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Relatedness and Fit among Joint Ventures and their Parents

The effect of business relatedness and organizational fit on joint venture survival

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Management summary

In this study, a large sample of joint ventures was investigated to determine the drivers of joint venture success. First, the rationale for engaging in joint venturing was examined from the viewpoints of diversification, organizational learning, and organizational fit. Based on this investigation, the expected effects of relatedness between the joint venture and its parents, the relatedness among parents of a venture, and various components of organizational fit, on joint venture success were determined. These were then tested for their influence on the odds of termination as a proxy for joint venture success, by means of binary logistic regression with a sample of 4,974 joint ventures.

The findings are that a joint venture is most likely to be successful if its parents are active in the same two-digit SIC industry class. Additionally, the scope of the joint venture should be limited in order to reduce complexity. Ownership should not be distributed wider than 80/20 in order to retain harmony in decision-making and limit the incentive to cheat on behalf of the minority stakeholder. Finally, chances of success are highest when the parents are limitedly diversified at initiation of the venture. Relatedness between the joint venture on one hand and its parents on the other do not influence joint venture survival, nor does the overall relatedness in business areas of the firms that are involved in a joint venture setting.

Preface

This Master Thesis is the final requirement for attaining my Master's degree in Strategic Management at Tilburg University. The thesis was written during my 4th year at Tilburg University, and it concludes an interesting and enjoyable period.

Many people expressed their worries as for whether I would be able to combine writing my Master Thesis with a full-time internship at Philips, and I understand those doubts, exactly because of my own inherent lack of stress. However, both activities resulted in what feels to me as a fair result and a great experience.

I would like to thank my supervisor Prof. Tal Simons for her support and guidance during the thesis process. Without her helpful comments and nudges in the right direction, much work might have been wasted on pursuing potential dead ends. Furthermore, I would like to thank R. Sneep for reading and assessing my thesis.

Special thanks go out to my girlfriend Lisanne van der Linden for supporting me throughout the past four months.

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1. Introduction

1.1 Problem indication

Joint venturing describes the formation of a subsidiary by two or more partners, where both parent firms assume a stake in the subsidiary. Joint venturing can be seen as a combination of corporate venturing and alliances. Corporate venturing brings a firm the agility and open-mindedness of startup companies, while alliances capitalize on relationships and synergies of established firms. As joint venturing combines these advantages, it is a promising diversification strategy (Harrigan, 1988).

Corporate venturing is a term used to describe the internal formation of standalone legal entities. Established firms use corporate venturing in order to increase the effectiveness of diversification efforts. As large firms stray further from their main business, they increasingly run into various obstacles (Ansoff & Brandenburg, 1971). Such obstacles may be encountered in the form of organizational inertia, a lack of room for employee ideas, or managerial risk aversion. Simulating a smaller firm in a venture helps to alleviate these obstacles to innovation.

Alliances describe any form of cooperation between two firms in order to capitalize on potential synergies between them. A strategic alliance helps share risks and costs, improves knowledge, and generally brings the benefits of complementarities (Hitt, Keats, & DeMarie, 1998). On the other hand, entering into an alliance brings with it the difficulties of aligning interests and appropriating gains.

The combination of the benefits of corporate venturing with those of alliances makes joint venturing seem promising. It enables an established firm to utilize its relationships with suppliers, buyers and competitors as well as scale and scope advantages, and at the same time overcome the pitfalls that its size brings. However, various authors (Inkpen & Beamish, 1997; Geringer, 1991) have

described the mediocre track record of joint ventures, with instability rates of approximately 50%. Instability in this sense is defined as sell-off, liquidation and dissolution of joint ventures (Kogut, 1988). Causes that have been found for the high instability rate range from the existence of competition between the partnering companies (Park & Russo, 1996) to opportunism (Park & Ungson, 1997) and parent firm financial problems (Hennart, Roehl, & Zietlow, 1999).

In the field of research on strategic alliances, scholars have found that resource complementarity (Lin, Yang, & Arya, 2009) and knowledge relatedness (Tanriverdi & Venkatraman, 2005) influence the success of alliances. Other research has shown that the success of corporate venture depends among other factors on the internal or external nature of the venture (Sykes, 1986), the congruence between the venture's and parents' values (Sykes, 1986), and the endorsement by the parent companies (Stuart, Hoang, & Hybels, 1999). All of these factors touch upon some aspect of similarity. Similarity is a term used in this research to describe the overlap in business activities between the parents and their joint venture (Lane, Salk, & Lyles, 2001). This definition is consistent with most research on the relation between ventures and their parents, and it encompasses the various more specific units of analysis used in other research, such as compatibility of business objectives and strategic resources (Lyles, 1991).

Previous research thus implies that the degree of similarity is an important determinant of joint venture success. However, investigation of the direction of the effect of similarity is inconclusive. Strong similarity improves communication (Geringer & Hebert, 1989), while at the same time, dissimilarity has been shown to be beneficial to learning possibilities (Harrigan, 1988). While the benefits and downsides of similarity and dissimilarity have been covered in the literature, the interactions between similarity among parents and similarity between parent and venture are unclear. A better understanding of these interactions may lead to more effective decisions in terms of partner selection and the market entry mode when managers consider initiating a joint venture.

The factor that is expected to be decisive in the determination of the direction of the effects of similarity is organizational fit. Organizational fit encompasses

various factors related to similarity and compatibility of firms and their environments. A high level of organizational fit means that the many components of an organization are internally consistent, and it is generally accepted to be beneficial to firm performance.

1.2 Problem statement

Resulting from the aforementioned problem indication, the following problem statement arises:

"What is the influence of (a) similarity between parent firms, (b) similarity between parents and joint venture, and (c) the combination of these factors through organizational fit, on the survival of joint ventures?"

Before moving on, the various constructs in the problem statement will be defined.

1.3 Definitions

Similarity and **relatedness** are used interchangeably to describe the degree to which two or more things resemble one another. For this research, similarity is limited to the extent to which the primary business areas of two firms overlap. It can be seen as a continuum from completely unrelated to very similar, so that one can speak of the degree of similarity as an aspect of the relationship between two firms. A "match" is observed when two entities are active primarily in a common industry or business area.

Alliance partners are mostly defined as any two firms that engage in cooperative behaviour in a business environment. Two firms that engage in strong competitive behaviour in their everyday business but cooperate for a single project may still be called alliance partners. As this research is on the topic of joint ventures, the terms "alliance partners", "partners" and "parents" will be used to describe the firms that share the joint ownership of one or more joint ventures.

A **joint venture** is a standalone business unit, which is initiated by two or more partners. Both ownership and control are shared between the parent firms, although the distribution of ownership and control may vary from case to case. Common reasons to choose to engage in joint venturing are risk spreading and expertise transfer. Organizing activities in a venture that is separate from the main company prevents unwanted leakage of sensitive knowledge, and it enables a firm to engage in activities that are outside the scope of its day-to-day business by limiting interference between its current business and new activities.

Organizational fit describes the extent to which the characteristics of a firm are consistent. Internal organizational fit is determined by how the aspects of the firm itself work together to accomplish the firm's goals. External fit describes the appropriateness of the internal characteristics of the firm in relation to its environment.

Now that the main concepts have been defined, the research questions can be addressed.

1.4 Research questions

In order to find the answer to the aforementioned problem statement, several preliminary steps need to be taken. As the problem statement is rather intricate with its various relationships and interdependencies, it is difficult to analyze as a whole, and therefore it will be split up into components in order to enable thorough and clear analysis of the topic. These components are explained in the following research questions:

RQ1: What is the effect of the similarity between parents on one hand, and their venture on the other, on joint venture survival?

This research question focuses on the effect of similarity between the joint venture and its parents on the success of the venture. The answer to this research question will provide a better understanding of the direct effect of similarity on successful joint venturing, as well as provide a control variable

when analyzing joint venture survival for the problem statement. One should keep in mind that various levels of similarity are likely to be effective for various goals of joint ventures. As such, both similarity and complementarity will be explored as drivers of joint venture success.

RQ2: What is the effect of the mutual similarity between alliance partners on joint venture survival?

This research question delves deeper into the direct effect of the degree of similarity between two parents on their success as the parents of a corporate venture. This effect is useful in determining the optimal level of similarity between parents when engaging in joint venturing. As with the previous question, the answer will provide a useful understanding of the various degrees of similarity that are most effective in specified situations, and also provide a factor to control for in the answer to the third and final research question.

RQ3: What is the effect of the various components of organizational fit on joint venture survival?

The conjecture of this research question is that in order to achieve successful outcomes through a joint venture, firms need to meet the requirements of organizational fit. In addition to the factors that previous research has found to determine organizational fit, the expectation is added that the degree of similarity between parents needs to be aligned with the degree of similarity with the venture, in order for the venture to be successful. For example, if a joint venture is formed to enter a business dissimilar to the ones the parent firm is already active in, it is best to select a dissimilar partner. This conjecture is in line with extant studies on organizational fit (e.g. Venkatraman & Camillus, 1984; Miles et al., 1980).

1.5 Structure of the thesis

In chapter 2, the theoretical framework will be presented as retrieved from the relevant literature. Next, the research methods used for the analysis will be explained. After that, the results are presented and elaborated upon. Finally,

implications of the findings are discussed, followed by limitations and recommendations.

