Effectiveness of Dyadic and Multi-Party Joint Ventures

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Abstract

Using data from 80 joint-venture (JV) experiences, this article compares the influence on JV effectiveness of two alternative ways of management: relational investment and formal control. Our results show that the adoption of one or another is contingent upon the number of partners: while relational investment significantly influences the effectiveness of dyadic JVs, formal control is pivotal in the case of multi-party JVs.

Keywords: dyadic and multi-party joint ventures, joint-venture effectiveness, formal control, relational investments

Introduction

The number of partners participating in an alliance represents a dimension of complexity (Killing 1988) that may affect its effectiveness, that is, the extent to which a focal partner's goals for the alliance are fulfilled. While this is well acknowledged, the differences between dyadic and multi-party alliances have been largely ignored. Thus, most studies have focused on dyadic alliances, and they are content to suggest that the same argument that applies here could be easily extended to multi-party alliances. The effects brought about by the number of partners within an alliance have been examined only in a few articles, most of them having to do with the literature on alliance governance. In this sense, Gulati (1995a), García-Canal (1996) and Oxley (1997) argue that multi-party alliances are more difficult to govern than dyadic alliances, and, for this reason, joint ventures (JVs) tend to be adopted more frequently in the multi-party case. Among those dealing with JV duration and performance, only Park and Russo (1996) have been concerned with the analysis of the effect linked to the number of partners. In particular, they predicted a higher rate of failure in multi-party JVs, indicating that the management of multi-party JVs may be more complex than that of dyadic ones. Nonetheless, the causes and consequences of this complexity remain unexplored.

Precisely, this is the issue addressed in this article. We argue that the number of partners conditions the appropriate management approach adopted in JVs. Following Madhok (1995), two different ways of managing JVs have been considered: formal control and relationship development. The former revolves around the degree of influence and monitoring needed to manage the JV in

order to ensure the accomplishment of the expected goals. In turn, the latter, relationship development, is aimed at improving relational quality and trust levels in order to favour the fulfilment of the potential synergies of the alliance. Looking at the literature on alliance management, one soon realizes that relationship development is generally regarded as more effective than formal control (Beamish 1988; Dyer and Singh 1998). However, we maintain that relationship development becomes very difficult to implement in the multi-party case, because there are fewer incentives in this case for making the relation-specific investments needed for trust building. And, it is essentially this characteristic that makes formal control the most appropriate way of managing multi-party JVs. In dyadic JVs, on the contrary, the greater possibilities for developing the relationship favour investment in relational assets, which at the same time helps to structure the JV as a self-enforcing agreement. In this way, trust building encapsulates an adequate management approach for dyadic JVs. The existence of these two alternative paths to JV effectiveness in dyadic and multi-party JVs has been tested using data from a sample of 80 JV experiences of Spanish firms.

The article is organized as follows. The first section outlines the two main ways of managing JVs effectively. Then there is an analysis of the applicability of these alternative approaches to achieve JV effectiveness in the case of dyadic and multi-party JVs. Next, our hypotheses are empirically tested using data from a survey on the effectiveness of JVs. Given the categorical and hierarchical nature of the dependent variable, several ordered probit models were estimated to test the hypotheses. After a discussion of the results, we present the main conclusions obtained.

Paths to JV Effectiveness

Two or more companies engage in a JV (a legally independent company jointly owned by them) when they expect the potential value derived from it to be greater than the value derived from any alternative organizational arrangement. But rather than on the potential value, we focus on the realized value, understood as effectiveness. Typically, the realized value will be lower than the potential value (Madhok and Tallman 1998). This point is confirmed by the dramatic failure rates found in the literature on JV performance (see Gulati (1998) and Park and Ungson (2001) for a review). These failure rates could be a consequence of conflicting interests, of operational asymmetries, of poor coordination of the activities that would make it difficult for the firm to accomplish the full potential of the JV (Madhok 1995), or simply a consequence of environmental changes. As each partner is a sovereign organization and has its own routines and procedures, the activities of the venture involve more risk than when they are performed by a single organization (Das and Teng 2001). The decision to focus our analysis on effectiveness springs from the fact that the high failure rates that are reported in the JV performance literature are nearly always caused by the inappropriate management of the alliance (Madhok and Tallman 1998).

The literature on JV management has gone to great lengths to identify not only which should be the best approach to govern JVs, but also to handle the risks they involve. The vast number of works available can be grouped into two blocks (Madhok 1995). The first comprises the research aimed at establishing the optimal control structure for the new venture. Conversely, the second research line has devoted its efforts to identifying the ideal way to develop a relationship in order to build trust and relational quality. The first references found in the former group belong to the literature on multi-national firms, where JVs are analysed as an alternative to the creation of wholly owned subsidiaries in the process of expansion of multinational firms (Friedmann and Kalmanoff 1961; Tomlinson 1970; Stopford and Wells 1972). The investigation here has evolved in two different directions: one which analyses the ownership structures of foreign subsidiaries within a transaction-cost framework (Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991) and another which follows a socio-political approach (Fagre and Wells 1982; Lecraw 1984; Kobrin 1987). Generally speaking, all these works maintain that two opposite forces intervene in the decision that underlies the creation of a JV: the need to obtain resources from other partners (which leads to cooperation) and the desire to protect the assets which are the base of their distinctive competencies (which leads to expansion through wholly owned subsidiaries). Therefore, in these works, JVs are presented as a second-best option in the process of a company's internationalization; the key factor in getting the resources needed (local knowledge and political support) is to gain control rights on the joint venture. Gaining these rights allows the firm not only effectively to control local resources, but also to protect its own capabilities.

