011). The most well-known example of this would be the ‘tragedy of commons’ discussed by Hardin (1968), which describes a community situation in which each member’s short-term interest is to graze as many cows as possible on a shared plot of land, but in the long-term, such self-interested behavior will damage the commons for both the individual and other people (Messick & Brewer, 1983). Although this mixed-motive interaction has been studied from the camp of micro experts who are rooted in psychology and, therefore, has been focused mainly on its effect toward thoughts, feelings, and actions of individuals, I think this micro-level theory of mixed-motive interaction can be applied to macro-level as well to improve our understanding of some aspects of firm’s behavior. In other words, I argue that similar conflict is likely to characterize partner’s behavior when there are inter-firm cooperative relationships. The assumption of mixed-motive interaction is much sounder particularly for the case of JVs formed between direct competitors in the same industry than for the cases of other types of JVs formed with suppliers, customers or indirect competitors in other industries. In JVs formed between competing firms, where present friends can easily become future foes (Morris &

Hergert, 1987), JV could invariably affect the competitive positions of the participating firms. Also, considering that JVs are designed to meet the goals both of individual firms and of the collective undertaking, incentive to obtain self-interest benefit by behaving opportunistically can be more likely to happen when the partners are direct competitors. In this regard, partners of JV between direct competitors are situated in the mixed-motive interaction in which there is a conflict between self-interest benefit via competition (dissolution of JV) and benefits for the self and others via cooperation (sustenance of JV).

Based on situational assumption, let's conceive of several expected gains and costs, which would result from pursuing either self-interest benefits through competition or benefits through cooperation with partner. One of expected gains that partner would obtain when it navigates its business alone rather than together is less uncertainty in achieving its planned goals. I do not mean that doing businesses alone is more advantageous to predicting and responding to uncertain external environments. My focus of uncertainty, here, is on daily operational aspect. Indeed, several authors have argued that the sheer complexity of managing a joint venture can be a significant impediment to success (Killing, 1988). Communications systems can suffer from attempts to harmonize people, policies, and procedures taken from distinct parent firms, greatly complicating management. And organizational politics are not dormant in JVs (Doz, 1988). So, although dissolution of JV might cause less efficient use of firm's internal resources than before, firm might decide to discontinue its cooperation with partner for the pursuit of certainty on achieving its planned objectives. Also, since present partner can easily become future foes competing in the same market, each partner prepares proactively to be able to grab new opportunities more promptly than competitors. In such case, one of necessary actions would be, paradoxically, to

terminate current JV formed with direct competitors. As Hennart et.al (1998) argued, it is important to recognize that exit from strategic alliances sometimes are an important strategic action to pursue its individual goals. Given partners' need for exposure to new learning and new markets from different partners so that they could be winner in the future, the stability of the cooperation would be not primary importance (Jones et.al, 1998).

However, there are several trade-offs on unexpected dissolution of cooperation with partners. The victim of JV dissolved unexpectedly by counterpart's pursuit of self-interest benefit could be likely to retaliate against partner thereafter (Dollinger et.al, 1997). In addition, the loss of loyal customer (Grégoire, 2009), and of firm reputation (Asthana et.al, 2003), and market disorder due to competition (Steele, 1962) could be another examples of expected cost of unanticipated dissolution of JV. Once labeled an opportunist, it becomes difficult for a firm to pursue and maintain inter-firm transaction relationships in the future with other firms. The most significant cost of dissolution would be less efficient usage of internal firm resource due to monitoring and protecting against competitors resulting from market disorder and distrust toward other firms in the industry. Certainly, distrust can be severe cost since it brings less efficiency to all participants, which are embedded in the industry network (Lewicki et.al, 1998).

On the other hands, when it comes to cooperating with partner through JV, we could also think of several expected gains and costs. As Brass et.al's review (2004) has shown, each partner can (1) obtain differential access to resources and power, (2) have more capability to generate innovation through transfer of information, knowledge and skill among partners (Mowery et.al, 1994) and (3) decrease operational cost through transactions among partners. Also, firm might get the feeling of relief and various benefits from market stability.

However, we can also conceive of several costs for cooperating with partners instead of doing a business alone. Firstly, it could be possible that firm's internal information and skills are disclosed to partners especially if certain task of cooperation requires high level of integration between them (Ferreira & Rezende, 2007). The amount of damage to the firm would be greater if information and skills are secret and key factors for its present success because the firm is more difficult to sustain competitive advantage against competitors with disclosed skills and know-how. It is also possible that firm would be less flexible and, therefore, are disadvantageous to proactively taking new opportunities because of current relational embeddedness arising from JV with partners (Granovetter, 1985).

With the appreciation that there are potential gains and costs from pursuing either collective goals or self-interest goals, I will make an argument in the next section that as partner becomes more powerful within its industry, it has more incentive to sustain its current JV activity with competitor.

3.5 Hypotheses

Average Influential Power and JV Failure: In this hypotheses section, based on the assumption that partners of JV between direct competitors are situated in the mixed-motive interaction in which there is a conflict between self-interest benefit via competition (dissolution of JV) and benefits for the self and others via cooperation (sustenance of JV), I will argue that the likelihood of JV failure declines as influential power each partner can exercise within the industry becomes greater. Following previous studies on JV failure, my research also adopts the perspective of transaction-cost economics for the discussion of "termination-or-sustenance" decision. Park and Russo (1996) said that though much of transaction-cost economics literature centers on

theoretical motivations for the formation of economic organizations (make-or-buy decisions), it can also be used to study JVs' failure. So, the basic formula behind the unexpected dissolution of JV is that the firm is less likely to discontinue its current JV activity with competitor so long as benefit from cooperation (sustenance of JV) is bigger than benefit from pursuing self-interest goals (dissolution of JV).

In my research, I argue that the likelihood of failure of JVs formed between direct competitors could be influenced by average influential power that each partner can exercise over the industry. The main reason is that different levels of influential power make the firm encounter unequal incentive to cooperate with competitor in the mixed-motive interaction. Specifically, as company exercises bigger influential power over the industry, it faces greater value from pursuing collective goals through sustenance of cooperation than from pursuing self-interest goals through opportunistically dissolving current cooperation with competitors.

Firstly, with all conditions being equivalent, the partners with high influential power are more likely to easily overcome so-called 'liability of newness' problem when they cooperate together by creating a new JV. If we think of newly-created JV as a 'nascent organization', then that newly-created business entity would have relatively more difficulties in acquiring essential resources and therefore in implementing its business operations compared to already established (or well-known) firms in the market. (Aldrich & Ruef, 2006; Bruderl & Schussler, 1990). For example, due to lack of reputation or legitimacy within the market, newly created firm cannot easily obtain essential resources such as capital, employees, and network for suppliers and customers (Singh et al., 1986). Also, it has lower competitiveness than established firm because of lack of knowledge, experience and technology required for successful maneuver in the given market. In this situation, highly influential firms can provide those essential

resources more easily into the JV than less powerful firms so that newly-created JV can successfully implement its initial objectives without significant trouble in resources. Furthermore, newly-created JV can even overcome the difficulty in obtaining resource from external communities that arises from lack of reputation and legitimacy because sometimes the existence of highly influential firm as an equity-holder in the JV can provide positive signal to external stakeholders that newly-created JV can be insured by its powerful partners in the case of potential business crisis. In addition, given its superiority of financial-, market-, and technological-based capabilities, the inter-firm cooperation between highly influential partners can have greater positive effect to the achievement of initial collective goals such as innovation of new product and/or process, creation of new knowledge or even new market. For example, according to the studies of Cantwell (2008), new technologies and scientific knowledge are more likely to happen in proportion as firm gradually increases its distinctive technological competence. Therefore, with all conditions being equivalent, cooperation formed between highly influential power firms tends to bring more positive benefit to its partners. At the same time, for powerful partners in the industry, the expected cost arising from pursuing self-interest benefit by unexpectedly dissolving current cooperation is bigger than expected gain because competition and mistrust between two powerful firms in the industry would bring relatively more severe market disorder, which would undermine harshly its current successful position in the industry. Also, given their current successful market status in the industry, if one of partners pursues self-interest benefit by behaving opportunistically, it could face the loss of loyal customer (Gregoire, 2009), and of embedded firm reputation and legitimacy (Asthana et.al, 2003) as a result. In other words, the value of market stability by pursuing benefit for the self and others through cooperation with competitor is greatest to the firm with

highly influential power given that their preference to sustain their current successful position in the industry.

On the other hand, as firm becomes less powerful within the industry, it faces decreasing value from pursuing cooperation with competitors while it has more incentive to pursue self-interest benefit for the following reasons. Firstly, the less powerful within the industry, the more unsatisfied with its current position in the industry and thus more likely to desire to ultimately become highly powerful firm such as Apple in IT industry and Toyota in Automobile industry. As a result, it is more inclined to view current JV with partners as a device (tool) for enhancing its individual advantage through learning and exposure to new ideas and skills rather than a device for collective benefits through stable long-term cooperative relationship. Given the firms' need for exposure to new learning and new opportunities from various partners, the stability of JV is not of primary importance to the less powerful firm. Also, considering its relative inferiority of financial-, market- and technology-based capabilities and firm-specific knowledge, the expected gains from pursuing collective benefit through collaboration such as new technology, product, or even new market are not very considerable compared with cooperation formed between highly influential power firms. In addition, given its relative lack of current market power, market disorder resulting from unplanned dissolution of cooperation between lower-level of influential power firms is not very severe, which, in turn, provide additional incentive to pursue self-interest benefit by lowering the cost of opportunistic behavior.

To sum up, I argue that under the mixed-motive interaction, as the partner's influential power over the industry increases, partner faces greater incentive to pursue collective goals with competitor through sustenance of JV than from pursuing self-interest goals through dissolution of JV. So, the TCE approach in the decision of

‘termination-or-sustenance’ of inter-firm collaboration may imply that there is a negative relationship between partners’ average influential power and the likelihood of JV failure.

Hypothesis 1: *The relationship between influential power and unplanned JV dissolution is negative such that the likelihood of JV failure declines as influential power each partner can exercise within the industry becomes greater.*

Ownership structure and JV Failure: In the second hypothesis, maintaining situational assumption of mixed-motive interaction and TCE approach, I argue that as the structure of ownership-share of JV between the partners gets closer to ‘50 vs 50’, the probability of JV failure becomes smaller. Note that while the first hypothesis deals with the effect of influential power of partners relative to the industry as a whole, the second one focuses on each partner’s power over the JV itself through ownership share.

Among the various types of inter-firm collaboration, JV is a very distinctive one in that it leads to each participant’s high involvement into collaboration by making them to share ownership in the collaboration entity. In terms of structure of ownership-share among partners, some JVs could provide more likelihood for the partner to behave in an individualistic way for the pursuit of opportunistic self-interest goals. Specifically, if one partner holds extreme majority share of JV (let’s say 90% equity-holder), then this partner (majority shareholder) is more likely to behave individualistically and opportunistically without paying significant attentions toward the other partner (minority shareholder) since a minority shareholder in a JV usually do not have much influence to control JV’s management and thus its existence is sometimes ignored. Indeed, recent study by Westman and Thorgren (2016) demonstrates that the risk of partner conflict is most severe and likely when JV is shared unequally among partners due to majority owner’s engagement of opportunistic behavior to pursue self-interest

goals. So, severe imbalance in partners' ownership share in JV could cause inter-firm conflicts and even failure of JV in the form of unplanned dissolution. However, if the ownership-share gets closer to '50 vs 50', neither partners can easily conduct individualistic behavior with ignorance of the other partner because of mutual check from balanced ownership-share.