2. Theoretical framework

In order to investigate the processes that influence the success of joint ventures, the underlying rationales for companies to engage in joint venturing will first be analyzed. These rationales are found in diversification and organizational learning (Barkema, Bell, & Pennings, 1996; Hitt, Dacin, Levitas, Arregle, & Borza, 2000). To explain the factors that influence the

2.1 Diversification

The study of diversification is one of the main pillars of research on organizational strategy. It concerns the degree to which a firm can successfully spread its activities across various business areas. Studying this topic is relevant to research on joint ventures as joint ventures are a vehicle that can be used by firms to extend their activities to business areas that may be related or unrelated to the primary activities of the firm. Diversification theory deals among others with the question of how closely a firm should stick to its main business (Varadarajan & Ramanujam, 1989), and thus the effectiveness of various degrees of relatedness of parents and their joint ventures can be inferred after studying this area of research.

In order to be able to analyze the empirical data in Chapter 3, focus in this literature research will be on the underlying causes that drive diversification in firms. The rationale for diversification can be traced back in the literature to three main sources: the resource-based view of the firm; market power; and finally agency theory (Montgomery, 1994). The findings of extant literature in the areas of the resource-based view and market power will form the basis of hypotheses about the similarity between joint ventures and their parents as well as the similarity among the parents of a joint venture, in order to answer research questions 1 and 2. Agency theory will provide additional guidance in answering research question 1 by investigating the rationale behind specific diversification patterns.

2.1.1 The resource-based view

The resource-based view is grounded in Penrose's seminal paper. It argues that a firm's strength lies in its resources and in the ways it can utilize and combine these in better ways than competitors (Penrose, 1959). In the following section, the components of resource-based view research that are most relevant to the topic of joint ventures will be discussed.

While resources can often be acquired by any company, their potential lies in the synergies that can arise when a firm combines them. Such synergies are more commonly known as economies of scope (Panzar & Willig, 1981). Economies of scope are achieved when the cost of producing two distinct goods or services within one firm is less than producing them separately, for example because of shared facilities, knowledge or skills. Economies of scope are only effective as a competitive advantage when the resources involved cannot be combined through means of market transactions, or when such transactions would be more costly than the potential gains (Teece, 1980). In such a case, firms can gain access to the complementary resources they require in order to be successful in other markets through strategic alliances, notably in the form of joint ventures (Hitt et al., 2000). Firms are better able to value goods or services that are similar to the ones the company already has. In case of unfamiliar resources, joint ventures are a solution to still achieve economies of scope, as a firm can exploit the valuation skills of the partner with which it shares the joint venture. From this point of view, joint ventures are thus likely to survive if its parents are dissimilar.

An alternative viewpoint is that joint venturing is a method of accessing resources of another company (Das & Teng, 2000). More specifically, joint venture formation results from strategic resource needs and social resource opportunities (Eisenhardt & Schoonhoven, 1996). Strategic resources are the resources that are key to a firm's existence. They are the resources that allow a firm to gain value where others cannot. This advantage is sustainable by means of resource complexity so that it cannot be imitated (Barney, 1991). Social resource opportunities are advantages that arise when a firm makes use of its contacts, status or reputation (Eisenhardt & Schoonhoven, 1996). Using these

social resources can be useful in favorable deals, reduction of risk premiums and the exchange of strategic resources.

A joint venture can thus be seen as the product of two firms making use of their social status to access each other's strategic resources. An alliance would expose each firm's strategic resources directly to the partner, which may enable competitors to gain competitive advantage over a firm that exposes its strategic resources in such a manner (Cohen & Levinthal, 1990). A joint venture allows firms to choose which strategic resources are made available outside of the firm, and as such acts as a safeguard to prevent accidental leakage of valuable knowledge when a firm engages in a strategic alliance, especially when its strategic resources are also valuable to its partner.

A joint venture is a vehicle used to share and access strategic resources across firms. The primary rationale for joint venturing should therefore be the search for resource complementarity. This complementarity can lead to new sources of economies of scope, or to architectural innovations resulting from recombination of pre-existing but not previously combined strategic resources (Henderson & Clark, 1990). Complementarity between firms allows a joint venture to combine resources in situations where market transactions are too costly due to transaction costs (Hennart, 1988), too risky because of lack of transparency of the resource's values, or where the strategic resources are embedded in the firms and only generate rents when they are combined (Tsang, 2000).

Concerning the positioning of the joint venture relative to its parents, the resource-based view's main argument is that the purpose of a joint venture is the recombination of strategic resources in order to unlock new synergistic potential. As the grounding for the joint venture is in these pre-existing strategic resources, it can be said that a joint venture should not stray too far from the main strengths of its parents. Thus, seen through the lens of the resource-based view, a joint venture should be more effective in cases where the joint venture is similar to its parents.

2.1.2 Market power

Market power as a rationale for diversification was coined by Edwards (1955). Market power is the extent to which a firm can exert pressure on suppliers, customers and competitors by means of reputation or credible threat. Underlying market power are the phenomena of cross-subsidization, mutual forbearance and reciprocal buying (Montgomery, 1994).

Cross-subsidization or "deep pockets" enables a firm with greater market power to engage in predatory pricing in certain markets, using the funds of its more profitable markets (Montgomery, 1994). While the lower prices are beneficial to customers in the short run, predatory pricing increases barriers to entry and expels competitors from the market, leading to less competition in the long run (Faulhaber, 1975). The phenomenon of deep pockets implies that diversification can help a firm expand into industries it would not be able to compete in if the firm was not diversified. However destructive this may be to incumbent firms or the competitive situation in a market, it enables the "rich" firm to quickly gain market share. When two firms work together, the potential for cross-subsidization increases as their shared pool of available resources increases, and excess resources from several profitable markets can be used to subsidize the position in the target market. The fact that firms require funds obtained in other markets to successfully execute this tactic implies that the effect occurs when a joint venture is created outside of its parents' main markets.

A second display of market power is found in the phenomenon of mutual forbearance. This effect exists when diversified firms have the same competitors across markets. These firms may accept the mutual dependence that exists between them and their competitors, and embrace this dependence by cooperating with them (Bernheim & Whinston, 1990). Cooperation between competitors can improve the performance of the cooperating firms in two ways. First, the participants no longer waste resources on competing for customers, fighting over patents, and similar competitive struggles. This improves their performance vis-à-vis non-cooperating competitors. This effect is most notable in hypercompetitive markets, which have become more common in the late 20th century (Ilinitch, D'Aveni, & Lewin, 1996). Furthermore, the shared pool of

resources allows competitors to invest in opportunities that would be too expensive without cooperation. However, firms need to be careful in opening up their company to direct competitors. Various firms have used coopetition as a means to gain technology and market access at the expense of their "partners" (Hamel, Doz, & Prahalad, 1989). Considering this, a joint venture is an ideal vehicle to engage in mutual forbearance, as it enables a firm to better control what its partner has access to. Coopetition and mutual forbearance only apply to joint ventures with parent firms that share their main market. The phenomena be said to have a dual effect for these firms: on one hand, two mutually similar parents are better able to form a block against non-cooperating competitors; on the other hand, the risk of opportunism increases as the parent firms are too similar.

A final form of market power utilization exists in the form of reciprocal buying. As mentioned before, large diversified firms often recognize their mutual dependency as they meet each other in different business areas. This may lead to underhanded relationships between these large firms, where they engage in exclusive buying and selling agreements, disallowing smaller competitors to compete for orders (Montgomery, 1994). These underhanded relationships are most likely to form when the cooperating firms are active in the same businesses. It follows that joint ventures with parents active in the same business areas are likely to benefit from their parents' market power to become more successful than those with parents that do not have these benefits.

In sum, market power decreases competition and is thus advantageous for the diversifying firm. To reiterate the implications for joint ventures, cross-subsidization allows a joint venture that is active in a business area different from that of its parents to have an advantage over its competitors, while joint ventures that remain closer to their parents are less likely to benefit from aggressive market share gaining tactics. Mutual forbearance and reciprocal buying are most likely to occur when two cooperating firms are active in the same markets, leading to the argument that joint ventures with related parents are likely to be more successful. On the whole, market power remains ambiguous

about the direction of the effect of relatedness, but all components argue that an effect exists.

2.1.3 Agency theory

Agency theory followed from concerns about the separation of ownership and control of firms (Berle & Means, 1932). It describes how, absent a significant stake in the company, a manager will act in his or her own interests rather than those of the owner of the firm, especially when ownership is dispersed among many shareholders (Shleifer & Vishny, 1989). Dispersed ownership leads to impracticality of management by owners, and investors may not have the specific skills required for managing a firm, in the same way that a skilled manager may not have the funds to own a firm. The separation of ownership and control in many firms has several implications for the diversification strategies that these firms pursue.