The relationship-building approach to the management of JVs has progressed in parallel with the research on alliance evolution. Its origin can be traced back to the first studies that placed emphasis on the influence of partners' previous cooperative relationships on alliance effectiveness (Levinthal and Fichman 1988; Kogut 1989; Gulati 1995b). This approach strongly contends that alliance effectiveness and evolution are conditioned by the way in which partners handle their relationship (Zajac and Olsen 1993; Ring and Van de Ven 1994). This point of view acknowledges that initial commitments are important (Gulati et al. 1994). However, it gives even more significance to the adaptability needed to identify and take advantage of new opportunities — to adaptability that will allow new cooperative projects to be carried out or the relationship to adapt to external changes, or both (Doz 1996; Ariño and De la Torre 1998). Central to this research line is the concept of relational investment. Madhok and Tallman (1998) define this as any kind of effort to comprehend the partner's goals and to help joint interaction. Relational investments contribute not only to facilitating execution of the alliance, but also its management and the development of future cooperative projects through trust formation (Ring and Van de Ven 1994; Doz 1996; Nooteboom et al. 1997; Ariño and De la Torre 1998; Madhok and Tallman 1998; Tsang 2000). Following Das and Teng (1998, 2001), we take 'trust' to mean the positive attitude that one partner exhibits toward the goodwill and reliability of another partner in situations of

risk. Firms that develop trust between themselves accumulate relational quality (Ariño and De la Torre 1998) or relational capital (Kale et al. 2000). Kale and his colleagues (2000) found that the building of relational capital might help firms to get the potential benefits from an alliance, while at the same time reducing conflicts of interest. In addition, this trust enhances the development of new cooperative projects. Because of all this, trust qualifies not only as an output of cooperation, but also as an input (Buckley and Casson 1988).

Now we are in a better position to understand why relational investments can smooth the execution of the alliance, and, simultaneously, can be thought of as embodying a mechanism of alliance management, which contributes to the structuring of the alliance as a self-enforcing agreement (Telser 1980; Klein and Leffler 1981). In this type of agreement, it is the loss associated with the end of the relationship that prevents partners from behaving opportunistically. Relational investments can lead to self-enforcing agreements for two main reasons. On the one hand, these investments are sunk costs that have value in so far as the relationship is alive. On the other hand, they have a positive influence on the realized value of the relationship. This situation creates incentives for the partners to remain in the JV and behave cooperatively in order to recover their relational investments and get the full benefits of the JV as well as of new cooperative projects that may result from the evolution of the relationship. JVs are not seen as a second-best strategy from this perspective.

As a direct consequence, formal control and trust and relationship building stand as two alternative approaches to JV management. Recently, the relationship between trust and control has been the object of a great deal of attention. Although these two elements interrelate in several ways (Bachmann 2001), the exercise of formal control may undermine trust levels and relational quality (Das and Teng 1998, 2001). Hence, firms entering into JVs can choose to manage the alliance by focusing either on formal control through ownership or on trust and relational quality.

Number of Partners and JV Effectiveness

In this section, we examine how the number of partners influences the choice between trust and formal control as alternative ways to manage JVs. However, as a prior step, we consider it advisable to analyse the influence that the number of partners can have on effectiveness. Managing a multi-party JV is more complex than managing a dyadic one due to two main reasons. First, there are fewer incentives to behave cooperatively. In JVs, the relationship maintained by partners can be assimilated to one of team production (Alchian and Demsetz 1972), as the incentives for free-riding behaviour are greater when partners are more numerous (Stigler 1974; Grandori 1987; Salas 1989). Second, the number of dyadic relationships increases geometrically as the number of partners becomes bigger. As a result, an increase in the number of partners is likely to turn a relationship into a conflicting one, or else to provoke the emergence of a dysfunctional coalition involving some of the partners

(Park and Russo 1996). In addition, a greater number of partners also tends to introduce additional coordination and communication costs, as there are more interests and greater cultural diversity to be harmonized (Parkhe 1993b; García-Canal 1996). The major quantitative and qualitative transformation takes place when moving from two to three partners, as the third partner may pave the way for the appearance of risky pair coalitions between the partners. Moreover, communication among them becomes more difficult, as the number of communication channels rises from one to three (Pfeffer and Salancik 1978). In view of this, we pose the following working hypothesis:

H1: The likelihood that a partner fulfils its goals is higher in dyadic than in multi-party JVs.