Thus,

Hypothesis 2: *There is a negative relationship between the ratio of ownership-share among the partners and the likelihood of JV failure such that as the ratio of ownership share gets closer to '50 vs 50', the likelihood of JV failure becomes lower.*

3.6.1 Data

I firstly obtained initial list of JVs that were formed between 2001 and 2009 in all industry from *S&P Capital IQ*. This database is one of the most comprehensive sources for empirical study on JVs because it provides the life histories of focal joint-ventures (e.g., initial investment and investment exit of partners, bankruptcy of venture) as well as supplementary information relevant for focal joint-venture activity such as partner-level (e.g., financial data for publicly traded partners), transaction-level (e.g., transaction value) and industry-level information. The sample size of the initial list was 1,687. Then among this initial list, in order to increase the internal-consistency of results, to decrease confounding problem, and to acquire necessary information, I only selected those JVs that: (a) were formed between firms whose primary 4-digit SIC codes are same, (b) had no more than two partners, (c) had a partner with a share of at least 10% of JV equity, and (d) were formed between partners whose specific firm-level data for both independent and control variables were available from database such as *Compustat*, *Moody's Corporate Report*, *company annual reports*, *publication*, or *other public sources*. After I chose only those JVs which satisfy above four selection criteria,

the sample size decreased from 1,687 to 188. Then I traced the life-histories of these 188 JVs through the information about the JV partners' investment exit or sell-off provided by *S&P Capital IQ* by the end of 2015. To ensure that termination was not previously determined by partners so that it was an unexpected event, I identified and analyzed all news reports on each terminated JV in the sample from Factiva database, which covers thousands of newspapers around the world.

However, as I mentioned earlier, considering practical difficulty in the study of JV to draw a complete random sample from the entire spectrum of JVs that satisfy the requirement for external validity, I have to acknowledge some loss of external validity of my research results.

3.6.2 Measurement

Dependent variable: The dependent variable in my study is the hazard of JV dissolution in a given year due to partner's opportunistic behavior for the pursuit of self-interest goals. In this regard, I did not consider the case of alliance termination due to the acquisition by one of partners because disagreements exist on whether the acquisition of a joint-venture implies the failure of its activities arising from partners' opportunistic behavior, although several prior studies viewed this case as an indirect sign of failure as well (e.g. Pangarkar, 2003). Specifically, Gomez-Casseres (1989) argued that joint-venture is often an intermediate organizational form, in the sense that it is often succeeded by a different arrangement more appropriate to changed conditions. Therefore, following previous studies (Kogut 1989, Park & Ungson, 1997), I used unplanned liquidation or sale to a third party as the operational definition of JV failure. I created a dummy variable for each dyad in each year until the year of failure or until end of 2015, whichever occurred first; this variable was coded 1 if the JV dissolved due

to unplanned liquidation or sale-to-third party in that year and 0 otherwise. So, dissolved JVs for other reasons such as acquisition or natural termination were treated as censored rather than failed, which is not unusual approach in empirical studies on organizational failure (e.g. Bermiss & Murmann, 2015; Park & Ungson, 1997).

Independent variables: Next, given that firm's *influential power* is conceptually defined as having three dimensions (market power, financial power, and technological power), I measured each partner's influential power as the sum of three proxies, which are

$$(1) \frac{\text{annual sales}}{\text{the average of annual sales of top 20 firms in the industry}} * 100 \text{ (market power),}$$

$$(2) \frac{\text{net asset}}{\text{the average of net asset of top 20 firms in the industry}} * 100 \text{ (financial power),}$$

and

$$(3) \frac{\text{total number of patent}}{\text{the average of total number of patent of top 20 firms in the industry}} * 100$$

(technological power).

For calculating the average value of top twenty firms in the industry, I identified each top twenty firms in the industry based on the ranking by annual sales for market power, the ranking by net assets for financial power and the ranking by total number of patent for technological power. So, it is possible that some firms included in the list of top 20 influential firms in the industry by market power, for example, are not included in the list of top 20 influential firms by financial power or technological power though in my study many firms are included in all three lists. Then, I took the average value of two partners' influential power for given JV and use this average value for independent variable.

The structure of *ownership share* among the partners was calculated by the percentage of minority shareholder divided by that of majority shareholder. So, for

example, if the equity ratio between two partners is 3 : 7, this variable was coded as value of 0.4286 ($=3/7$).

Control variables: I controlled for possible confounding effects by including several relevant variables in the analysis. Firstly, since I theoretically discuss established perspectives (Resource-dependency and Reciprocity theory) to establish the novelty of influential power concept and compare relative significance, controlling the effects of these theories in the statistical model is recommended. In this study, the extent of *resource dependency* was measured by the total number of concurrent ties between partners during observation period because previous studies (Aiken & Hage, 1968; Pfeffer & Nowak, 1976) demonstrates that there is a high correlation between the number of concurrent ties and the extent of inter-firm dependency. Also, by adopting multi-market approach which argues mutual forbearance increases as partners share more number of common markets (Bilotkach, 2011; Kang et.al., 2010), I compared two partners' list of SIC 4-digit codes in which each partner does a business and proxied the degree of *reciprocity* for given JV's partners by the number of common markets divided by total markets of two partners.

Next, prior studies (Kogut 1989, Gulati 1995, Park & Russo 1996) has demonstrated that the presence of prior direct ties between two firms enhance mutual trust and, in turn, mitigate the hazard of unexpected termination of JVs. Trust evolves relatively easily as partners develop mutual understandings from prior collaborative experiences. Therefore, I closely examined the possible effects of *prior experiences* with dummy variable, which was coded 1 if two partners have a cooperative relationship prior to the current JV and coded 0 otherwise.

The *cultural distance* between the partners can be also another source of alternative explanation for unexpected dissolution. Several studies (Hennart & Zeng

2002, Damanpour et.al, 2002) found that cultural distance between partners can potentially generate negative effects because differences in fundamental beliefs and values as reflected in the national cultures may turn out to undermine partners' collaborative efforts. To measure cultural distance, I adopted the model introduced by Kogut and Singh (1988). Using Hofstede's indexes, they developed a composite index based on the deviation along each of the four cultural dimensions- power distance, uncertainty avoidance, masculinity/femininity, and individualism.

Given that different nature of competition and the technology within the industry, particular industry effect can dictate the life cycle of the organizations in the industry (Harrigan, 1988), I also controlled for *industry effects* using ten dummy variables to account for different industry groups based on the 2-digit SIC codes in which the JV operates.

Also, Hennart et.al (1998) indicated that stakes in affiliates which manufacture products different from those of their parents are more likely to be liquidated or sold due to a double information disadvantage. Dummy variable of *business scope* was coded 1 when both of its parents and JV are in the same industry and coded 0 otherwise.

Lastly, *relative power* between partners was controlled because I expect that JVs between partners with similar power tend be more stable than JVs between partners with disparity in influential power. The value of more powerful partner was divided by smaller one to obtain this variable.

3.6.3 Model

In general, event history analysis is used to analyze the effects of predictor variables on the occurrence or nonoccurrence and the timing of specific events (Allison, 1984). Event history analysis can also effectively handle "right-censored" data (here,

cases in which an event of unexpected dissolution has not occurred by the end of the study period). The dependent variable in a continuous-time event history model is the hazard rate, which is the likelihood, or risk, of a given event occurring at time t , given that the event has not occurred prior to that time. To avoid misspecification, I will use a conservative Cox proportional hazards model, which is more flexible and robust for cases in which it is difficult to specify a particular shape of the time dependence of the hazard rate (Blossfeld & Rohwer, 2002).

3.7.1 Results

Table 1 presents the means, standard deviations, and Pearson product-moment correlations of the variables.

 Insert Table 3.1 here

The JVs in the data set experienced 26 percent (49 JVs) failure rate and 42.62 months (3.55 years) average life span. An initial evaluation of the Pearson product-moment correlations revealed the following: Failure is negatively associated with the age of the JV, which means that the longer it persist, the less likely it fail. This is consistent with the result of previous studies, which demonstrated that the failure rate of JVs will initially rise and then steadily decline with time. Also, influential power shows negative relationship with JV failure and positive relationship with duration of JV, which temporarily supports my hypothesis. JV failure shows positive relationship with cultural distance, and business scope while it has negatively related with prior experience, and 50-50 equity sharing. The matrix shows no substantial problem with multicollinearity problem among the variables.

 Insert Table 3.2 here

Next, table 2 presents the results of the cox proportional regression analyses testing my hypotheses. Model 1 contains only control and R/D and reciprocity variables while model 2 and 3 regress the hazard of JV failure on main factors (Influential Power for model 2 and equity-ration for model 3) and control variables. The Chi-square for all models represents a strong goodness of fit to the given data ($p < 0.001$).

First, model 1 tests the contribution of control variables (Cultural distance, Business scope, Prior Experience, and Industry effect) and established perspectives (R/D and reciprocity theories) to the (log) likelihood of failure of JV between competitors. These variables are empirically supported or formally theorized by previous studies as critical factors on JV stability (or failure). So, in this study I want to investigate whether these variables still have significant and equivalent influences on the hazard of JV failure when we focus only on JVs formed between direct competitors in the same industry. Given that identical factor would have varying effects according to different contexts, it is worth retesting the results of previous studies whose samples also included horizontal and vertical JVs in addition to JVs between direct competitors. Model 1 revealed that cultural distance are positively associated with the failure of JV between competitors in significance ($p < 0.05$). This is consistent with the prior studies that a high cultural distance can be a potential for disaster due to differing embedded assumptions about the operation of a business. In addition, the result represents prior experience has a negative relationship with JV dissolution ($p < 0.001$). Many studies on JV already demonstrated that the presence of prior ties between partners enhance mutual trust and, in turn, mitigate the hazard of unexpected termination of cooperation. However, the result shows business scope has an

insignificant effect toward the JV termination though its positive relationship with JV failure is consistent with previous studies. The most noticeable is the finding that both R/D (measured by concurrent ties among the partners) and reciprocity (measured by number of common markets) theories are not statistically significant to the likelihood of JV failure even though reciprocity is statistically significant at model 2. Indeed, significant effect of reciprocity at model 2 becomes insignificant once it additionally includes equity-ratio for testing hypothesis 2 and R/D variable shows no significance across all three models, which might provide the implication that although they are established perspectives for the stability of inter-firm collaboration they might have relative lack of explanation particularly to the case of dissolution of JV between competitors.

Secondly, model 2 tests the effect of influential power, main factor, on the hazard of JV failure while considering the effects of control variables in model 1 at the same time. Table 2 shows that by adding an influential power to the analysis, Cox regression model provides a significant improvement. The likelihood ratio test leads to the value of Chi-square of 9.25 with one degree of freedom, which yields the p-value of 0.002. Therefore, with the influential power added into the model 2, I could be better able to estimate the likelihood of JV termination. The main argument in this study is that the hazard of unexpected JV dissolution has a negative relationship with the influential power that each partner can exercise toward the industry. The model 2 provides the consistent results that estimated relationship between JV failure and influential power is negative in significance ($p < 0.05$). So, it suggests that when the firm creates a JV with the comparable competitor in the same industry, the hazard of unplanned dissolution of JV is less likely as the power of each partner becomes greater in the industry. I argue that as firm becomes more powerful within the industry, it faces greater

net value of pursuing collective benefits through sustenance of current cooperative relationship than of pursuing self-interest benefits by opportunistically behaving toward direct competitors, which, as a result, provides more incentive to sustain current cooperation.

And finally, model 3 shows that equity-ratio is negatively correlated with the likelihood of JV failure with the p-value less than 0.05. So, the result supports the second hypothesis that as the ratio of ownership-share among the partners gets closer to '50 vs 50', the likelihood of JV failure becomes smaller.

3.7.2 Robustness Check- Considering distributional feature of influential power

In this study, the influential power is defined as the power that each partner can exercise within the industry and I argue that certain firm is considered as having high influential power when its power is relatively great compared to those of other firms in the same industry. So, it implies that we need to have a reference group in the industry to evaluate the power of given partner since it is a relative power, not absolute power in the industry. And I identified the top 20 firms in the industry for each dimension as a reference group such that the average value of its group is set as a denominator in calculating given firm's power. Since I chose top 20 largest firms in the industry for reference group, the distribution of 'influential power' is right-skewed with long right-tail. This specific type of distribution happens naturally because majority of sampled firms (partners) are relatively small companies compared to the reference group (20 largest firms in the industry) and very few companies such as apple in IT industry or Exxon mobil in Energy industry are extremely bigger even compared to top 20 largest firms in the industry.