As businesses mature, the number of profitable growth opportunities often declines, as it can be expected that a firm pursues its best opportunities first. However, the initial successful investments generate free cash flow, which drives managers to pursue diversification beyond the optimum (Jensen, 1986). Rationales for managers choosing continued diversification rather than returning profits to shareholders range from empire-building, to increasing demand for the manager's own skills (Shleifer & Vishny, 1989), to diversifying for the sake of spreading of their personal employment risk (Amihud & Lev, 1981). It is to be expected that a manager with a widely diversified business portfolio regards his "empire" as more impressive than a manager with a successful single-business firm. Managing across multiple businesses decreases the potential amount of substitutes for his position, as very few managers will have the specific experience needed to match an unrelated diversified firm's specific portfolio. Employment risk is minimized by diversifying into unrelated areas, as is the case with the risk incurred by stock portfolios. It follows logically that as a firm spreads into a broader range of business areas, it is more likely that a manager is diversifying beyond the optimum, implying that the firm is less likely to benefit from further diversification.

To conclude, it has become clear that a manager that acts as an agent for shareholders has an incentive to diversify into unrelated business areas. As explained through the lens of the Resource-based View in section 2.1.1, this is not beneficial to the firm. Agency theory thus argues that joint ventures that are dissimilar to current activities of parent firms may be the result of managerial misbehaviour, and consequently survival of dissimilar joint ventures is likely to be lower. This negative effect is expected to be stronger for firms that are already active in a broader spectrum of industries.

2.2 Organizational learning

Organizational learning is the process of continuous improvement of firms' processes as their experience increases. The search for organizational learning is an important driver of external activities of a firm, such as alliances and joint venturing. Huber (1991) categorized the main streams of research on organizational learning into five categories: knowledge available at firm initiation; learning from experience; learning by observing other firms; grafting (acquiring) sources of knowledge into the organization; and finally external search for information about the environment. As joint ventures deal with knowledge acquisition after formation of the firm, the first category is not relevant for this research. Learning by observing other firms will be discussed as a section of grafting, as this contains the components relevant to joint ventures. Finally, as interest is in the search for governance skills and strategic knowledge rather than the search for information about the external environment, Huber's last category will not be addressed in this research. In the following section, the remaining two categories will be explored in the light of joint venturing. Together, these effects help explain the drivers of joint venture success, and thus the various effects that similarity between partners can have.

2.2.1 Knowledge transfer

The act of engaging in joint venturing is a valuable learning opportunity for the involved firms (Inkpen, 2000). Learning through joint ventures is a process that consists of multiple stages (Nonaka, 1994). First, the joint venture is formed, and

individuals from the partners interact with one another. While communication across firms is inherently less effective than within firms, an important fact to keep in mind is that similarity between the communicating parties is an important determinant for cross-firm interaction at the level of initial exposure (Argote & Ingram, 2000). In the next stage, the exposure may lead to the discovery of skill differences between the partners. Identification of skill differences clarifies the potential of the alliance. By actively searching for these differences, the involved firms can determine the effectiveness of allying at an early stage (Nonaka, 1994). As skill differences positively influence the potential for knowledge transfer, once can expect dissimilar partners to find more utility in engaging in a joint venture together. Finally, through interaction and collaboration, new knowledge at the alliance level is created, which is then transferred or "grafted" into the parent firms. The effectiveness of this transfer depends on the combination of the accessibility of the knowledge at the alliance level and the effort put in by the parents to recover the created knowledge (Inkpen, 2000). Knowledge accessibility depends on the nature and complexity of the knowledge and the openness of the knowledge holder, and thus no implications for participant similarity can be drawn. The effectiveness of knowledge acquisition however is best supported by a high level of similarity in knowledge between a joint venture and its parents, as both knowledge connections (Inkpen, 1996) and knowledge relatedness (Fichman & Levinthal, 1991; Powell, Koput, & Smith-Doerr, 1996) are both best enabled in a setting where the joint venture is similar to its parents.

A factor that further influences the effectiveness of knowledge transfer is the bounded absorptive capacity of firms. Absorptive capacity is a term used to describe the degree to which a firm is able to recognize the value of new, external information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990). This early definition was later reworked by Zahra and George (2002) to include the concepts of dynamic capabilities and focus more on sustainable acquisition of skills, rather than the static measure of skill in absorbing outside information. They identified various drivers of absorptive capacity, the most important of which were past experience, knowledge

complementarity, and diversity of knowledge sources. Previously formed joint ventures and a broad diversification into various business areas signal past experience in absorbing new knowledge into the firm. Knowledge complementarity is most commonly found when two parent firms are similar to one another. Diversity of knowledge sources is best accomplished in a setting with dissimilar firms.

Knowledge transfer as a rationale for diversification is thus inconclusive about the effects of similarity on joint venture outcomes. However, it can be said that the scope of the joint venture should be limited to foster knowledge accessibility, and a large scope of diversification the parent firms is expected to signal a high amount of absorptive capacity as a result of experience.

2.2.2 Experiential learning

A second source of organizational learning is experiential learning. Rather than dealing with direct acquisition of knowledge, experiential learning from joint ventures is concerned with improving the process of learning from partners, which occurs as a parent firm enters into various partnerships and builds up experience in strategic alliances.

Experiential learning has been observed in a number of contexts. The clearest example is that of learning curves, which holds that a firm improves its processes as it repeats its actions. The learning effect occurs as a firm responds to feedback it receives about the outcomes of these actions, leading to incremental improvements (Levitt & March, 1988). This definition of experiential learning is mostly used to describe increasing performance in productions, although it can also be applied to strategic processes. For example, Barkema & Schijven (2008) state that as a firm performs multiple acquisitions over time, its acquisition process improves as the firm gains feedback from its earlier acquisitions. The firm learns to detect positive and negative signals about acquisition targets and improves its integrative capabilities. This higher-level organizational experience effect occurs also in settings of joint venturing, where a firm may improve its skills in for example the level of control exerted over the joint venture, as well as

the scope of diversification. As a result, parent firms that have more experience with diversification can be expected to more effectively run a new joint venture.

2.3 Organizational fit

Organizational fit describes the consistency between various elements that affect an organization. This considerably vague definition can be split into two broad sub-classes of fit: internal fit and external fit. Internal fit describes the consistency among elements that are under the control of the organization (Chandler, 1962). External fit describes how appropriately these chosen elements match a company's environment (Lawrence, Lorsch, & Garrison, 1967). Although the choice for a joint venture is inherently external in nature, external fit is contingent upon internal consistency, and thus both schools of thought will be addressed in this section. Furthermore, Douma, Bilderbeek, Idenburg & Looise (2000) determined drivers of internal and external fit which affect alliance success, which will be explained in this chapter and consequently used in the data analysis in Chapter 3.

2.3.1 Internal fit

The notion of internal fit is grounded on the linkage between organizational strategy and structure (Chandler, 1962). It makes intuitive sense that an organizational strategy, which describes the plan of action of a firm, needs to be aligned with the means with which this plan of action is to be executed. However, such alignment has been observed to follow mostly stable patterns or "configurations" of elements within a firm (Miller, Friesen, & Mintzberg, 1984; Meyer, Tsui, & Hinings, 1993). While infinitely many configurations are possible, groups of firms often follow central themes that align strategy and structure, suggesting that certain configurations consistently outperform others (Miller, 1996). When the elements in a firm are configured such that strategy and structure are aligned, the firm is more effective. These successful configurations can be identified by means of one of three methods: the first is the development of theoretical typologies; the second uses empirical observations to generate

taxonomies; and the third studies configuration as a variable that determines the success of competitive advantage (Miller, 1996).

The development of typologies by means of theory building is interesting, but often proves to be insufficient in explaining the interrelations, as organizations are simply too complex for a human being to consider all potential linkages. As a result, configurations identified through theory building are often broad and limitedly applicable (Miller, 1996). An example of a well-known typology is Mintzberg's (1980) classification of organizational structures. Each configuration describes a setting in which one of five possible structures of the firm is combined with a focus on one of five structural sections, a basic mechanism of coordination, one of the design parameters, and a setting of contingency factors such as firm size and age (Mintzberg, 1980). Only few of these potential configurations are theoretically promising (Miller, 1996). As a result, a firm can determine and start building towards the best-fitting configuration, basing their decision on factors that the firm cannot influence, or upon the goal of the firm. However, it is important to note that theory building has limits. Very many configurations are possible; the accuracy of theoretically analyzing various configurations is limited; and finally, it is impossible to include all variables that affect the success of a firm. It appears that theory cannot offer a clear advice on fit. Let us turn to empirical generation of configurations for a more practical method.

Taxonomy is described as the observation of configurations as they emerge naturally (Miller, 1996). By means of hypothesis testing and clustering algorithms, inferences can be made about successful combinations of firm traits (e.g. Haas, Hall, & Johnson, 1966; Ulrich & McKelvey, 1990). By observing the formation of such clusters over time, the underlying dynamics are revealed (Siggelkow, 2002). For example, some researchers found a Darwinian selection process to hold for organizational configurations, in which only the most successful configuration in a sector survived (Miller, 1993). After identifying a cluster of firms that have similar traits, it is important that the results are linked back to theory. This can result in integration of some of the main theories, such as the resource-based view, theory on competitive advantage, and market

power, by identifying how the most successful firms fit these factors together in the most successful way (Gruber, Heinemann, Brettel, & Hungeling, 2010). In the context of joint ventures, organizational fit theory suggests that there are some factors that can be observed to occur naturally across firms that are the most successful in their joint venturing activities. Similarly, the activity of engaging in joint venturing is likely to be a trait that identifies firms that are either more or less successful. As the focus of this research is on the success of joint ventures and not on the overall performance of their parents, the analysis in the next chapters will search for traits of parents and joint ventures that connect the groups of joint ventures that were terminated and those that were not.