 Insert Graph 3.1 here

Above graph is the distributional dot-plot for influential power which partially shows right-skewed shape with long right-tail. From the graph, there are seven samples whose power values are extremely larger than those of other firms, which could distort the size, significance, or even sign (+ or -) of the estimated coefficient. So, I conduct robustness test to check whether the result is unchanged after I delete seven most outliers from the final sample. Below is the result of cox proportional hazard model without 7 outliers.

 Insert Table 3.3 here

After deleting 7 samples which have extremely great influential power, the results are still supportive to both H1 and H2. Specifically, the statistical significance of influential power becomes even greater with p-value less than 0.01 and the value of chi-square for overall goodness of fit increases. So, after I omitted extreme outliers from the analyses, the results become more supportive to my hypotheses.

3.8.1 Discussion

Gnyawali and Park (2011) emphasize the importance of studying collaboration between competitors by showing that over 50% of inter-firm alliances are undertaken by the firms in the same industry, that is, among competitors. This study analyzes the impact of influential power that each partner can exercise within the industry on the unexpected dissolution of cooperative relationship based on the analysis of 188 JVs formed between firms which compete in the same market. Also, this study retests the contributions of several variables (cultural distance, business scope, prior experience, common markets, concurrent ties, and industry effect), which were theoretically

formulated by previous studies as being critical factors on the stability of inter-firm cooperation. As demonstrated by empirical results in this paper, this study reveals several key findings.

The first key finding of the study is that JV failure is negatively related with the influential power. As the level of influential power each partners exercise in the industry increases, the rate of either unplanned termination or sale-to-third parties of JV formed between direct competitors declines. This result supports the main argument that as the firm becomes more powerful in the industry, it encounters greater benefits from pursuing collective goals with competitors than from pursuing self-interest goals by engaging in opportunistic behavior and, therefore, it has more incentive to sustain its current cooperative relationship with competitors in the industry, which ultimately decreases the likelihood of JV failure.

Secondly, it also shows that as the ratio of ownership share among the partners gets closer to '50 vs 50', the likelihood of JV failure decreases. Although less novel finding than the first result, the second one is also noteworthy given that there have been somewhat inconclusive results from the prior studies on the relationship between ownership structure and JV survival and performance (Barden et.al., 2005). Despite agreed recognition of significant role of ownership share on JV survival, some researchers argue the positive effect of dominant control on the JV survival (e.g., Ding, 1997; Blodgett, 1992), while other suggest rather opposite argument in line with shared control perspective which views balanced ownership as conducive to JV survival (e.g., Westman & Thorgren, 2016; Steensma & Lyles, 2000; Beamish, 1985). So, when it comes to trying to understand the relationship between ownership share and JV survival (or stability), it would be theoretically valuable to additionally consider whether JV is formed between competitors or not. That my result is in support of 'shared control

perspective' rather than 'dominant control perspective' would be most attributable to the fact that partners of JV between competitors are situated in the mixed-motive interaction in which there is a conflict between self-interest benefits through competition and collective benefits through cooperation. Unlike vertical JV with supplier or customer partners and horizontal JV with indirect competitors in other industry, JV between firms competing in the same industry often requires collective goals that are in direct conflict with its own self-interest goals. These conflicting goals could cause the partners to behave opportunistically for the pursuit of self-interest benefit and, therefore, discontinue its collaboration with competitor whenever it encounters bigger incentive from competition than from collaboration. Considering the TCE approach and situational assumption of mixed-motive interaction, an ownership structure close to '50 vs 50' could be a good instrument for the sustenance of cooperative behavior and protection against potential opportunistic behavior for self-interest goals. Indeed, as several theoretical accounts (e.g., Schelling, 1960; Williamson, 1983; Kogut, 1989) emphasized, the stability of cooperation is prompted by the ability of parties to an agreement to reciprocate penalties in the case of competitive behavior and to reward altruistic behavior such as through balanced ownership share.

Lastly, the finding that both R/D and reciprocity theories are not statistically significant to the likelihood of JV failure provides implication that despite their theoretical merits in general, they might have insufficient explanation particularly to the case of dissolution of JV between competitors. Indeed, R/D theory has some limitation in explaining why there are still significant differences on the hazards of dissolution of JVs in which partners are highly inter-dependent with each other in terms of resources. In other words, R/D theory cannot fully explain the dissolution of JV between highly resource-interdependent partners due to partners' opportunistic

behavior for the pursuit of self-interest goals in the mixed-motive situation. On the other hand, for reciprocity theory, it does not focus on the case of relation stability between partners without reciprocity due to resource-synergy effect. In addition, though it takes potential for reciprocity into consideration, it cannot explain further especially when there are still high risks of dissolution of inter-firm cooperation between partners with mutual hostage position. Suppose that although both JV between GM and Toyota and JV between KIA and Mazda in Automobile industry can be expected to be stable due to the existence of reciprocity, the former is more stable than the latter. In this case, reciprocity approach has a lack of explanation because it also does not consider the mixed-motive interaction where partners can terminate current cooperative relation due to bigger incentive to pursue self-interest goals irrespective of mutual-hostage position with partner.

3.8.2 Limitations and future research

Similar to prior researches on JV dissolution, I was unable to control for additional critical factors such as financial performance of JV and broad social network of partners, both of which definitely influence the hazard of JV failure. Due to the fact that most of JVs formed between direct competitors are not listed on exchange market and small in size, obtaining reliable financial data such as balance sheet and income statement is extremely difficult, especially in a longitudinal study. Also, because of insufficient information about inter-firm relationship obtained only from secondary source, there is a limitation to thoroughly understanding the broad inter-firm network of specific partner. To the extent that longitudinal data on specific characteristics of alliances becomes more easily available, researchers will have the opportunity to expand research on inter-firm cooperation between direct competitors in deeper ways.

For instance, availability of JV's financial performance data would enable further examination of the argument in this study in a more complete way since partners would be less likely to terminate current cooperation with competitors when the results of its performance is outstanding. Additionally, it would be more meaningful to test the relationship between influential power and JV failure by simultaneously considering the inter-firm network of each partner given that common partners constitute a social mechanism for maintaining order, especially in risk inter-firm activities such as cooperation with direct competitors. Overall, I believe this study provides bases both for further work on inter-firm cooperative relation formed between direct competitors in the industry and for multi-level approach of mixed-motive interaction toward the study of inter-firm behavior.

Table 3.1 Descriptive statistics and correlation matrix

	Mean	S.D	min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. JV failure	0.26	0.44	0	1																		
2. Duration of JV	42.62	24.37	3	113	-0.16																	
3. Influential power	19.73	47.73	0.05	380.279	-0.14	0.02																
4. Equity ratio	0.82	0.29	0.11	1	-0.23	-0.01	-0.01															
5. Relative power	9.32	18.39	1	180.41	-0.08	0.02	-0.05	0.06														
6. Reciprocity	0.39	0.24	0.06	1	-0.14	0.01	-0.17	0.07	0.12													
7. Resource dependency	1.09	1.88	0	7.5	-0.07	0.02	0.38	0.05	0.09	-0.21												
8. Cultural distance	0.51	0.97	0	3.91	0.25	0.15	0.16	-0.11	-0.04	-0.14	0.03											
9. Prior experience	0.62	0.48	0	1	-0.32	0.03	0.22	0.12	0.07	-0.09	-0.24	-0.2										
10. Business scope	0.29	0.46	0	1	0.03	-0.11	0.11	-0.08	0.04	-0.14	-0.04	-0.01	0.03									
11. Energy	0.21	0.41	0	1	-0.06	0.01	0.07	0.03	0.06	0.07	0.03	-0.07	0.04	-0.10								
12. Materials	0.23	0.42	0	1	-0.07	-0.05	-0.12	0.02	0.05	0.09	0.01	-0.06	0.01	-0.11	-0.028							
13. Industrial	0.10	0.31	0	1	-0.07	0.06	0.05	-0.18	-0.03	-0.10	0.01	0.18	-0.07	0.05	-0.17	-0.19						
14. Consumerdiscretionary	0.10	0.30	0	1	0.08	-0.09	0.08	-0.01	-0.07	0.03	-0.14	0.06	-0.07	0.05	-0.17	-0.19	-0.11					
15. Consumerstaple	0.07	0.25	0	1	0.03	0.08	0.02	0.07	-0.08	-0.06	0.09	0.09	0.08	-0.09	-0.14	-0.15	-0.09	-0.09				
16. Healthcare	0.04	0.19	0	1	0.01	-0.01	-0.04	0.04	-0.03	-0.02	-0.09	-0.06	-0.14	0.12	-0.10	-0.11	-0.07	-0.07	-0.05			
17. Financial	0.13	0.33	0	1	-0.08	0.11	-0.06	0.06	-0.01	0.04	0.03	-0.03	0.03	-0.15	-0.19	-0.21	-0.13	-0.13	-0.11	-0.08		
18. IT	0.07	0.25	0	1	0.09	-0.07	0.06	-0.01	0.03	-0.11	0.14	-0.14	0.02	0.26	-0.13	-0.14	-0.09	-0.09	-0.07	-0.05	-0.11	
19. Utility	0.06	0.24	0	1	0.01	-0.06	-0.04	-0.02	0.02	-0.06	-0.10	0.02	0.05	0.18	-0.13	-0.14	-0.09	-0.08	-0.07	-0.05	-0.10	-0.07

Table 3.2 Results of cox proportional hazard model

	Model 1		Model 2		Model 3	
	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient
Relative power	0.996 (0.011)	-0.003 (0.012)	0.996 (0.011)	-0.004 (0.011)	0.997 (0.011)	-0.002 (0.011)
Reciprocity	0.260† (0.191)	-1.348† (0.730)	0.208* (0.158)	-1.569* (0.760)	0.234† (0.176)	-1.454† (0.753)
Resource dependency	1.013 (0.102)	0.013 (0.101)	1.103 (0.110)	0.098 (0.099)	1.127 (0.114)	0.119 (0.101)
Cultural distance	1.361* (0.170)	0.308* (0.125)	1.557** (0.215)	0.443** (0.138)	1.456** (0.204)	0.375** (0.140)
Prior experience	0.213*** (0.075)	-1.545*** (0.351)	0.284*** (0.102)	-1.258*** (0.357)	0.294** (0.106)	-1.224** (0.359)
Business scope	1.369 (0.494)	0.314 (0.361)	1.578 (0.564)	0.456 (0.357)	1.558 (0.553)	0.443 (0.355)
Energy	0.746 (0.552)	-0.293 (0.740)	0.855 (0.628)	-0.157 (0.734)	0.757 (0.551)	-0.278 (0.728)
Materials	0.766 (0.566)	-0.266 (0.739)	0.802 (0.597)	-0.219 (0.744)	0.772 (0.568)	-0.258 (0.735)
Industrial	0.860 (0.625)	-0.148 (0.724)	0.905 (0.657)	-0.101 (0.726)	0.995 (0.722)	-0.005 (0.725)
Consumer discretionary	1.383 (0.976)	0.324 (0.706)	1.625 (1.155)	0.486 (0.711)	0.995 (1.072)	0.398 (0.719)
Consumer staple	1.727 (1.437)	0.546 (0.832)	2.169 (1.792)	0.774 (0.826)	2.262 (1.826)	0.816 (0.807)
Healthcare	0.693 (0.648)	-0.367 (0.935)	0.709 (0.665)	-0.343 (0.937)	0.794 (0.750)	-0.229 (0.944)
Financials	0.515 (0.414)	-0.663 (0.804)	0.489 (0.393)	-0.715 (0.803)	0.474 (0.383)	-0.746 (0.808)
IT	1.083 (0.863)	0.079 (0.780)	1.128 (0.898)	0.120 (0.796)	1.002 (0.798)	0.003 (0.795)
Utility	1 (omitted)	0 (omitted)	1 (omitted)	0 (omitted)	1 (omitted)	0 (omitted)
Influential power			0.973* (0.012)	-0.028* (0.012)	0.972* (0.012)	-0.029* (0.012)
Equity ratio					0.391* (0.177)	-0.938* (0.453)
Log likelihood	-267.492		-262.804		-260.817	
Chi-square	39.66***		49.03***		53.01***	
N	188		188		188	

All significance tests are two-tailed
†< 0.10, *< 0.50, **<0.01, ***<0.001

Graph 3.1 Distributional dot-plot of influential power

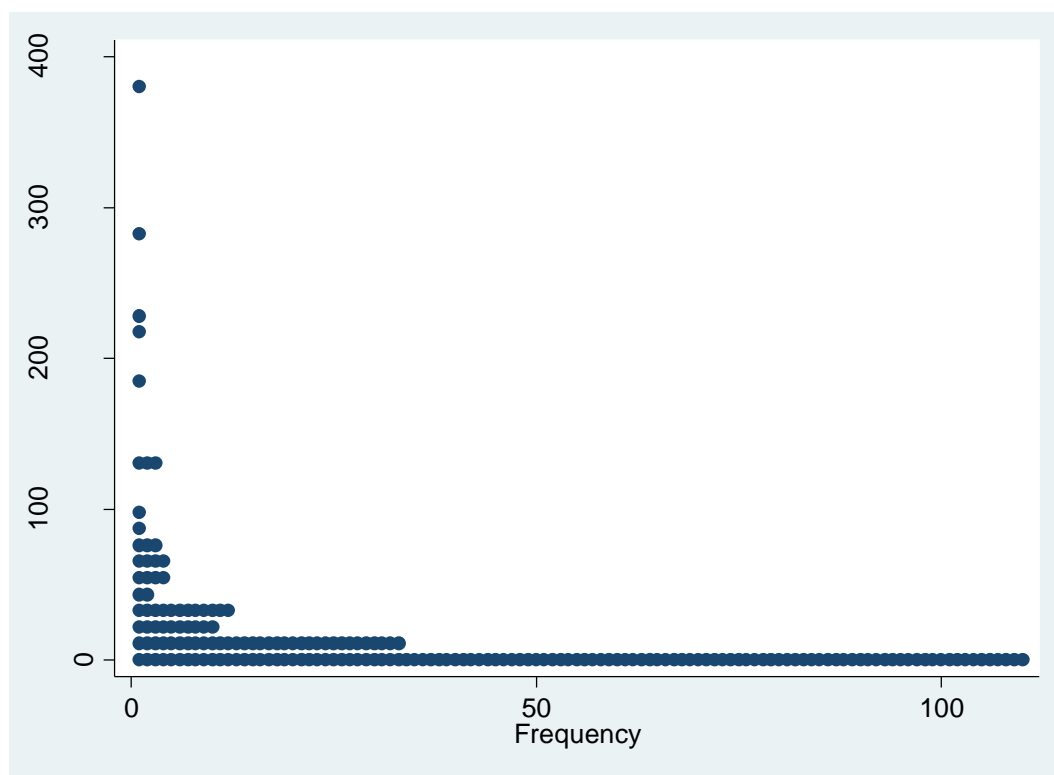


Table 3.3 Results of cox proportional hazard model without 7 outliers

	Hazard Ratio	Coefficient
Relative power	0.999 (0.010)	-0.001 (0.009)
Reciprocity	0.185* (0.144)	-1.686* (0.779)
Resource dependency	1.072 (0.114)	0.069 (0.106)
Cultural distance	1.549** (0.227)	0.437** (0.146)
Prior experience	0.357** (0.127)	-1.028** (0.354)
Business scope	1.471 (0.532)	0.387 (0.361)
Energy	0.731 (0.534)	-0.312 (0.730)
Materials	0.793 (0.590)	-0.231 (0.743)
Industrial	0.990 (0.727)	-0.009 (0.734)
Consumer discretionary	1.560 (1.130)	0.449 (0.724)
Consumer staple	2.603 (2.089)	0.956 (0.802)
Healthcare	0.794 (0.751)	-0.230 (0.946)
Financials	0.448 (0.367)	-0.801 (0.817)
IT	0.734 (0.627)	0.308 (0.854)
Utility	1 (omitted)	0 (omitted)
Influential power	0.952** (0.016)	-0.049** (0.017)
Equity ratio	0.372* (0.033)	-0.988* (0.462)
Log likelihood		-251.56
Chi-square		54.87***
N		181

All significance tests are two-tailed

†< 0.10, *< 0.50, **<0.01, ***<0.001

Chapter 4: Further sophisticating the relationship between alliance experience and alliance activities. The disappearing effect of alliance experience in the face of most recent alliance failure

4.1 Introduction

Corporate alliance is one of the most popular research areas in the field of strategic management. Despite lack of clear paradigmatic definition among scholars, it is generally regarded as inter-firm cooperative relationships between firms and suppliers, customers, competitors, and other organizational actors in which firms retain control over their own resources but jointly decide on their use (Ebers, 1997). As strategic management scholars have broadened and deepened this area further over the past years, later researches on corporate alliance depart beyond the simple investigations of antecedents and/or performance consequences of it and several more sophisticated research questions emerged consequently. The research stream on alliance experience is one of them. By taking organizational learning perspective, the researches in alliance experience generally try to understand how the value generated by an alliance depends on a firm's alliance capabilities developed through repeated experience with these governance forms, and how firms' subsequent alliance activities are influenced by these alliance capabilities and experience (Dyer & Singh, 1998; Halebian & Finkelstein, 1999; Anand & Khanna, 2000; Hayward, 2002; Kale et.al., 2002).

Specifically, the research in alliance experience could be understood as having mainly three sub-fields. The first sub-field focuses on how alliance experience affects the alliance performance such as target's profitability or innovation, and second sub-field investigates the relationship between alliance experience and alliance capabilities such as managing inter-firm conflicts or re-designing alliance governance in the face of dynamic environments whereas the last sub-field tries to understand how alliance experience impacts the firms' alliance activities such as entering a new alliance in the

future. By measuring alliance experience as the cumulative number of prior alliances in which focal firm has participated, these three sub-fields, combined together, have demonstrated that alliances formed between firms with greater level of alliance experience are more likely to have better alliance performance (Gulati et.al., 2009; Zollo et.al., 2002; hoang & Rothaermel 2005) and capabilities (Teng & Das, 2008; Kale & Singh, 2007, Rothaermel & Deeds, 2006). Also, previous studies found that the greater a firms' alliance experience, the more likely that it will form a new alliance in the future faster than inexperienced firms (Al-Laham et al., 2008; Villalonga & McGahan, 2005; Gulati, 1995; Gulati, 1999) because alliance experience can improve the efficiency of the partner selection process and of the learning process within the alliance itself (Inkpen & Dinur, 1998; Lyles, 1988). Among these three different, but highly inter-related sub-fields, my study specifically focuses on the last sub-field, which pays attentions toward how alliance experience affects the firms' subsequent alliance activities.

Although these prior studies (last sub-field) have significantly contributed to our understanding of the positive effect of alliance experience to the firms' alliance activities, these studies still provide us with incomplete picture of the complex relationships among them. In order for us to better understand the complex nature of firms' alliance activities, we need to consider whether the effect of alliance experience is constant to the alliance activities regardless of firms' different performance outcomes of prior alliance. In this study, I intentionally consider whether the firms have a prior alliance failure such as unplanned liquidation, bankruptcy, or sale to third-parties because I argue that the positive effect of alliance experience becomes insignificant to the firms' alliance activities with the existence of prior alliance failure. In particular, I develop theoretical arguments that the firms whose focal alliance was failed have the

opportunity to learn from their prior failure and attempt to improve or change their current way of conducting alliances in order to reflect unsatisfying performance outcomes of prior alliance. However, due to idiosyncratic nature of strategic resources arising from repeated engagements of alliance activities throughout relatively long period of time, the firms with high level of alliance experience may encounter more difficulty in improving or changing their existing alliance-related strategic resources in response to recent alliance failure. Thus, it might be possible that even though ‘firm A’ has much greater alliance experience than ‘firm B’, ‘firm A’ is still less likely to enter a new alliance in the future especially when it has an alliance failure in recent years, an intriguing phenomenon to which previous studies have paid little attentions.

In this study, based on the sample of 203 firms whose focal joint-ventures were formed internationally during the period between 2001 and 2010 and the immediate observations on their subsequent joint-venture activities for following 5 years, I empirically demonstrate that the existence of prior joint-venture failure not only affects negatively to the firms’ likelihood of re-entrance, it can also delay the time of entrance. In addition, more interestingly, the results show that although alliance experience generally influences positively to the likelihood of firms’ re-entrance of joint-venture, its positive effect supported by prior findings becomes insignificant to the formation rate of new joint-venture especially when focal firms have a prior joint-venture failure. In this regard, this study has both theoretical and managerial implications by further sophisticating the relationship between alliance experience and alliance activities, establishing a more dynamic perspective and new insights on the nature of firms’ behavior to enter into an alliance and, providing managers with caveat that past experience is not always positive in the future activities and thus enabling them to take a more balanced view on the role of experience.

The following section pays attentions toward the previous studies which have investigated the relationship between alliance experience and subsequent alliance activities and I build baseline hypothesis. Section three further develops this framework by providing second and third hypotheses. Data source, research design and analytical methodology are provided in the section four and measurements are discussed in section five. Then I will provide the results in section 6 and finally discussion about theoretical contributions, practical implications and limitations and future research of this study are provided in section 7.

4.2 The positive effect of alliance experience (baseline hypothesis)

I mentioned that researches in alliance experience can be divided into mainly three sub-fields. The first and second sub-fields consider how alliance experience affects focal alliance performance and alliance capabilities respectively while the last sub-field attempts to study how alliance experience influences partners' subsequent alliance activities. However, compared with the first and second research streams, there are relatively fewer number of previous studies conducted in the last sub-field mainly due to the fact that the nature of research questions addressed in the last sub-field usually requires researchers to observe the entire history of firms' alliance activities longitudinally not just to snapshot the status of alliance and partners at specific point of time. Indeed, research in alliance sequencing encounters considerable amount of difficulties because several types of inter-firm cooperative relationships such as outsourcing, affiliated R&D or legal contract frequently do not entail clear independent and separate business entities and thus make researchers difficult, if not impossible, to identifying the start and end date (life history) of focal alliance activities.

However, in spite of the struggle arising from obtaining time-series empirical data on corporate alliance activities, the last research stream has investigated how

alliance experience affects future alliance activities. Taking the concept of dynamics of alliance portfolio, this research stream has acknowledged the fact that in many industries firms are not only frequently involved in multiple alliances simultaneously, they also engage in sequences of alliances over time. So, moving beyond the simple analyses of the effects of current alliance in a static perspective, these studies have explicitly adopted dynamics approach by arguing that sequences of alliances generate inter-temporal effects (inter-alliance level) and thus the performance outcomes resulting from a given alliance may have implications for future alliances activities (Al-Laham et al., 2008). Given that there has been relative lack of attentions to the dynamics of alliance sequence, this research stream has provided the insights into what factors influence firms' behavior to enter into a new alliance in the future while an ongoing alliance is still evolving.