Douma et al. (2000) determined a number of drivers of organizational fit that were beneficial for alliance outcomes. Due to the nature of the regression analysis in this thesis, two drivers of organizational fit were selected for investigation. The first is the reduction of complexity of the alliance. The complexity is lower when the number of partners in the alliance is limited, and the scope of the joint venture itself is also limited.

The second driver of organizational fit is the enabling of effective management control. Effectiveness of control in a joint venture is largely determined by the ownership structure. On the one hand, decision-making speed is higher when one firm has a majority stake, as standoffs are avoided (Park & Russo, 1996). However, a 50/50 split benefits harmony (Geringer & Hebert, 1989) as well as stability (Chung & Beamish, 2010) of the joint venture's control structure. Killing (1983) argues that it is not feasible for a majority stakeholder in a joint venture to overrule the minority in case of a conflict, as this would result in severe dissatisfaction on behalf of the minority stakeholder, and as a result, reduced success of the alliance. Additionally, an unequal distribution of ownership may result in opportunistic behavior on the part of the minority owner. For example, in case of a 40/60% ownership distribution, reducing inputs by $1 will reduce the minority shareholder's gains by 40% of the profits that the joint venture would have created by using that $1, which is most often less than the $1 that is saved by lowering inputs (Park & Russo, 1996). This effect has been empirically proven to be destabilizing to joint ventures (Blodgett, 1992). As a consequence,

some unequal ownership JVs are run as if there was a 50/50 distribution. It can thus be argued that equal-ownership joint ventures are likely to perform better than their unequally distributed counterparts.

2.3.2 External fit

Lawrence & Lorsch (1967) used the interesting theories on internal fit to draw the environment of firms into consideration, forming the basis for contingency theory. This theory describes how the success of a specific type of firm largely depends on its environment. Venkatraman & Camillus (1984) noted that the entire field of strategy rests on the concept of matching organizational aspects with opportunities and threats in the environment. Internal attributes of an organization such as structure and orientation can be tested to determine the extent to which they fit the external variables that affect a firm, and consequently how that fit affects performance.

Although every firm needs to find fit with its environment, the importance of fit becomes even more apparent when a firm engages in long-term cooperation with a partner (Douma et al., 2000). In a merger or acquisition, the successful integration of the target firm is already a delicate matter, as can be observed in recent calculations of failure rates: 83 percent of the deals fail to deliver value to shareholders, and 53 percent actually destroy value in the process (Harding & Rouse, 2007; Cartwright & McCarthy, 2005). In case of an alliance, one should take into account the difficulties that arise because of long-term balancing of various factors that affect fit, rather than a one-time match or mismatch situation (Douma et al., 2000). An unequal distribution of ownership in a joint venture further complicates this balancing, as both firms should have a fair share in control as well as in- and outputs over this longer period of time.

Determining the extent of fit is challenging, as the concept of fit inherently concerns many different variables, not all of which are easily converted to measurable units (Drazin & Van de Ven, 1985). Additionally, the fact that many firms may run into several external contingencies at the same time obfuscates the direct effects of a specific combination of internal and external factors, complicating the interpretation of observed effects (Gresov, 1989). Two factors

that Douma et al. (2000) identified as drivers for external fit are mutual dependency and balance between the parent firms, and strategic importance of the joint venture to its parents. The first of these factors coincides with the match between parents in terms of business area and equal distribution of ownership. The second can be inferred from the business relatedness between a venture and its parents. A third construct that will be investigated is whether external fit is improved when both parents and the venture are aligned in terms of similarity. This means that when two parents are dissimilar, the joint venture will also be dissimilar from its parents, and vice versa. Alignment of similarity is likely to improve the harmony between the involved parties and equality of in- and outputs.

2.4 Wrap-up and hypotheses

Now that the various viewpoints relevant to predict joint venture success have been examined, the findings will be transformed into hypotheses, which will be tested in the next chapter.

First of all, the measure of similarity in business areas between a joint venture and its parents is fundamental in many theories that attempt to explain the success of joint ventures. Supporting arguments can be found in the resource-based view, which states that resource complementarity is an important predictor of success, implying that joint ventures that are active in the same business areas as their parents are more successful than those that are not. Agency theory argues that similarity among business areas signals strategic value of the joint venture, rather than empire building of managers. The organizational learning school argues that knowledge transfer is more effective in settings where similarity is high, because of accessibility of knowledge and the effectiveness of acquisition of this knowledge. Finally, a venture in the same industry as its parents is a signal of strategic importance, which is one of the drivers of organizational fit.

The main contradicting argument for the advantage of similarity between joint ventures and their parents lies in market power as a driver of diversification. A

firm with high market power has the resources to invest in unrelated industries through a joint venture, which gains an advantage over its competitors in this new market by using cross-subsidization of its dissimilar parents. As the arguments for this type of similarity outweigh those against, the following hypothesis emerges:

Hypothesis 1:

Joint ventures that are active in the same business areas as their parents are less likely to fail than those that are not.

The next construct that is analyzed is the mutual similarity among parents of a joint venture. Arguments for this type of similarity stem mainly from the market power line of reasoning for diversification. Mutual forbearance reduces the competition between the parents of a joint venture when they recognize their interdependence across markets, improving harmony in governing the joint venture. According to organization fit theory, this effect is strengthened when the governing structure allows for equal distribution of control in the joint venture. Furthermore, reciprocal buying strengthens the bond between alliance partners and gives them an advantage vis-à-vis competitors when they are active in the same market. Finally, communication between partners and knowledge complementarity are supported by similarity, improving knowledge transfer potential.

Arguments against parent similarity stem mainly from the resource-based view of the firm. Similarity implies that strategic resources owned by the parent firms are valuable to their counterparts, leading to increased risk of leakage. Furthermore, dissimilarity among parent firms increases the potential of using the partner's skills in valuing resources unfamiliar to the firm. Knowledge complementarity and diversity are also best favored by dissimilarity among allying firms. To find whether the arguments for or against parent similarity are supported the strongest, the following hypothesis will be tested:

Hypothesis 2:

Joint ventures with parents that are mutually similar are less likely to fail than those with mutually dissimilar parents.

Finally, organizational fit studies argue that internal and external fit have a positive effect on the success of joint ventures. Internal fit is achieved through reduction of complexity and through harmony in ownership and control. External fit is encouraged when balance and interdependency exists between the two parents, and when the joint venture is strategically important to both of its parents. Additionally, when the similarity between a joint venture and its parents matches the similarity between the parents, external fit is expected to be better. The effect of fit on joint venture performance is expected to be positive, as fit improves the sustainability of an alliance and the extent to which that alliance is appropriate in dealing with its environment. This leads to the final hypothesis:

Hypothesis 3:

Joint ventures that meet the requirements of organizational fit perform better than those where organizational fit is weak.

In the next chapter, the methods used to test these hypotheses will be explained.

3. Research methods

The study of joint ventures by means of regression analysis is complicated because of the many behavioral or "soft" variables that affect the effectiveness of joint ventures and are not easily captured by numerical data (Parkhe, 1993). However, by means of an extensive data sample and careful considerations of included variables, the hypotheses can be analyzed.

3.1 Sample

First of all, although interfirm partnerships exist in nonequity as well as equity variants, only equity alliances were considered for investigation. This is consistent with other studies (e.g. Kogut, 1988; Park & Ungson, 1997). Joint ventures have relatively standardized governance methods, as opposed to non-equity alliances. This standardization results in improved specificity and applicability of the findings.

Although industry effects exist in studies on joint ventures (Auster, 1992), the choice was made to include joint ventures in all industries in the sample. The reasoning behind this is twofold. First, the drivers of joint venture success that emerged from the literature review are non-industry-specific, and thus, if relationships are found, they can be said to hold regardless of industry. Second, the choice of termination as a categorical dependent variable in combination with a limited timeframe for observations means that the sample has to be large in order to produce interpretable outcomes. Limiting the sample to one or two industries and using recent data does not provide enough cases of termination to make statistical inferences.

All joint ventures that were initiated by two firms between 1995 and 2005 are included in the sample, and observations of these joint ventures extend through 2012. Limiting the sample to joint ventures with two parent firms ensures consistency in results. The dynamics of control between multiple-party joint ventures are even more complex than those of ventures with two parents, and furthermore, two-party joint ventures are much more common. The timeframe is

chosen so that observations are recent. The observations extend past the sampling period so that for all included joint ventures, the success can be reasonably determined by looking at the termination rate, as one can expect an unsuccessful joint venture to be terminated within 7 years. This approach is adopted from Park & Ungson's (1997) study on the causes of joint venture dissolution. Combining these criteria, information about 4,974 joint ventures was available in the Securities Data Commission (SDC) database.

3.2 Variables

3.2.1 Dependent variable

Joint venture termination

The dependent variable that was chosen for this regression was joint venture termination. The first reason for this choice was feasibility of the research. Many companies do not disclose the financial performance of their joint ventures, and joint ventures often do not have as much information publicly available as listed companies. Information on whether or not the joint ventures in the sample had been terminated could be extracted from the SDC database. Park & Russo (1996) argued that dissolutions are unambiguous, as they cannot be tampered with through accounting tricks, making it a more realistic measure of joint venture success than financial measures traditionally used as a proxy for firm performance. Additionally, even if reliable financial data were available, the goals of joint ventures may differ. A probing joint venture in a new market or a learning joint venture may not produce profits but still be successful to its parents. Termination can be expected to rely on whether or not the venture achieves the goals of its parents.

If a joint venture was terminated in the observed period, the variable takes value 1. If not, the value is 0.

3.2.2 Independent variables

Joint venture-to-parent business area similarity

Business area similarity, or the degree to which a joint venture is a case of related diversification, is determined by comparing the primary SIC code of the joint venture with the primary SIC code of each of the parents. SIC codes categorize firms into groups active in similar industries, and they are generally accepted as good measures of similarity in activities of firms (e.g. Park & Ungson, 1997; Pennings, Barkema & Douma, 1994). An SIC code match at the four-digit level results in value 4; if the first three digits of the SIC codes match, this variable takes the value 3, etcetera. If no match is found, the value is 0. This variable will be used both independently as driver of joint venture survival, and as a measure of strategic importance to both parents, which is one of the drivers of external fit.

Parent-to-parent business area similarity

Similar to the previous variable, this similarity measure uses the primary SIC codes of both parents to determine whether they match. If the SIC codes match at the four-, three-, two- or one-digit level, the value is 4, 3, 2 or 1, respectively. If no match between parents exists, this variable takes value 0. Similar to the JV-to-parent similarity variable, this factor will be considered both as a direct influence on joint venture termination and as a component of external fit.

Ownership distribution

The difference in ownership stakes is an important driver for internal organizational fit. As explained in section 2.3.1, in case the distribution of ownership of a two-party joint venture is different from 50/50, the harmony of decision-making is negatively affected, and incentives to cheat increase. This is expected to show as a higher probability of termination among joint ventures with an ownership structure different from 50/50. The dynamics of a joint venture with a large difference in ownership stakes are expected to be different from those with a more equal distribution, as small minority stakeholders are likely more acceptant of their limited role in decision-making, although their incentive to cheat is higher. Following Joang, Tao & Santoro (2010), a distinction

is therefore drawn between joint ventures with a dominant ownership stake of 80% or more, between 50.1 and 79.9%, and those with equal ownership distribution.

Joint venture scope

The scope of the joint venture is included as a discrete variable, with its value determined by the number of SIC codes the joint venture is active in. This variable is used in conjunction with the distribution of ownership to determine the extent of internal organizational fit, which is expected to degrade as the scope (and thus the complexity) of the joint venture increases.

Goal alignment

The extent to which the goals of both of a joint venture's parents are aligned is determined by the relationship between the parents' primary SIC codes and the primary SIC code of the venture. In case both parents have the same number of SIC digits in common with the joint venture, their goals are said to be aligned, and this categorical variable takes value 1. If this is not the case, the value is 0. This alignment drives external fit together with JV-to-parent similarity.

3.2.3 Control variables

Parent scope

A control measure was included in order to distinguish between diversified and non-diversified or specialized firms. This discrete variable equals the total number of SIC codes the parents were active in at the moment the venture was formed. As was discussed in section 2.1.2 (Agency Theory), when managers pursue continued diversification while the company is already active in a broad range of markets, it is possible that the rationale for further diversification is not the interest of shareholders, but rather personal empire-building or similar activities which add no value to the firm. In such cases, termination of the venture might occur sooner than in cases where no such activities took place. Conversely, a broader scope signals improved absorptive capacity and venturing experience of parent firms, which are expected to improve the outcomes of joint ventures.

International dummy

As the sample contains intra-national as well as cross-border joint ventures, the geographical scope needs to be controlled for. A dummy variable is included to reflect whether or not a joint venture is international as seen from the perspective of at least one of its parents. If a cross-border relation exists, either among parents or between parent and venture, this variable takes value 1. If not, the value is 0.

Year dummies

A categorical variable to reflect the year in which the venture was formed was included, to account for general economic trends and other non-firm-specific influences on the termination rate of joint ventures.

3.3 Model

The most common way to achieve linear interpretation of effects and individual significance of IVs is by means of an ordinary least squares (OLS) regression. However, OLS regressions are not suited for regression tests with a binary dependent variable. OLS does not necessarily result in an outcome of Y in the interval [0,1] and thus the β-values are meaningless, as the probability of an event occurring cannot be below zero or over one (Nieuwenhuis, 2009).

Instead, the regression analysis uses a logistic regression model. Logistic regression analysis is especially suited in cases where the dependent variable is dichotomous. It provides beta values which can be interpreted as a change in the log odds of the dependent variable (Nieuwenhuis, 2009). For instance, if β_1 is 0.2 and X_1 were to increase by one, the probability of the dependent variable Y being 1 increase by a factor of *e* (approximately 2.71828) to the power of 0.2, or approximately 1.22. In this study, that would mean that for an increase of an independent variable by one unit, the venture is 1.22 times as likely to terminate as compared to the situation where the independent variable did not increase. Individual significance of the independent variables can be determined by means of the Wald statistic. The Wald statistic tests whether the β-value of an independent variable is significantly different from 0, and the outcome of the

Wald test can be compared to a Chi-squared distribution in order to determine the level of significance.

The sample used for the analysis meets all requirements of logistic regression. Logistic regression is not dependent on assumptions of normality, linearity, and homogeneity of variance of the independent variables. The minimum cases-to-variables ratio is 10 to 1, and the preferred ratio when using simultaneous entry of variables is 20 to 1 (Hosmer & Lemeshow, 2004). Including the conversion of categorical variables to dummies suitable for logistic regression, the cases-to-variables ratio of this analysis is roughly 200 to 1. Some factors that may cause implausible results in logistic regression are complete separation, where an independent variable has exactly the same distribution as the dependent variable, and multicollinearity. These effects are easily identified, as they produce standard errors larger than 2 for independent variables.

4. Results

4.1 Descriptive statistics

Table 1 presents descriptive statistics as well as the correlation matrix for the variables.

Table 1

Descriptive statistics and bivariate correlation matrix [a]

	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. JV termination	.031	.173									
2. Parent scope	8.431	7.053	.082*								
3. International	.794	.405	-.021	-.002							
4. JV-to-parent similarity	1.687	1.622	.006	-.026	-.031						
5. Parent-to-parent similarity	1.370	1.539	.026	-.057*	.012	.472*					
6. JV scope	1.820	1.203	.069*	.075*	-.068*	-.018	-.013				
7. Unequal ownership	.321	.467	-.017	.016	.083*	.036	-.001	.005			
8. Dominant ownership	.028	.165	.168*	.021	.021	-.020	-.016	.021	-.117*		
9. Parent-parent-JV relatedness match	.578	.494	.001	-.021	.037*	-.338*	-.116*	..010	-.015	.010	
10. Goal alignment	1.047	1.350	.022	.693*	.813*	-.007	.017	-.016	.017	-.012	.147*

[a] Year dummies excluded from the table for parsimony.
* p < .01 (2-tailed)

The first interesting figure that arises from the descriptive statistics is the termination rate of joint ventures in the sample: 153 of 4974 firms, or 3.1%. This

rate is very low compared to other studies (e.g. Park & Russo, 1996). A possible cause of this low rate of termination is the secondary nature of the source data for the sample. Gathering primary data would ensure that all terminated joint ventures are marked as such, but given the longitudinal nature and scale of this study, this was not feasible. However, as the sample size is very large and the ventures that were terminated in the observed period are a result of missing data, rather than of selection bias, the 153 failed joint ventures in the sample can still be expected to show drivers of joint venture termination that are representative for the population.

A second notable observation is the significance of many correlation coefficients. However, significance in this context merely shows that a correlation coefficient is different from 0 with certainty at the $p < 0.01$ level (Taylor, 1990). The critical value of a correlation coefficient decreases as the number of degrees of freedom increase. As the number of degrees of freedom for correlations is equal to the number of observations minus two, for a sample size this large, no inference can be made from statistical significance alone. Instead, a rule-of-thumb for practical significance as proposed by Tabachnick and Fidell (1996) will be followed. They state that an independent variable with one or more correlation coefficients exceeding 0.7 should be excluded from multivariate regressions. As a result, the variable "Goal alignment" cannot be used in the analysis. The remaining correlations do not significantly influence the results of the regression.

4.2 Regression outcomes

The results of the logistic regression are summarized in Table 2. Model 1 includes only the control variables. Parent scope is a significant ($p < 0.01$) predictor of termination, with every SIC code the parent firms are active in increasing the odds of termination by approximately 5%, ceteris paribus. Whether or not a joint venture is international in geographical scope is not found to be of significant influence. No significant effect of any of the year dummies exists in any of the models, either.