According to prior studies, firms' alliance experience is a one of the most important factors toward firms' likelihood to form a new alliance. In particular, previous studies (Al-Laham et al., 2008; Villalonga & McGahan, 2005; Gulati, 1995; Gulati, 1999) demonstrated that the firms with greater level of alliance experience are more likely to actively engage in new alliances subsequently than inexperienced firms because of several benefits obtained from alliance experience. Firstly, firms with greater alliance experience can achieve better efficiency in choosing appropriate partners for potential alliance in the future. Specifically, alliance experience should improve firms' capability to identify who retains what resources, whether given firm has the ability or knowledge to solve certain sets of problems and thus who is right partner for the success of alliance (Cohen & Levinthal, 1990). In other words, the firm-specific accumulated knowledge obtained from past experience in alliance plays a central role in the process of partner selection because it facilitates firms to better choose potential partners

(Anand & Khanna, 2000; Das & Teng, 1988; Hitt et al., 2000; Kale & Singh, 1999). Having better capability in the selection of partner, firm with greater alliance experience can save the resources and time usually spent during the stage of pre-agreement partner selection and screening (Dussauge & Garrette, 1999), which could provide positive effect to the likelihood of firm starting a new alliance in the future.

Secondly, by steadily learning from prior experience to improve their current management to guide future decisions, firms with considerable alliance experience can reduce the uncertainty arising from incomplete nature of alliance (Sampson, 2005; Anand & Khanna, 2000; Dyer & Singh, 1998). As firm can create its own specific alliance-related routines from past experience, it could better deal with similar alliances subsequently and the value from deploying experiential learning become more available and fast (Hayward, 2002) because firm can extract meaningful inference from its prior activities in alliance and encode and re-access to these inferred lessons for similar alliance in the future (Levitt & March, 1988). In other words, firms with greater level of alliance experience store learning from past experience into their alliance routines and they can achieve more benefits in alliance by applying these established routines into similar alliance in the future whenever certain stimuli are existing (Nelson & Winter, 1982). However, I will later argue that this routine effect generated by learning from prior experience might hamper subsequent alliance activities especially when firm need to innovate its current way of conducting alliance in a response to prior alliance failure.

Lastly, even regardless of actual benefits obtained from alliance experience, organizational momentum is likely to make firms to prefer certain governance of transaction (alliance) over other types (free-market exchange or in-house production via acquisition), and thus causes them to engage in more alliance activities in the future.

Organizational theorists demonstrate that frequent engagements in a certain activity may establish a momentum for that action which increases the likelihood of same activity in the future. (Amburgey & Miner, 1992, Jansen, 2004). For example, certain companies such as General Electric have implemented somewhat aggressive boundary expansion strategies, appearing to gain momentum as they acquired other firms. Furthermore, Levitt & March (1988) who studied organizational momentum in relation to organizational transformation have found that sometimes organizations face greater extent of rigidity and resistance as the number of certain organizational activity increases since corporations may come to prefer well-known kinds of activities, regardless of whether they are appropriate to a given situation.

To sum up, because prior alliances experience allows firms to establishes routines fostering their learning in subsequent alliances, reduces firms' uncertainty about the alliance processes, leads to the development of general alliances capabilities, and enables firms to identify potential partners more quickly, as well as organizational momentum creates organizational preference of alliance over other types of governance, below I provide the baseline hypothesis.

Hypothesis 1 (baseline hypothesis): *The relationship between focal firms' alliance experience and the likelihood of entering a new alliance in the future is positive such that the firms with greater level of alliance experience are more likely to actively engage in new alliances in the future than inexperienced firms.*

4.3 The negative impact of prior alliance failure to the alliance activities

Prior work on corporate alliance has generally treated alliance performance as an outcome variable and has examined the effects of firm, deal, and industry characteristics on alliances outcomes. However, in this hypothesis, I conceptualized alliance performance as an antecedent rather than an outcome variable and studied the influence of prior alliance performance on future alliance activities.

The second hypothesis, which argues that the existence of prior alliance failure provides negative influence toward the firms' likelihood of formation of new alliance, mainly draws on the two theoretical perspectives – Child's strategic choice theory (SCT) and March's behavioral theory of the firm. Firstly, according to the SCT (Child, 1972; Child, 1997) all aspects of organizations are, in some sense, chosen by their managements. They did not just happen. The managers choose what to do. So, the consideration of active role played by CEOs to the analyses of firms' future strategic behavior such as entering a new alliance is important and desirable (Hambrick, 2007). Besides, firms cannot implement all strategic goals that they plan to do because firms face the limit on their available resources and capabilities, implying that they need to compromise. Thus, one strategic choice such as forming an alliance with partners might constrain other strategic choices such as facility expansion or acquisition of other company. In this respect, negative performance outcomes such as bankruptcy or liquidation from prior alliance may provide unfavorable impression to top managers, who consequently assess alliance as less attractive strategic choice in the future and therefore will be less likely to choose alliance than other alternative strategic options such as market-transaction or in-house production via acquisition.

In addition to SCT, the behavioral theory of the firm offers a valuable explanation in comprehending the influence of prior alliance failure on future alliance activities. Assuming that firms may also learn from performance feedback and that firms may show different reactions to positive and negative outcomes as a result (March, 1981), the scholars in the Carnegie school of thought (e.g., Cyert & March, 1963) have focused on how the performance outcomes of previous activities in specific type of operation determine the firms' activities in that same type in the future. In particular, good performance outcomes may enhance firms' likelihood of continuously engaging

in prior strategic activities (Miller & Chen, 1994), whereas negative outcomes may result in either improvement of current way of conducting certain activities or strategic change through exploration of new strategic alternatives. (Boeker, 1989). So, for example, firms that have performed well so far with alliance activities regard recent alliances as a sign of appropriate strategic decision and this reinforcement from positive feedback will lead to firms' active engagement in subsequent alliance. In contrast, negative outcomes in prior alliance such as unplanned liquidation, bankruptcy, or sale to third-parties, may provide the firms with poor feedback, and cause so-called "problemistic search" in order to improve current performance or find an alternative strategic options and reduce its activities in alliance.

Taken together, these arguments lead to my second hypothesis

Hypothesis 2: *If the firm has a prior alliance failure, it is less likely to enter a new alliance of the same type in the future compared with the firms without negative performance outcomes on prior alliances.*

4.4 The interaction effect of alliance experience and the existence of prior alliance failure on firms' subsequent alliance activities

In the baseline and second hypotheses, I argue that generally firms with greater alliance experience tend to conduct more alliance activities in the future and that the existence of prior alliance failure, however, provides negative influence on subsequent alliance activities such that there is a negative relationship between the existence of prior alliance failure and the likelihood of firms entering a new alliance. In the following hypothesis, based on the theoretical discussions so far, I further develop the frameworks by considering the interaction effect between alliance experience and prior failure toward the firms' subsequent alliance activities. Specifically, the third hypothesis predicts that firms' subsequent alliance activities, at least in the short term (1~5 years), are differently affected by the alliance experience depending on whether

firms have an alliance failure such as unplanned liquidation, bankruptcy or sale to third-parties in the most recent prior alliance.

But, before I theoretically argue negatively moderating role of prior failure on the relationship between alliance experience and future activities, it is important for us to first recognize the characteristics of firms' resources created through repeated implementations of alliances in terms of the resource-based view. This consideration is important because it enables us to understand how the positive effect of alliance experience on future activities becomes weaker or even disappear with the existence of most recent prior failure. In addition to traditional types of both up-stream (e.g. raw materials, production technologies) and down-stream resources (e.g. distributive and marketing channels), alliance may also provide firms with various idiosyncratic resources such as inter-firm network (Dyer & Singh, 1998; Gulati, 1998), cooperative capabilities (Lyles, 1988; Simonin, 1997) absorptive capacity for learning (Kale & Singh, 2007) and/or even better social reputation and legitimacy among constituents (Dacin, Oliver, & Roy 2007). In contrast with traditional types of up-stream and down-stream resources that can be easily obtainable and thus immediately exploitable, the idiosyncratic resources arising from repeated engagements of alliance are firm's competitive strategic assets which have been accumulated gradually throughout prior alliance activities. The most important feature of these idiosyncratic strategic assets created through alliance experience is that although they are not constant throughout firm's entire history they are semi-fixed resources at least in the short-term. The first reason is that they cannot be tradable via strategic factor market because unlike physical assets such as capital, equipment or land, they are invisible, highly specific to certain firms and thus difficult to evaluate the financial value accurately. So, resource-based theorists (Barney, 1986; Dierickx & Cool, 1989) argue that critical idiosyncratic firms'

resources such as inter-firm network, cooperative capabilities or social reputations are usually accumulated internally rather than easily acquired via strategic factor markets. Secondly, in contrast with strategic resources generated through technological experience that can be codifiable in the form of patent (Jaffe, 1986; Patel & Pavitt, 1994) and realized in new product or process (Nerkar & Roberts, 2004), those generated through alliance experience are difficult, if not impossible, to be codifiable in the form of textual framework and/or materialized in visible output so that focal firm cannot easily learn, absorb or copy other firms' alliance-related resources. And lastly, because these strategic resources do not exist in an isolated manner, but are highly interconnected with other dimensions of firms such as organizational structure and/or managerial system, even if focal firms can finally obtain other firms' alliance-related strategic resources and try to apply these into their distinctive frame, it is hard to expect the same benefits due to the social complexity nature of idiosyncratic resources (Barney, 1991). All of these considerations imply that these strategic resources generated through repeated alliance experience are obtainable only through an internal development, which requires considerable amount of times.

Then, based on the characteristics of idiosyncratic strategic resources arising from alliance experience, how does the positive effect of alliance experience becomes weaker or even disappear to the firms' alliance activities with the existence of prior alliance failure? In the previous section I mentioned that the behavioral theory of the firm (Cyert & March, 1963) implies that alliance activities in the past might provide the firm with some signal to change their current way of conducting alliance or generate new one in order to reflect performance outcomes of prior activity. In other words, in alliance sequencing, firms learn from their past experience and approach the next entry with more reflection on performance outcome of prior alliance. The study of Chang

(1996), though used in acquisition sequencing cases, empirically shows that firms act in a way that conducts deliberate learnings from prior acquisition and reflect these learning into their future entry behavior in acquisition. Given this situation, in order for firms to successfully accomplish the deliberate learning and reflection from the past alliance experience, they should be involved in acquiring new alliance-related strategic resources and/or divestiture of existing ones. However, since they are not tradable via strategic factor market, not easily imitable by other firms, and highly firm-specific and socially complex assets, the only available options for firm is through an internal development (for the case of acquiring) and/or finding alternate ways of application (for the case of divestiture), which are very time-consuming and socially complex and sometimes disruptive.

Given that firm learns from prior experience and approach the next entry with more reflection on performance outcome of prior activities, the firms without most recent alliance failure tend to maintain its current way of conducting an alliance because they are less likely to encounter considerable incentive (or sometimes obligation) to change their current way of conducting alliance or completely create new one for re-starting new alliance in the future. Besides, even if they have an incentive to change or create new one, the extent of modification is generally not substantial unless they face broad industry-level systematic changes in current way of doing an alliance. Thus, in this case, the firms with greater level of alliance experience are more likely to form a new alliance than inexperienced firm as my first baseline hypothesis predicts. On the other hands, for the firms which have a failure in the most recent alliance, I expect that the alliance experience can partially deter the firms' alliance activities at least in the short-term so that the positive effect of alliance experience becomes smaller or even disappear on firms' future alliance activities. This is mainly because firms with great

experience in alliance tend to have more concrete and rigid inter-connectedness and embeddedness among alliance-related strategic resources, which makes firms with great alliance experience to have more difficulty than inexperienced firm in changing their current way of conducting an alliance in response to recent failure performance.