Table 2

Logistic regression results for Termination[a]

		Model 1	Model 2	Model 3	Model 4
Controls	Constant	-3.526** [.406]	-3.529** [.424]	-3.204** [.424]	-1.503** [.549]
	Parent scope	.047** [.009]	.045** [.009]	.051** [.009]	.048** [.009]
	International	.198 [.193]	.193 [.193]	-.221 [.192]	.222 [.201]
JV-to-parent similarity	First-digit SIC match		-.165 [.228]		-.174 [.284]
	2-digit SIC match		.205 [.248]		.481 [.279]
	3-digit SIC match		-.018 [.273]		.052 [.302]
	4-digit SIC match		.103 [.340]		.306 [.364]
Parent-to-parent similarity	First-digit SIC match			-.439* [.216]	-.483 [.258]
	2-digit SIC match			-.743** [.282]	-1.023** [.317]
	3-digit SIC match			-.325 [.272]	-.401 [.298]
	4-digit SIC match			-.402 [.399]	-.606 [.429]
Internal fit	JV scope				.172** [.051]
	Unequal ownership				-.035 [.196]
	Dominant ownership				-2.284** [.249]
External fit	JV-parent-parent similarity match				-.152 [.189]
	df	12	16	16	24
	Chi-square ($\chi 2$)	42.375**	44.968**	49.994**	131.906**
	Cox & Snell R^2	.008	.009	.010	.026
	Nagelkerke R^2	.035	.037	.042	.109

[a] Year dummies excluded from the table for parsimony.

* p < .05, ** p < .01 (2-tailed)

Model 2 investigates the effect of JV-to-parent similarity to test Hypothesis 1. The JV-to-parent similarity variable is found to be not significant. The Chi-squared value of this model is only marginally higher than that of Model 1. It follows that JV-to-parent similarity cannot be said to influence the rate of termination of joint ventures. Thus, Hypothesis 1 is not supported by the results.

Model 3 includes parent-to-parent similarity as well as the control variables and is used to test Hypothesis 2. Parent-to-parent similarity at the 1-digit level is a significant ($p < .05$) negative predictor of termination. A match at the single-digit SIC level implies a termination likelihood that is approximately 64% of the odds of termination of a joint venture with dissimilar parents. A match at the 2-digit SIC level reduces odds of termination by 52% ($p < .01$). Interestingly, a match between parents at the three- or four-digit SIC level does not significantly decrease the likelihood of termination of the venture. Hypothesis 2 is thus supported for one- and two-digit SIC level similarity. The overall usefulness of the model is marginally higher than Model 2.

Model 4 includes all variables in order to test Hypothesis 3. The effect of an increase of joint venture scope is found to be significant ($p < .01$) and positive, with odds of termination increasing by approximately 19% for each additional SIC code in the scope of the joint venture. Distribution of ownership is a significant and positive predictor in cases where the majority stakeholder owns more than 80% of the venture. The results show that such JVs are ten times more likely to be terminated than a JV with equal distribution of ownership. JVs with majority stakes between 50.1% and 80% do not differ significantly in their rate of termination from equal-ownership JVs. Furthermore, the measure of external fit is that remains after excluding the variable for goal alignment is not of significant influence on the odds of termination. It can be concluded that Hypothesis 3, which states that joint ventures that meet the requirements of organizational fit perform better than those that do not, is confirmed.

4.3 Model significance

The Chi-squared value is significant ($p < .001$) for all models. This means that all models are better predictors than an empty model. A downside of logistic regression is that no reliable r-squared value exists that shows how much of the variability is explained by a model, as is the case with ordinary least squares regressions. However, a comparison among models can be made using Cox & Snell's and Nagelkerke's pseudo R-square values. Using these values, it can be observed that Model 2 is an incrementally better predictor than Model 1, and Model 3 is slightly better still. Model 4, however, is by far the best predictor of termination of joint ventures.

5. Discussion

Now that the regression has been interpreted in terms of the hypothesis tests, the implications of the findings will be discussed.

5.1 Analysis of hypothesis outcomes

5.1.1 Influence of JV-Parent similarity on JV survival

Results of the regression analysis show that there is no significant effect of joint venture-parent similarity in terms of business activities on joint venture survival. This can be explained through the lens of organizational learning.

As March (1991) argued, firms need to balance exploration and exploitation in order to improve performance and increase the strength of their competitive advantages. Exploration describes the search for new opportunities, while exploitation describes the continuation of the status quo. Too much focus on exploration will cause the core business to degrade, leaving fewer resources available for new exploration activities, and potentially leading to a firm's demise (Gibson & Birkinshaw, 2004). Exploitation to the point of exclusion of exploration will cause a firm to get overtaken by market shifts and competency traps (Levinthal & March, 1993). A joint venture can be an extension of a firm's core business, for example as a vehicle for entry into a new market, thus facilitating expansion of exploitation of the parent firms. On the other hand, a joint venture can be used to explore opportunities that are distinct from the parents' main activities to protect the venture from being held back by organizational inertia (Schildt, Maula, & Keil, 2005).

As a result of this dual role of relatedness between a joint venture and its parents, no unequivocal advice can be given. However, it is interesting to compare the joint venture a means of exploitation versus its potential role in exploration. Of all possible methods of cooperation between two firms, a joint venture is best suited to exchange valuable knowledge while controlling the exposure of strategic resources to the partner. This is appropriate in explorative settings where recombination of knowledge is key. Explorative settings are

inherently more risky than extensions of extant business. An alternative way to interpret the indecisiveness of the results is that explorative joint ventures are not terminated more often than their exploitative counterparts, and thus the joint venture is successful in diminishing the inherent risk of explorative learning. However, this could also be caused by inappropriateness of joint ventures as a means of expansion through exploitation.

It is noteworthy that no significant effect on termination was found for matches at either the 4-, 3-, 2- or 1-digit SIC level when compared to a setting where the ventures were completely unrelated to both of their parents. This reinforces the notion that the degree of relatedness between parent and venture cannot be said to be better or worse without taking into account the purpose of the joint venture.

5.1.2 Influence of Parent-Parent similarity on JV survival

The logistic regression shows a significantly positive effect of parent-parent similarity in case the parents have a common first-digit SIC sector, and a stronger positive effect for ventures with parents that have the first two digits of their primary SIC code in common. Three- and four-level matches do not have a significant influence.

A single SIC-digit match means that two parent firms have their primary business area in a common major industrial sector, such as manufacturing, trading or services. As two-digit matches are more specific, it follows that parent firms with a two-digit match are on average more similar than those with a single-digit match, and the effects are stronger as well. Various causes can be identified for the reduced odds of termination for joint ventures in these cases. First of all, parent firms in a common sector are more likely to have compatible organizational characteristics than unrelated firms. This compatibility of characteristics is a driver of absorptive capacity, which is a requirement for learning from a joint venture (Park, Whitelock, & Giroud, 2009). Additionally, it improves communication between the parents (Argote & Ingram, 2000), which in turn improves the effectiveness of governance of the joint venture (Geringer & Hebert, 1989).

When parent firms operate in the same business area at the three- or four-digit SIC code level, the effects of improved governance and learning are offset by increasing effects of competition. Joint ventures often fail due to relationship and resource sharing problems (Deitz, Tokman, Richey, & Morgan, 2010), which are more likely to occur if the two parent firms are competitors. Both the act of simultaneous competition and cooperation, and the shared interest in the same strategic resources by both parents, will cause difficulties.

The implications of this difference in effectiveness of similarity are interesting. The fact that a firm is more likely to create a successful joint venture when partnering with a somewhat similar firm limits the effectiveness of JVs with a radically explorative purpose, as recombination of strategic resources of parents in dissimilar industries is ineffective due to incompatibility. However, unrelated diversification has been advised against many times before. What is striking is how the results of this analysis concur with the notion that a balance needs to be struck between explorative and exploitative learning in the context of partner selection for joint venturing. Straying too far from the primary business area leads to incompatibility, while staying too close will cause competitive effects to eclipse the potential gains. Combining this finding with the dual effect of JV-parent similarity that was discussed before gives a good idea of the degree of diversification for which a joint venture is a suitable cooperation strategy.

5.1.3 Influence of organizational fit on JV survival

Internal organizational fit

Both the distribution of ownership and the scope of the joint venture are significant predictors of the odds of termination of joint ventures.

Joint ventures with ownership distributions between 80/20 and 50.1/49.9 do not differ in their odds of termination as compared to JVs with equal ownership distribution. This is in line with the trade-off between agility and harmony of decision-making. Neither option appears to be preferred. Potentially, the purpose of the joint venture plays a role in determining the most effective configuration of ownership. Joint ventures in volatile environments benefit from speed of action, to the point where harmony has a subordinate role. It is likely

that the minority stakeholder recognizes the importance of this agility, reducing the amount of conflict between the parents. In stable environments, the pressure on decision-making is lower, resulting in a preference for equality of influence.

The tenfold increase in odds of termination for joint ventures with ownership distributions spread wider than 80/20 is very interesting. The expectation on the basis of extant literature was that minority stakeholders in these cases would be acceptant of their role and thus harmony would not pose as large an issue as is the case with more equal distributions. It appears that joint ventures are most suited as a means of accessing resources that are embedded in other firms (Hennart & Reddy, The choice between mergers/acquisitions and joitn ventures: The case of Japanese investors in the United States, 1997), and a significant difference in ownership stakes may cause opportunism from the minority stakeholder, as its partner will need to expose more of its strategic assets in return for the ability to determine the joint venture's direction. Additionally, the minority stakeholder has little incentive to put in its best effort, as it only receives less than 20% of the profits generated by the joint venture (Park & Russo, 1996; Blodgett, 1992). This is not offset by the effectiveness of decision-making, which contradicts the argument made by Killing (1983). To conclude, a large difference in ownership stakes signals that the primary purposes of a joint venture, which are cooperation and sharing of strategic resources, are not the goals of the parent firms.

The scope of the joint venture is an indicator of the complexity of the cooperation between the parent firms. As was confirmed by the results, a broader scope signals higher complexity and will result in less effective governance, which in turn leads to worse performance of the venture. Kamminga and Van der Meer-Kooistra (2007) investigated the characteristics of joint ventures with different levels of control complexity, and found that factors that complicate joint venture success in case of high complexity include uncertainty, low measurability of outputs, limited room for parental differences, information asymmetry and high reliance on trust. Combining this knowledge with the overall statistics of joint venture failure, it is clear that strong caution is advised when considering starting a complex joint venture.

External organizational fit

The first component of external organizational fit that was analyzed consisted of parent-parent similarity and the distribution of ownership, both of which have been covered earlier and found to have a significant effect on joint venture survival. The extent to which the goals of the parents are aligned were not analyzed as a reliable measure could not be established from the available data, as was observed by the high correlations with other variables and insignificance of the measure as used in preparatory regression tests. Investigation of goal alignment will require more in-depth analysis of the parents of joint ventures, as it is unlikely that reliable information about this factor can be reliably extracted from secondary data sources. The third factor that was investigated was the match between the relationship among parents and the relationship between parents on the one hand and the JV on the other. No significant influence was detected. Thus, no support was found for increased effectiveness of alignment between the three parties in terms on the exploitation-exploration scale. A possible cause for this may be a too specific definition of a match between the joint venture and both its parents, requiring that all parties have the same number of SIC-digits in common. However, considering the size of the sample, it cannot be ruled out that the overall relatedness simply does not directly affect joint venture termination.

As a whole, organizational fit is confirmed to have a significant influence on joint venture survival. With the results of the regression, directions can be given for a successful configuration for joint venturing, following Miller's (1996) taxonomy methodology.

5.2 A digression: Effect of parent diversification scope on JV survival

The control variable "Parent diversification scope" turned out to be a significant predictor of joint venture termination. As the breadth of diversification increases, the chance for joint ventures to be terminated increased as well. Although it was not a factor that was sought after in the research questions, it is noteworthy enough to include in the discussion. The

results can be explained through the Agency Theory or Diversification viewpoints.

First of all, agency theory's argument that a large number of different businesses may be a sign of empire building and that this is not in the interest of shareholders (Shleifer & Vishny, 1989) is supported by the results.

Furthermore, diversification beyond a certain point leads to inefficiencies which outweigh the advantages of economies of scope, as was predicted by diversification theory (e.g. Barkema & Schijven, 2008, Montgomery, 1994). Although some scholars argue that diversification effectiveness increases as the organization increases its diversification experience (e.g. Levitt & March, 1988), the extension of activities beyond the scope of firms' key strategic resources appears to lead to decimation of this advantage. Additionally, joint ventures by nature require delicate attention over a long period of time (Blodgett, 1992; Parkhe, 1993). Notwithstanding that the usefulness of extensive diversification is often debated (e.g. Palepu, 1985), the advice emerges to consider other cooperation mechanisms than a joint venture in case of extensive diversification, in order to reduce the complexity of governance.

5.3 Conclusions

Based on the findings of this research, a general advice for successful configurations of parents and joint ventures in terms of relatedness and organizational fit has emerged. A joint venture is most likely to be successful if its parents are active in the same two-digit SIC industry class. The scope of the joint venture should be limited in order to reduce complexity. Ownership should not be dispersed wider than 80%/20%. Finally, chances of success are highest when the parents are limitedly diversified at initiation of the venture. No unequivocal advice can be given in terms of the degree of similarity of the joint venture to its parents.

5.4 Limitations and recommendations for further research

As the results indicate, no significant relation exists between the similarity between a venture and its parents and its termination rate. This may be explained through the various purposes that a joint venture may have. A joint venture created for international market entry might have different drivers of success than a venture designed to investigate a radically new technology, for example. It would be interesting to see a distinction made in future research, to investigate whether the link between relatedness and fit on one hand and termination rate on the other is different for joint ventures with different purposes. A more in-depth study with a smaller sample size would be suitable to ensure that the purpose of the joint venture can be linked to the degree of similarity.

A second point that deserves further investigation is the extent of external organizational fit. The alignment of intentions of parent firms is difficult to measure in a quantitative manner, and common data sources are unlikely to have comprehensive data on these goals, as they may be confidential or implicit. A case study could help investigate these intentions, and link them to the performance of joint ventures. However, the challenge to determine the definition of success of a joint venture remains.

Although termination is deemed an indiscriminate and accurate measure of joint venture failure (Park & Russo, 1996), it would be useful to investigate other methods to determine the success of a joint venture. Current methods rely mostly on financial data, which is unreliable when the purpose of the joint venture is acquisition of knowledge rather than financial gains. The investigation of termination rates of joint ventures as a result of underlying characteristics depends on large sample sizes and long-term analyses, which complicate investigations of recent data. If a method were determined to reliably assess the extent to which a joint venture meets the expectations of its parents which does not require a delay of 7 or more years, it would improve the potential of research on the dynamics that lead to joint venture success in the current market, and hopefully improve the rate of success of this theoretically promising but practically still very challenging cooperation mode.

6. Bibliography

Amihud, Y., & Lev, B. (1981). Risk Reduction as a Managerial Motive for Conglomerate Mergers. *Bell Journal of Economics, 12*(2), 605-617.

Ansoff, H., & Brandenburg, R. (1971). A Language for Organization Design. *Management Science, 17*(12), B705-B716.

Argote, L., & Ingram, P. (2000). Knowledge Transfer: A Basis for Competitive Advantage in Firms. *Organizational Behavior and Human Decision Processes, 82*(1), 150-169.

Auster, E. (1992). The relationship of industry evolution to patterns of technological linkages, joint ventures, and direct investment between U.S. and Japan. *Management Science, 38*(6), 778-792.

Barkema, H., & Schijven, M. (2008). Toward unlocking the full potential of acquisitions: The role of organizational restructuring. *Academy of Management Journal, 51*(4), 696-722.

Barkema, H., Bell, J., & Pennings, J. (1996). Foreign Entry, Cultural Barriers, and Learning. *Strategic Management Journal, 17*(2), 151-166.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.

Berle, A., & Means, G. (1932). *The Modern Corporation and Private Property.* New York: Macmillan.

Bernheim, B., & Whinston, M. (1990). Multimarket Contact and Collusive Behavior. *RAND Journal of Economics, 21*(1), 1-26.

Blodgett, L. (1992). Factors in the Instability of International Joint Ventures: An Event History Analysis. *Strategic Management Journal, 13*, 475-481.

Cartwright, S., & McCarthy, S. (2005). Developing a Framework for Cultural Due Diligence in Mergers and Acquisitions. In Stahl, & Mendenhall, *Mergers and Acquisitions: Managing Culture and Human Resources* (pp. 253-273). Stanford: Stanford University Press.

Chandler, A. (1962). *Strategy and Structure: Chapters in the History of the American Enterprise.* Cambridge: Massachusetts Institute of Technology.

Chung, C., & Beamish, P. (2010). The Trap of Continual Ownership Change in International Equity Joint Ventures. *Organization Science, 21*(5), 995-1015.

Cohen, W., & Levinthal, D. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly, 35*(1), 128-152.

Das, T., & Teng, B. (2000). A Resource-Based Theory of Strategic Alliances. *Journal of Management, 26*(1), 31-61.

Deitz, G., Tokman, M., Richey, R., & Morgan, R. (2010). Joint venture stability and cooperation: Direct, indirect and contingent effects of resource complementarity and trust. *Industrial Marketing Management, 39*(5), 862-873.

Douma, M., Bilderbeek, J., Idenburg, P., & Looise, J. (2000). Strategic Alliances: Managing the Dynamics of Fit. *Long Range Planning, 33*(4), 579-598.

Drazin, R., & Van de Ven, A. (1985). Alternative Forms of Fit in Contingency Theory. *Administrative Science Quarterly, 30*(4), 514-539.

Edwards, C. (1955). Conglomerate Bigness as a Source of Power. In N. B. Research, *Business Concentration and Price Policy* (pp. 331-360). Princeton: Princeton University Press.

Eisenhardt, K., & Schoonhoven, C. (1996). Resource-based view of strategic alliance formation: Strategic and social effects of entrepreneurial firms. *Organization Science, 7*(2), 136-150.

Faulhaber, G. (1975). Cross-subsidization: pricing in public enterprises. *The American Economic Review, 65*(5), 966-977.

Fichman, M., & Levinthal, D. (1991). Honeymoons and the liability of adolescence: a new perspective on duration dependence in social and organizational relationships. *Academy of Management Review, 16*(2), 442-468.

Geringer, J. (1991). Strategic determinants of partner selection criteria in international joint ventures. *Journal of International Business Studies, 22*(1), 41-62.