For example, firms with high level of alliance experience would have more strong and cohesive inter-firm networks, which probably results in more difficulty in reflecting recent prior alliance failure. Indeed, Gargiulo and Benassi (2000) suggest that ties that are too cohesive result in network closure, making change difficult and Uzzi (1997) called it as a “Paradox of embeddedness”. Also, the firms with great experience are less likely to adopt new alliance-related routines, management or capabilities because their current alliance-related strategic resources are so strongly established that sometimes it causes organizational inertia problem. This problem of organizational inertia increases as firms age and grow by increasingly engaging in same type of alliance-related logics, routines, and capabilities, thereby lowering the rate of successful organizational change (Hannan & Freeman, 1984; Amburgey et al., 1990; Baum & Singh, 1996). And sometimes, during the process of redeployment and/or divestiture of strategic resources in response to learning and reflection from prior failure, the firm with great extent of alliance experience might face severe inter-firm conflicts with existing partners, which exacerbates the rivalry between focal firm and affected partners. To address such an issue, the focal firm will need to spend more time and effort toward the new alliance in order not to damage trust and goodwill established with current existing partners (White & Lui, 2005).

In sum, if firm do not experience alliance failure, performance outcomes of prior activity do not provide the firm with significant incentive (or obligation) to change its current way of conducting alliance, thereby making firms with great alliance

experience conduct more active engagement in future alliance as my first baseline hypothesis predict. However, when firm have most recent alliance failure, the firms with great alliance experience are less likely to promptly reflect the negative performance outcomes of prior alliance due to idiosyncratic nature of alliance-related strategic resources and thus less likely to easily re-start a new alliance at least in the short term.

So,

Hypothesis 3: *Prior alliance failure negatively moderate the relationship between alliance experience and alliance activities such that the positive effect of alliance experience becomes weaker or even insignificant to the alliance activities when focal firm has an alliance failure in the most recent one.*

4.5 Data, Sample, Research Design and Analytical Methodology

4.5.1 Data

The primary source of this study is from *S&P Capital IQ*. This database is one of the most comprehensive sources for empirical study on joint-venture because it provides the life histories of focal joint-ventures (e.g., initial investment and investment exit of partners, bankruptcy of venture) as well as supplementary information relevant for focal joint-venture activity such as partner-level (e.g., financial data for publicly traded partners), transaction-level (e.g., transaction value) and industry-level information. For the date of firms' joint-venture activities such as new entrance, investment exit or bankruptcy, I double-checked the date information from *Lexis-Nexis* and *Dow Jones News Retrieval Service* (DJNRS), if possible. Following Villalong & McGahan (2005), I used the dates reported by Lexis-Nexis and DJNRS when discrepancies happened, otherwise used those reported by S&P Capital IQ. And I used *SDC Joint-ventures and Alliances* database to obtain cumulative number of alliance in which focal firm has participated, a proxy for alliance experience. For the firm-level

information (e.g. age, financial data and business information) or alliance-level information (e.g. whether JV was unexpectedly dissolved) I used *compustat*, *company annual report*, *publication*, and *other media source* such as *Factiva* and *The Wall Street Journal Index*, if not found in *S&P Capital IQ*. Finally, when it comes to financial information of private partners, I relied on *Private Company Financial Intelligence (PrivCo)* database, and even when I still could not obtain financial information of focal private partners, I instead used available financial information of one of similar private companies in the industry identified by *Bloomberg Business*, which provide similar companies lists. With these various data sources, I complied and constructed data structure in order to be appropriate for the analyses. The following is the detailed descriptions of it.

4.5.2 Sample and Research Design

First, this study specifically focuses on firms' history on joint-venture activities because it entails separate legal entities, which enables researchers to easily identify the start and end date of it. I extracted the initial list of international joint-ventures (IJVs) formed between 2001 and 2015 in all industries which include at least one publicly traded firm from *S&P Capital IQ* database. This somewhat broad selection criterion yielded the set of 629 IJVs.

Second, I divided the initial list of focal 629 IJVs into two subgroups according to the criterion that at least one of partners exited the equity investment on focal IJV or IJVs terminated due to bankruptcy during the period. The initial list was then divided into 522 IJVs whose partners, all together, have retained their initial investment until the end of 2015 and 107 IJVs in which at least one of partners liquidated its equity investment on focal IJVs or IJVs terminated due to bankruptcy during the period. In this study, following Park & Russo (1996), I empirically operationalized joint-venture

failure as either JV dissolutions resulting from 1) unplanned market-liquidation, 2) bankruptcy, or 3) sale to third parties. Please note that unlike liquidation and bankruptcy, sale to third-parties resulted in continuation of business entity of focal IJV. However, I did not consider termination of IJVs due to acquisition by one of partners as a failure. The detailed rationale for not viewing termination of IJVs arising from acquisition by one of partners as a failure is provided in the following measurement section.

Third, by employing different observation techniques in each of subgroups, I longitudinally observed partners' subsequent joint-venture activities for 5 years. Specifically, when it comes to the partners whose focal JV has a failure, I observed their subsequent JV activities after the announcement date of their IJV failure. So, any firms whose IJV failure happened between 2011 and 2015 were omitted from my analyses due to impossibility of observing their subsequent activities for 5 years until the end of 2015. On the other hand, unlike subsequent activities of partners of failed IJV which can be easily identified because the date of focal IJV failure was known, those of partners in alive focal IJVs are relatively difficult to be identified because there are no simple ways regarding when we start observing the partners' subsequent joint-venture activities if their prior (focal) JVs are still alive. For example, if we observe firms' subsequent JV activities immediately after the formation date of prior focal JV, there could be a biased systematic tendency to estimate the effect of prior JV failure to be less negative and/or even insignificant on firms' subsequent JV activities because firms tend to be unable to engage in another JVs immediately after the previous one due to their limited alliance capabilities and relevant resources. Indeed, Al-Laham et al (2008) showed that the rate of alliance formation initially decreases with the time elapsed since the most recent alliance was formed and subsequently increases. Also, if we start observing subsequent JV activities, let's say, 10 years later from the date of previous

focal JV formation, this way of observation also causes confounding effects because, in this case, the argument that the firms obtain proper inference from prior JV activity and then apply these into subsequent JV becomes untenable. Research shows that a very long interval between two projects hampers proper learning (Hayward, 2002; Brown & Eisenhardt, 1997). So, to decrease any confounding effect, we should observe subsequent activities of partners in alive focal JVs neither too immediately nor too lately. In this study, I decided to observe subsequent activities of partners in alive JVs 4 years later from the date of focal JV formation. Observation in this manner is also reasonable given that the average lifespan of failed JVs was 45.7 months, which is very close to 4 years.

Forth, to further increase the internal-consistency of my study, I do not consider the firms in financial industry due to their different business model and asset structure. Unlike the firms in other industry, the firms in financial industry inherently tend to engage in more numerous equity investment in joint-venture simultaneously with other partners and more likely to liquidate, sell to others to realize financial investment and re-start a new equity investment subsequently, all of which confound my theoretical arguments.

Fifth, when I observe partners' re-entrance in JV, I only consider 1) creation of new JV or 2) initial entrance of existing business entity through equity-investment together with other firms as the sign of re-entrance of JVs. Therefore, partners' additional equity-investment on JV in which they had already engaged are not considered as an entrance of new JV.

Sixth, I omitted the partners which have JV failures during my 5 years-observation for subsequent JV activities. Following Fowler and Schmidt (1988), I dealt with the problem of multiple-occurrence by deleting the sample of multiple-occurrence

because in my data the proportion of it is only 3 percent.

After considering these six selection criteria and further omitting any samples without information required for covariates, my final sample size decreased to 203 firms, among which 79 firms has an alliance failure in their focal joint-ventures.

4.5.3 Analytical Methodology

The dependent variable in my study is the likelihood of partners forming a new alliance of the same type in the future. In this regard, event history analysis is appropriate because this technique tries to calculate the probability of event (re-entrance of alliance of the same type) on the basis of given observations and therefore mathematically links change in future outcomes to conditions in the past. So, the dependent variable is mathematically specified as a function of the independent variables and a set of parameters capturing the effects of the predictor variables on the occurrence or non-occurrence and timing of particular events such that $\lambda(t) = f(\beta X_t)$ (Allison, 1984). In current study, the outcome is the probability of a firm forming a new alliance of the same type, as measured by the alliance rate (the so-called hazard rate), and the conditions of the past observations were modelled in the set of covariates (such as whether focal firms have failure outcome in prior alliance). Stata program was used to test and estimate the parameters of covariates.

In order to conduct event-history analysis, my data structure should include information about the timing and sequence of the events that are being examined (Blossfeld et.al., 2007). For instance, if focal firm in the sample re-start a new alliance of the same type, my data structure should provide information about the timing of this event (day, month, year), and any other relevant alliance-, firm-, and industry-level information. My data structure, therefore, provide information on changes in variables that might take place at any specific point in time during my observation period.

Specifically, each firm's history began either one-day after the date of alliance failure or 4 years later from the date of focal alliance formation and ended at the time of an event (entering a new alliance of same type) or at the end of the year, whichever comes first. The firm's second spell began on the following day and ended at the time of an event or the end of the next following year. This pattern continued until the end of the observation period (Dec 31 2015), allowing time-varying covariates to be updated throughout the firm's history at yearly intervals.

4.6. Variables and Measurement

4.6.1 Dependent variable – The dependent variable is the likelihood of firm entering a new joint-venture in the future. I will measure this joint-venture formation rate, $\lambda(t)$, by observing each firm's joint-venture activities longitudinally until the end of 2015. So, the firm's subsequent joint-venture activities were captured during my observation period. This variable is coded 1 each time the firm has entered the new joint-venture and 0 otherwise.

4.6.2 Independent variable

Prior joint-venture failure – This independent variable is binary such that its value is 1 for partner firms whose focal joint-venture has a failure and 0 otherwise. Following Park & Russo (1996), I operationally defined joint-venture failure as a) bankruptcy, b) unplanned liquidation, or c) sale to third-parties. To ensure that termination was not previously determined by partners so that it was an unexpected event, I identified and analyzed all news reports on each terminated JV in the sample from Factiva database, which covers thousands of newspapers around the world. However, I did not consider the case of alliance termination due to the acquisition by one of partners because disagreements exist on whether the acquisition of a joint-venture implies the failure of

its activities, although several prior studies viewed this case as an indirect sign of failure as well (e.g. Pangarkar, 2003). Specifically, Gomez-Casseres (1989) argued that joint-venture is often an intermediate organizational form, in the sense that it is often succeeded by a different arrangement more appropriate to changed conditions. Kogut (1991) theorized and supported the idea that one such governance change, the acquisition of joint-venture by one of the partners, was associated with unexpectedly high growth and industry concentration. Viewing acquisition or internalization by one of the partners as the realization of an investment options, this interpretation suggests that a joint-venture provides a strategic option in the course of growth that cushions the downside risk of future investments (Bowman & Hurry, 1993). In this regard, I did not include the case of IJV termination due to the acquisition by one of partners since the inclusion of these cases into the analyses would bias the results.

Alliance experience – I firstly measured alliance experience by counting the cumulative number of alliances in which focal firm has participated prior to the formation of focal joint-venture and then constantly updated this variable whenever focal firms entered a new alliance during my observation period of 5 years because the data structure of my study is longitudinal with time-varying covariates. In this study, instead of joint-venture experience, I broadly focus on alliance experience by counting not only joint-ventures but also other types of inter-firm alliances such as other equity alliances as well as non-equity alliances in technology, manufacturing, marketing, or R&D. Though some scholars argue that learning and benefits from prior alliance experience are mode-specific nature and thus they should use only joint-venture experience for the empirical studies on joint-venture (e.g. Gulati et al., 2009), the perspective adopted in this study is more consistent with other perspective that firms are able to develop valuable strategic resources and learn from diverse types of prior alliance experience rather than

only from prior joint-venture activities (e.g. Sampson, 2005; Villalong & Mcgahan, 2005). Furthermore, unlike the study of Gulati et al. (2009) whose sample is joint-ventures formed between Fortune 300, my study includes much broader range of joint-ventures so that significant portion of partners in my sample is small private firms which had conducted very few numbers (0~2 times) of joint-venture historically prior to the formation of focal joint-venture. In this situation, I do not believe that these private firms learn greatly from their joint-venture experience enough to create idiosyncratic strategic resources because these resources are not easily developed within just a few times of prior activities.