Geringer, J., & Hebert, L. (1989). Control and performance of international joint ventures. *Journal of International Business Studies, 20*(2), 235-254.

Gibson, C., & Birkinshaw, J. (2004). The antecedents, consequences and mediating role of organizational ambidexterity. *Academy of Management Journal, 47*(2), 209-226.

Gresov, C. (1989). Exploring fit and misfit with multiple contingencies. *Administrative Science Quarterly, 34*(3), 431-453.

Gruber, M., Heinemann, F., Brettel, M., & Hungeling, S. (2010). Configurations of resources and capabilities and their performance implications: an exploratory study on technology ventures. *Strategic Management Journal, 31*(12), 1337-1356.

Haas, J., Hall, R., & Johnson, N. (1966). Towards an empirically derived taxonomy of organizations. *Studies on behavior in organization*, 157-180.

Hamel, G., Doz, Y., & Prahalad, C. (1989). Collaborate with your Competitors - and win. *Harvard Business Review, 67*(1), 133-139.

Harding, D., & Rouse, T. (2007). Human due diligence. *Harvard Business Review, 85*(4), 124-131.

Henderson, R., & Clark, K. (1990). Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms. *Administrative Science Quarterly, 35*(1), 9-30.

Hennart, J. (1988). A transaction costs theory of equity joint ventures. *Strategic Management Journal, 9*(4), 361-374.

Hennart, J., & Reddy, S. (1997). The choice between mergers/acquisitions and joitn ventures: The case of Japanese investors in the United States. *Strategic Management Journal, 18*(1), 1-12.

Hennart, J., Roehl, T., & Zietlow, D. (1999). 'Trojan horse' or 'Workhorse'? the evolution of U.S.–Japanese joint ventures in the United States. *Strategic Management Journal, 20*(1), 15-29.

Hitt, M., Dacin, M., Levitas, E., Arregle, J., & Borza, A. (2000). Partner Selection in Emerging and Developed Market Contexts: Resource-Based and Organizational Learning Perspectives. *Academy of Management Journal, 43*(3), 449-467.

Hitt, M., Keats, B., & DeMarie, S. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *Academy of Management Journal, 12*(4), 22-42.

Hosmer, D., & Lemeshow, S. (2004). *Applied logistic regression.* Wiley-Interscience.

Huber, G. (1991). Organizational Learning: The Contributing Processes and the Literatures. *Organization Science, 2*(1), 88-115.

Ilinitch, A., D'Aveni, R., & Lewin, A. (1996). New Organizational Forms and Strategies for Managing in Hypercompetitive Environments. *Organization Science, 7*(3), 211-220.

Inkpen, A. (1996). Creating Knowledge through Collaboration. *California Management Review, 39*(1), 123-140.

Inkpen, A. (2000). Learning through Joint Ventures: A Framework of Knowledge Acquisition. *Journal of Management Studies, 37*(7), 1019-1044.

Inkpen, A., & Beamish, P. (1997). Knowledge, Bargaining Power, and the Instability of International Joint Ventures. *Academy of Management Review, 22*(1), 177-202.

Jensen, M. (1986). Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review, 76*(2), 323-329.

Jiang, R., Tao, Q., & Santoro, M. (2010). Alliance portfolio diversity and firm performance. *Strategic Management Journal, 31*(10), 1136-1144.

Kamminga, P., & Van der Meer-Kooistra, J. (2007). Management control patterns in joint venture relationships: A model and an exploratory study. *Accounting, Organizations and Society, 32*(1), 131-154.

Killing, P. (1983). *Strategies for Joint Venture Success.* New York: Praeger.

Kogut, B. (1988). Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal, 9*(4), 319-332.

Lane, P., Salk, J., & Lyles, M. (2001). Absorptive capacity, learning, and performance in international joint ventures. *Strategic Management Journal, 22*(12), 1139-1161.

Lawrence, & Lorsch. (1967). *Organization and environment: Managing differentiation and integration.* Boston, MA: Graduate School of Business Administration, Harvard University.

Lawrence, P., Lorsch, J., & Garrison, J. (1967). *Organization and environment: managing differentiation and integration.* Boston: Harvard University.

Levinthal, D., & March, J. (1993). The Myopia of Learning. *Strategic Management Journal, 14*(S2), 95-112.

Levitt, B., & March, J. (1988). Organizational Learning. *Annual Review of Sociology, 14*, 319-340.

Lin, Z., Yang, H., & Arya, B. (2009). Alliance partners and firm performance: resource complementarity and status association. *Strategic Management Journal, 30*(9), 921-940.

Luo, Y. (2007). A coopetition perspective of global competition. *Journal of World Business, 42*(2), 129-144.

Lyles, M. (1991). A study of the interaction of firm business area relatedness and the propensity to joint venture. *Journal of Global Marketing, 5*(1), 91-106.

Marsh, J. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science, 2*(1), 71-87.

Meyer, A., Tsui, A., & Hinings, C. (1993). Configural Approaches to Organizational Analysis. *Academy of Management Journal, 36*(6), 1175-1195.

Miller, D. (1993). The architecture of simplicity. *Academy of Management Review, 18*(1), 116-138.

Miller, D. (1996). Configurations Revisited. *Strategic Management Journal, 17*(7), 505-512.

Miller, D., Friesen, P., & Mintzberg, H. (1984). *Organizations: A Quantum View.* Englewood Cliffs, NJ, NJ: Prentice-Hall.

Mintzberg, H. (1980). Structure in 5's: A Synthesis of the Research on Organization Design. *Management Science, 26*(3), 322-341.

Montgomery, C. (1994). Corporate Diversification. *Journal of Economic Perspectives, 8*(3), 163-178.

Nieuwenhuis, G. (2009). *Statistical Methods for Business and Economics.* Berkshire: McGraw-Hill.

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge. *Organization Science, 5*(1), 14-37.

Palepu, K. (1985). Diversification strategy, profit performance and the entropy measure. *Strategic Management Journal, 6*(3), 239-255.

Panzar, J., & Willig, R. (1981). Economies of Scope. *American Economic Review, 71*(2), 268-272.

Park, B., Whitelock, J., & Giroud, A. (2009). Acquisition of marketing knowledge in small and medium-sized IJVs: The role of compatibility between parents. *Management Decision, 47*(8), 1340-1356.

Park, S., & Russo, M. (1996). When Competition Eclipses Cooperation: An Event History Analysis of Joint Venture Failure. *Management Science, 42*(6), 875-890.

Park, S., & Ungson, G. (1997). The effect of national culture, organizational complementarity, and economic motivation on joint venture dissolution. *Academy of Management Journal, 40*(2), 279-307.

Parkhe, A. (1993). "Messy" research, methodological predispositions, and theory development in international joint ventures. *Academy of Management Review, 18*(2), 227-268.

Pennings, J., Barkema, H., & Douma, S. (1994). Organizational Learning and Diversification. *Academy of Management Journal*, 608-640.

Penrose, E. (1959). *The Theory of the Growth of the Firm.* New York: Oxford University Press.

Powell, W., Koput, K., & Smith-Doerr, L. (1996). Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology. *Administrative Science Quarterly, 41*(1), 116-145.

Schildt, H., Maula, M., & Keil, T. (2005). Explorative and Exploitative Learning from External Corporate Ventures. *Entrepreneurship Theory and Practice, 29*(4), 493-515.

Shleifer, A., & Vishny, R. (1989). Management Entrenchment: The Case of Manager-Specific Investments. *Journal of Financial Economics, 25*(1), 123-139.

Siggelkow, N. (2002). Evolution toward Fit. *Administrative Science Quarterly, 47*(1), 125-159.

Stuart, T., Hoang, H., & Hybels, R. (1999). Interorganizational Endorsements and the Performance of Entrepreneurial Ventures. *Administrative Science Quarterly, 44*(2), 315-349.

Sykes, H. (1986). The anatomy of a corporate venturing program: Factors influencing success. *Journal of Business Venturing, 1*(3), 275-293.

Tabachnick, B., & Fidell, L. (1996). *Using multivariate statistics* (6th ed.). London: Pearson Education.

Tanriverdi, H., & Venkatraman, N. (2005). Knowledge Relatedness and the Performance of Multibusiness Firms. *Strategic Management Journal, 26*(2), 97-119.

Taylor, R. (1990). Interpretation of the Correlation Coefficient: A Basic Review. *Journal of Diagnostic Medical Sonography, 6*(1), 35-39.

Teece, D. (1980). Economies of Scope and the Scope of the Enterprise. *Journal of Economic Behavior and Organization, 1*(3), 223-247.

Tsang, E. (2000). Transaction cost and resource-based explanations of joint ventures: A comparison and synthesis. *Organiszation Studies, 21*(1), 215-242.

Ulrich, D., & McKelvey, B. (1990). General organizational classification: An empirical test using the United States and Japanese electronics industries. *Organization Science, 1*(1), 99-118.

Varadarajan, V., & Ramanujam, P. (1989). Research on Corporate Diversification: A Synthesis. *Strategic Management Journal, 10*(6), 523-551.

Venkatraman, N., & Camillus, J. (1984). Exploring the Concept of "Fit" in Strategic Management. *Academy of Management Review, 9*(3), 513-525.