4.6.3 Control Variable

- Number of current alliance – This need to be controlled because even though firms do not have alliance failure experience in the recent years, firm are still less likely to enter a new alliance if they face the lack of resources and capabilities arising from conducting many current alliances simultaneously.
- Cumulative alliance experience – This effect is already controlled in my analysis since it is independent variable in my model. Numerous previous studies have demonstrated that the greater the number of previous alliances established by a firm, the more likely that firm enter the alliance in the future.
- Firm performance – Firm's three years average ROA will be used to control the firm performance since the firm with better performance can receive less negative impact from alliance failure and better able to afford a new alliance of the same type faster than firm with low performance.
- Firm size – The firm size, measured by annual revenue, should be controlled for

estimating the speed and likelihood of re-entrance of alliance. While some studies in support of negative effect argue that as firms increase in size, they are more associated with resistance to change in response to learning from prior experience and thus become more rigid and inflexible (e.g. Barnett, 1997), others support opposite view by demonstrating that larger firms are more fluid due to market power which lower external barrier and resistance (Scherer & Ross, 1990), and slack resources which enable them to initiate change (Cyert & March, 1963).

- Firm age – Similar to firm size, firm age need to be controlled as well because some prior studies show inertial pressure increases as firm ages (Hannan & Freeman, 1984). On the other hands, other supports positive view that firms become more flexible with age (Singh et al., 1988).
- Culture (Uncertainty avoidance) – Because my research collects the firms internationally, it is important to take distinctive cultural factors into account. Among the various cultural factors, my study specifically tries to focus only on uncertainty avoidance. This is the most relevant cultural factors since the extent to which the firm can endure uncertainty probably affects the firm's decision to enter the same type of alliance. I use Hofstede's fourth dimension for measurement.
- Industry performance trend (focal firm) – Prior studies have demonstrated that firms are more likely to form an alliance in prosperous industry. In this case, the formation of new alliance reflects the up-ward trend in industry performance regardless of the current state of each partners.

4.7 Results

Table 1 is descriptive statistics and correlation matrix of the covariates. Before I analyze this table, however, I need to mention that since the data structure in this study is cross-sectional time series (panel data), the number of subjects used for calculation of mean, S.D and correlation is 1,015 ($N=1,015$). This 1,015 subjects were generated because I observed each firm's behavior of alliance activities and relevant covariates for following 5 years ($203 \text{ firms} * 5 \text{ years} = 1,015 \text{ subjects}$). During the observation period, the sample firms, on average, had an alliance experience from 26.786 alliances and was currently conducting 10.61 alliance, respectively. Next, when we see the correlations, Prior failure is negatively correlated with New entrance (this variable was coded 1 whenever firm formed a new alliance of the same type during the observation period and 0 otherwise), which preliminarily supports my argument that firms which has a negative performance outcome in prior alliance are less likely to enter the same type of alliance in the future. The matrix shows no substantial problem with multicollinearity problem among the covariates except the relationship between Alliance Experience and Current Alliances.

 Insert Table 4.1 here

Next, I divide the sample into two groups in terms of the existence of alliance failure and seek to compare these two based on elapsed time, proportion of new alliance of the same type and other firm-related control variables. Firstly, the most significant difference between two groups is the level of alliance experience measured by the number of prior alliance activities. From the comparison, we can infer that as the firm has more experience in alliance, it has less likelihood of alliance failure. Besides, we can easily know that the likelihood of firms with $PF=1$ entering a new alliance of the

same type in the future is much smaller than that of firms with PF=0. Specifically, 10.7 firms out of 100 firms (0.107) in the group of PF=0 formed a new type of alliance again when I observed their alliance activities. However, only 3.8 firms out of 100 firms (0.038) with PF=0 engaged in the same type of new alliance in the future. Furthermore, even when the firm with PF=1 formed the same type of alliance in the future, its elapsed time is 37.2 months on average, which is longer than 23.1 months of firms without PF. In other words, PF not only provides negative impact toward the firms' behavior to enter the same type of alliance in the future, it can also delay the time of entrance.

 Insert Table 4.2 here

The table 3 shows the results of cox proportional hazard model. Please note that hazard rate, $r(t)$ is the probability of future changes in the dependent variables per unit of time. And hazard ratio in the first column of each model represent an increase in the probability that firm enters the same type of alliance in the future per unit increase of covariate. So, for example, if hazard ratio of variable X is 1.05, then the likelihood of event occurrence becomes 1.05 times greater per unit increase of variables X. Also, coefficient in the second column is calculated in such a way that $\exp(\text{coefficient}) = \text{Hazard Ratio}$. For example, model 1 has coefficient of 0.005 and hazard ratio of 1.005 in the Alliance Experience. So, mathematically $\exp(0.005) = 1.005$

Model 1 tests for baseline hypothesis (hypothesis 1). So, model 1 attempts to predict the firms' probability to enter into the same type of alliance in the future without specifically considering whether focal firm has a prior alliance failure in the most recent one. Overall fit of model is highly significant with Chi-square of 66.49 at 6 degree of freedom. The result is consistent with previous studies that accumulated alliance experience is the one of the most useful factors to explain the firms' likelihood to form

a new alliance in the future. Its P-value is highly significant at p-value of 0.001 level. Previous studies on inter-firm alliance have demonstrated that the more alliance experience the firm has, the more likely that it will form a new alliance in the future than inexperienced firm because prior alliance experience can improve the efficiency of the partner selection process and of the learning process within the alliance itself.

 Insert Table 4.3 here

The main factor of this study, Prior Failure (PF), is included in model 2 for testing hypothesis 2. By putting PF variable into estimation model, both log-likelihood ($= -224.498$) and Chi-square (71.94) increase significantly. From the table, hypothesis 2 is strongly supported with the p-value of 0.05 level ($* < 0.05$). As expected, its estimated coefficient is negative, which implies that if the firm has an alliance failure in the most recent prior alliance (PF=1), its estimated probability that the firm will engage in the alliance of the same type in the following 5 years is 0.468 ($= \exp -0.760$) times less than that of firm without alliance failure on prior alliance. In other word, the existence of alliance failure such as bankruptcy, liquidation or sale to third-parties provides negative impact very strongly to the firms' behavior to enter the alliance of the same type in the future. This can be visually represented by plotting two different hazard rates, respectively, based on whether firm has prior failure or not. Graph 1 is plot of two different hazard rate, $r(t)$, whose unit of analysis time is month. From this graph, we can see that throughout the entire observation period, the hazard rate, which is the probability of firm entering the same type of alliance per unit of time at time= t , is much smaller (almost 3 times) when firms have a prior failure. Also, negative impact of prior failure to the firms' subsequent alliance activities seems to be not diminishing given that the hazard rate difference between two subgroups do not decrease for entire

observation period.

 Insert Graph 4.1 here

Lastly, in order to test hypothesis 3, I inserted the interaction term (PF * AE) into the model 3. The estimated hazard ratio of interaction term is significant and is less than 1, which implies that the prior alliance failure negatively moderate the relationship between alliance experience and alliance activities. To further investigate, I divided the entire sample into two subgroups based on whether firms have a prior alliance failure and then conducted survival analysis separately for each sub-groups. Model 4 is the analysis for the subsequent alliance behavior of firms whose focal joint-ventures are still alive by the end of 2015 (right-censored) so that defined as having no prior alliance failure in this study. On the other hands, model 5 is the survival analysis for the firms whose latest joint-ventures were failed. In model 5, the estimated coefficient of Alliance experience is not statistically significant, implying that the alliance experience do not provide positive impact to the firms' alliance activities especially when firm has an alliance failure. So, the result also supports the hypothesis 3, which argues that the alliance experience might also provide negative impact, at least in the short-term, to the firms' subsequent alliance behavior with the existence of prior alliance failure so that the relationship between them becomes insignificant.

4.8.1 Conclusion

Prior studies on corporate alliances have paid attentions toward how firms' subsequent alliance activities are influenced by alliance capabilities and experience. By taking organizational learning perspective, the researches in alliance experience generally found that the greater a firms' alliance experience, the more likely that it will form a new alliance in the future faster than inexperienced firms. Although these prior

findings have significantly contributed to our understanding about the positive effect of alliance experience to the firms' alliance activities, these studies still provide us with incomplete picture of the complex relationships among them. Focusing on 203 firms whose focal joint-ventures were formed during the period between 2001 and 2010 and observing their subsequent joint-venture activities for 5 years either after the date of alliance failure or after 4 years from the date of formation of focal joint-venture, this study proceeds further by showing that failure outcome of prior alliance negatively affects subsequent alliance activities and that alliance experience provide negative, rather than positive, effect to the firms' likelihood of re-entrance of alliance at least in the short-term when they have a prior alliance failure.

4.8.2 Limitations and future research

Despite its merit, I acknowledge that there are several limitations that also hold promise for future works. One limitation is about the sample used in this study. In particular, the present study focused only on joint-venture, which encounters the problem of generalizability of the findings toward other types of alliances. Due to the nature of research questions addressed in this study, the life-histories of alliances as well as firms' subsequent alliance activities should be known for testing hypotheses. However, other types of alliances such as licensing, marketing consortia, franchising, or legal contract frequently do not entail separate legal entities such that researchers have great difficulties, if not impossible, to identifying the start and end date of them as well as firms' sequencing activities in those specific types of alliances. However, given that the extent of strength of relationship for the initiation of alliance is generally greatest in the case of joint-venture (Contractor & Lorange, 1988), focal firms' subsequent alliances activities could show different pictures when we investigate other less-requiring types of alliances, which has research potential for future studies.

Second limitation is concerned about an indirect measurement of alliance performance. Due to the fact that it is sometimes inappropriate to measure alliance performance with financial outcomes and, in most case, such measures simply don't exist (Gulati, 1998), assessment of joint-venture failure in terms of unplanned liquidation, bankruptcy, or sale to third-parties is an established approach in empirical studies on the performance of joint-venture (e.g. Park & Russo, 1996; Park & Ungson, 1997; Pangarkar, 2009). Nevertheless, this approach is still indirect measurement for the alliance performance. Therefore, future researches should go beyond the initial efforts and adopt detailed surveys or careful fieldwork that could directly measure alliance performance. So, using both archival and survey data with performance measured both by survival of the alliance and by participants' assessment of performance should be considered as an empirical approach to measuring alliance performance in the future research. For instance, in addition to archival data for indirect measurement, extensive surveys to the individual managers responsible for the alliances enables the collection of a host of measures, subjective and objective, on which performance can be assessed.

Table 4.1 Descriptive statistics and correlation matrix

	Mean	S.D	1	2	3	4	5	6	7	8	9	10
1. Elapsed Time	28.82	17.28	1.00									
2. Prior Failure	0.395	0.49	0.04	1.00								
3. New Alliance	0.08	0.27	-0.05	-0.13	1.00							
4. Alliance Experience	20.474	28.07	-0.01	-0.15	0.38	1.00						
5. Current Alliances	10.61	18.48	-0.02	0.00	0.30	0.88	1.00					
6. Firm ROA	7.78	18.1	-0.10	-0.01	-0.05	-0.08	-0.07	1.00				
7. Size	10087.17	38229.02	0.00	-0.10	0.23	0.22	0.25	-0.04	1.00			
8. Age	55.464	43.41	0.02	0.01	0.06	0.10	0.10	-0.09	0.07	1.00		
9. Industry ROA	3.86	1.85	-0.07	-0.02	0.00	-0.19	-0.01	0.11	0.05	0.02	1.00	
10. Culture	59.338	22.24	0.01	0.01	0.01	0.29	0.28	-0.11	0.12	0.26	-0.05	1.00

Table 4.2 Comparison between group 1 (PF=1) and group 2 (PF=0)

	Elapsed time	New Alliance	Cumulative	Current	Firm ROA	Size	Age	Industry ROA	Culture
NPE=1	37.2	0.04	31.78	22.89	7.47	5137.74	56.19	3.81	59.75
NPE=0	23.1	0.11	34.92	22.81	7.99	13318.62	54.99	3.89	59.07

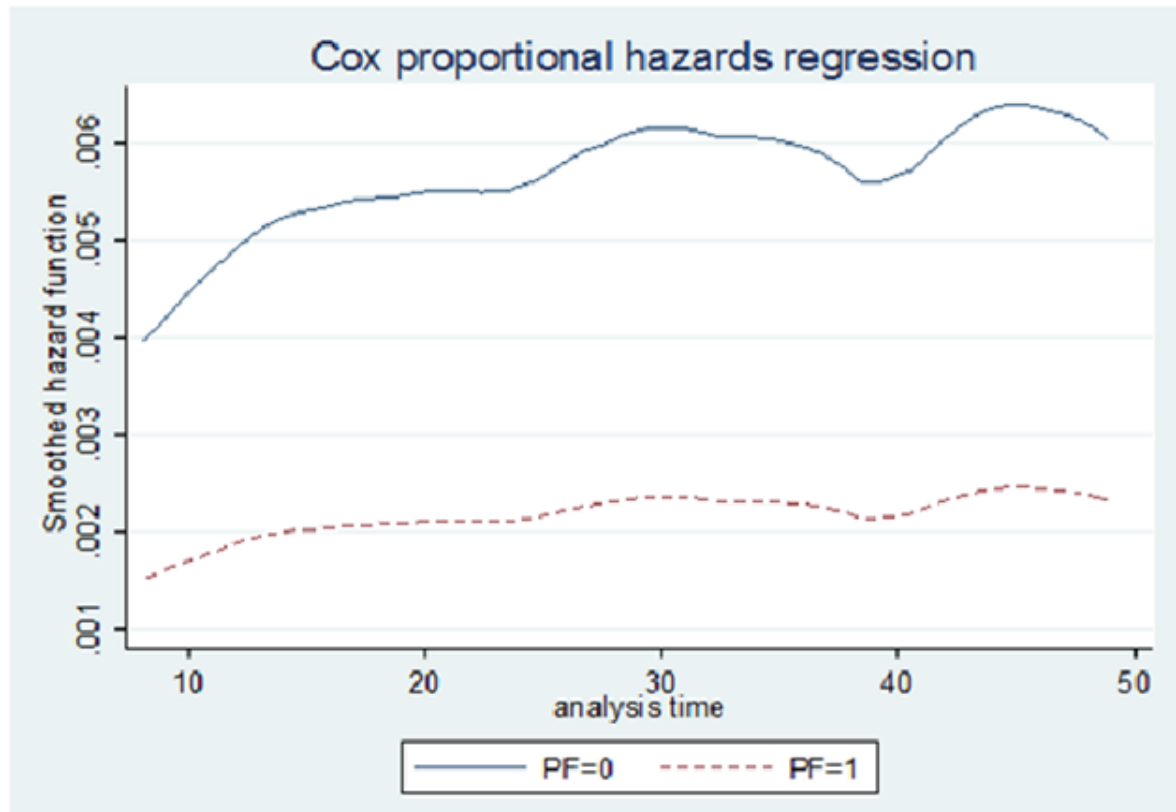
Table 4.3 Results of cox proportional hazard model

	Model 1 (Full sample)		Model 2 (Full sample)		Model 3 (PF=0)		Model 4 (PF=1)	
	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient
Prior Failure (PF)			0.381** (0.133)	-0.964** (0.348)				
Alliance Experience	1.051*** (0.008)	0.495*** (0.007)	1.053*** (0.008)	0.051*** (0.008)	1.072*** (0.010)	0.07*** (0.010)	0.310* (0.167)	-1.172* (0.539)
Current Alliances	0.981* (0.009)	-0.019* (0.009)	0.976* (0.009)	-0.024* (0.010)	0.961*** (0.001)	-0.040*** (0.013)	0.438 (0.271)	-0.825 (0.619)
Firm ROA	0.986 (0.020)	-0.014 (0.021)	0.987 (0.020)	-0.013 (0.020)	1.002 (0.016)	0.002 (0.016)	0.838† (0.895)	-1.777† (0.107)
Size	1.005* (0.001)	0.003* (0.001)	1.003 (0.001)	0.001 (0.001)	1.000 (0.001)	0.000 (0.001)	1.000 (0.001)	0.001 (0.001)
Age	1.001 (0.003)	0.001 (0.003)	1.001 (0.004)	-0.001 (0.001)	1.000 (0.005)	0.000 (0.005)	0.993 (0.010)	-0.007 (0.010)
Industry ROA	0.953 (0.073)	-0.048 (0.076)	0.956 (0.074)	-0.045 (0.077)	0.950 (0.089)	-0.050 (0.093)	0.896 (0.157)	-0.110 (0.174)
Culture	1.005 (0.007)	0.005 (0.007)	1.006 (0.007)	0.006 (0.006)	1.007 (0.008)	0.007 (0.008)	0.993 (0.020)	-0.007 (0.020)
Log likelihood	-228.013		-223.787		-134.779		-28.002	
Chi-square	84.852***		93.912***		99.842***		51.477***	
N	203		203		124		79	

All significance tests are two-tailed

†< 0.10, *< 0.50, **<0.01, ***<0.001

Graph 4.1. Plot of differential hazard rates



Chapter 5.

5.1 Theoretical contributions

Essay one

This study has several theoretical contributions. Firstly, by applying micro-level (individual) theory to phenomena examined at the macro-level (firm) to better understand the behavior of firm, this study expands research on mixed-motive interaction. I strongly assume in this study that partners of JV formed between direct competitors are situated in the mixed-motive interaction and, therefore, similar conflict at the individual-level is likely to characterize the behavior of the partners at the firm-level as well. Given that the concept of mixed-motive interaction has been studied from the camp of micro experts who are theoretically rooted in psychology, I believe this study has provided a base for multi-level approach of this concept toward the study of inter-firm cooperative activities. Indeed, Kogut(1988) proposed that cooperative aspects of joint ventures must be evaluated in the context of the competitive incentives among the partners and the competitive rivalry within the industry.

Secondly, the finding that the likelihood of JV failure becomes lower as the ratio of ownership share gets closer to '50 vs 50' suggests that it would be theoretically useful to consider whether JV is formed between competitors or not given the inconclusive nature of the cumulative findings from prior studies on the relationship between ownership share and JV stability. Although this study does not provide grand theory to resolve current ambiguous finding on the relationship, it suggests that firms might face unequal circumstance depending on the extent of competitive rivalry between partners and so-called mixed-motive interaction that partner faces when engaging in JV activity with competitor might enable 'shared control perspective' to overshadow 'dominant control perspective'.

Lastly, unlike R/D and reciprocity theories on JV failure which have paid attention to the broader set of JVs, this study focuses specifically on narrower set of JVs, those formed between direct competitors. In other word, this study tries to further sophisticate our understanding of complex nature of inter-firm cooperative relations by providing us the insights about why there are differential hazard of JV failure between direct competitors. In this respect, based on the theoretical perspective of transaction-cost economics and situational assumption of mixed-motive interaction, this study answers the question that has not received much attention so far by previous studies by investigating the effect of influential power on the unexpected dissolution of cooperation with competitors.

Essay two

The findings of present study make several contributions to the literature on corporate alliance. First, this study further sophisticates the relationship between alliance experience and subsequent alliance activities by demonstrating that experience effects are not always significantly positive regardless of different performance outcomes of prior alliances, thereby implying the need for contingency on the relationship between alliance experience and subsequent alliance activities. Although the present study also found the result consistent with the previous studies that alliance experience provides positive influence to the firms' subsequent alliance activities generally, this study, however, shows that alliance experience is not a panacea but can sometimes inconsequential to firms' alliance activities at least in the short-term especially when focal firms have a failure in the most recent alliance. Whereas early researches on experience in a strategic setting with the implicit assumption that experience is always positive, as Barkema and Schijven (2008) critique, emphasized

that alliance experience generally seems to be conducive to firms' alliance activities, this study proceeds further by providing a boundary condition regarding when alliance experience supports alliance activities and when it is insignificant to alliance activities.

The study also contributes to the understanding of the effects of prior failure experience in a sequence of alliance. In particular, this study complements the work of Pangarkar (2009) which also focused on the effect of prior alliance failure to the future alliance outcome. Based on the argument that prior terminations enable firms to design better alliances and adopt more appropriate alliance management strategies to avoid future terminations, his study reveals that firms that have experienced prior terminations are less likely to have their future alliance terminated. In this respect, the present study complements his work by demonstrating additional effects that prior alliance failure not only provides negative impact to the firms' likelihood of forming the same type of alliance in the future, it can also delay the time of entrance when it starts a new alliance. Strongly assuming that failed prior activities might provide the firms with certain impacts different from those of not-failed ones, this study attempts to explain how failed prior alliances distinctively influence future alliance behavior. In this study, in particular, I argue that failure experience plays central roles in providing firms with opportunities to learn something new and thus innovate their existing alliance-related strategic resources. Indeed, as Finkelstein and Halebian (2002) argues, prior experience on failed case may create valuable learning opportunities that can enhance the overall program-level performance via improved alliance-related capabilities more than its direct negative influence on performance.

Thirdly, this study goes beyond the static perspective adopted numerous by prior studies on corporate alliance, which has focused primarily on alliance performance as an outcome variable and has examined the effects of firm (e.g. Chen,

2004), partners (e.g. Arya & Lin, 2007), and deal (e.g. Lee & Cavusgil, 2006) characteristics on alliances outcomes, which is one of the reasons why relatively less attention has been paid to the longitudinal studies on corporate alliance. However, in this study, by observing the life-histories of focal joint-ventures and subsequent joint-venture activities of their partners, I conceptualized alliance performance as an antecedent rather than an outcome variable and studied the influence of performance outcome of prior alliance on future alliance activities in a more alliance sequence perspective. Thus, this study provides a more dynamic perspective and new insights about the nature of firms' behavior to form a new alliance. In addition, this study provides further impetus for empirical studies on corporate alliance based on panel data and event-history analysis, which is more appropriate research methodological approach when it comes to studying how prior alliance performance affects subsequent alliance outcomes and activities.

5.2 Managerial implication

Essay two

The study has mainly two managerial implications. Firstly, the findings suggest that managers need to be cautious about the notion that past experience is always positive in the future activities. Although experience on prior alliance can provide various benefits to the firms when starting a new alliance such as better capability in partner selection or efficient routines for alliance management, it might also hamper alliance activities especially when firms need to innovate their current ways of conducting alliances in response to recent alliance failures. So, alliance managers should consider any potential negative consequences such as inertia and/or competency trap arising from established alliance routines or rigidly-embedded inter-firm collaboration networks. This consideration will help alliance managers take a more

balanced and comprehensive view on the roles of experience and create more flexible alliance-related routines, procedure or capabilities and ultimately achieve greater value from alliance.

Second, the finding that firms whose focal alliance was failed are more reluctant to form a new alliance of the same type provides the implication that alliance managers may need to observe potential partners' alliance history to predict the partner firm's likelihood to engage in new alliance. For example, firm may need to spend more amounts of initial efforts and resources for the successful establishment of cooperative relationship if they pursue an alliance with partners whose latest prior alliance of the same type was unexpectedly liquidated, sold to third-parties or bankrupted. The consideration of potential partner's prior alliance activities in addition to traditional resource-based and transaction-cost perspective, thus, enables managers to economize on required resources and efforts in initiating alliances and lead to better appreciation of the value of given alliance with specific potential partner. Thus, managers should go beyond the mere examination of the existence of partners' prior alliance experience and also consider whether potential partner has a negative outcomes in recent alliance because the performance feedback from prior activities should also have an impact on future behaviors (Greve, 2003; Levitt & March, 1988).

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