Beside this direct impact, the number of partners can also shape JV effectiveness by making trust and formal control mechanisms more or less operative. Thus, in the next section, we argue that relation-based management is more applicable to dyadic JVs, while formal control is a more adequate way to manage multi-party JVs.

Effectiveness of Dyadic JVs: Self-Enforcing Agreements Capitalizing on Relational Investments

Relationship building in alliance development is a process that usually comprises several stages of negotiation, commitment and execution that are sequentially repeated (Ring and Van de Ven 1994). A minimum amount of mutual trust and relational quality between partners is a necessary condition for this initial stage of alliance formation to be successful (Killing 1988). If partners do not have a background of previous cooperative relationships, this trust can be generated in the negotiation stage through relational investments and unilateral commitments (Gulati et al. 1994; Madhok and Tallman 1998). Building on the work carried out by Ring and Van de Ven (1994) and Doz (1996), Ariño and De la Torre (1998) propose an evolutionary model of inter-firm collaboration that helps to explain the genesis of relational quality. This evolutionary model shows that the process by which relational quality is built up takes an important amount of relational investment in terms of managerial time, energy, and effort. As sense-making processes take place throughout the negotiation, commitment, and execution stages (Ring and Van de Ven 1994), the partners get to understand each other's goals. If not enough effort is put into the process, sooner or later incompatibilities will surface, just as the evidence provided by Ariño and De la Torre (1998) shows. Each company will behave in ways driven by its own interests, which typically will only overlap with those of the partner (Ariño 1995). As a consequence, relational quality will decline and the fulfilment of the partners' goals for the venture will suffer.

   Alliances are continuously re-evaluated in terms of efficiency and equity. For this reason, the cycle of negotiation, commitment and execution is reinitialized every time partners feel that the initial environment surrounding

the alliance is going to suffer any alteration, or when the partners obtain feedback from goal fulfilment as the activities developed in the alliance are executed. Alliance development is thus dependent on how partners react to these external changes and internal feedback (Ariño and De la Torre 1998). If they show adaptability in order to modify the relationship to the new circumstances and the projects are carried out successfully, alliances enter into a virtuous circle, thus increasing their scope. This is due to the fact that firms can take advantage of the increasing levels of trust between companies and the accumulated learning concerning how to work with partners as well as how to define good cooperative projects with them. If, on the contrary, partners tend to react unilaterally to the new circumstances or the projects are not being successfully carried out, or both, alliances enter into a vicious circle, leading to failure and alliance dissolution.

The logic surrounding the increase in alliance scope (the carrying out of new projects) lies in the fact that as firms develop a successful cooperative project, new opportunities for joint profits arise. As partners widen the scope of their cooperation, they can profit from rents that can only be obtained by working jointly. These rents are those that Dyer and Singh (1998) have called 'relational rents' and that Madhok and Tallman (1998) have labelled 'collaboration specific quasi-rents'. (Dyer and Singh (1998: 662) define relational rents as 'profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners'. Madhok and Tallman (1998: 329) state that collaboration-specific quasi-rents 'arise from the combination of... resources of both firms into a synergistic bundle that enables a level of accomplishment which the partners are unable to attain in the absence of the collaboration'.) Moreover, when previous cooperative relationships are still in force, their existence offers an additional basis for reciprocity in the relationship since more channels exist for penalizing breaches of contracted obligations (Kogut 1989; Park and Russo 1996).

Thus, relational investments made sequentially by the partners can act as mutual hostage positions (Williamson 1985), reducing both the incentives to cheat and the need for monitoring efforts, as there is a penalty for cheating in the form of losing future relational rents. In fact, this is what makes JVs self-enforcing agreements. However, the same situation is very difficult to achieve in multi-party JVs: on the one hand, there are less incentives to create relational investments and, on the other hand, these investments are less effective for the management of the relationship. Three important differences make the relationship between two and more than two partners dissimilar, and condition the decision to carry out relational investments. First, other things being equal, with two partners the initial investment in the development of the relationship is the lowest: each new partner requires an additional effort on the part of the other companies in order to learn their organizational routines and goals. Hence, each new partner entry means an increase in the relational investments required for the normal operation of the JV. Second, the shadow of the future (Axelrod 1984; Parkhe 1993b) is larger in alliances of only two partners: it is easier to define new joint-action projects that

are equally attractive to all the partners, as the number of interests to be harmonized is lower. Lastly, reciprocity is easier to implement in alliances between only two partners (Parkhe 1993b), because when there is more than one other firm it is very difficult to punish the non-cooperative behaviour of one partner without worsening the situation of the others.

For these reasons, in the dyadic case, it is relatively easy to structure JVs as self-enforcing agreements in which the partners develop and benefit from previous relational investments. In fact, when there are only two partners, it is not so troublesome for them to accumulate reciprocal knowledge which may be profited from and applied to new cooperative projects that might be generated in the future. That is to say, other things being equal, relational investments are lower, and the time horizon in which they are to be profited from is greater. Furthermore, the reciprocity mechanism reinforces the incentives to maintain cooperative behaviour. It allows relational investments to be marked out with the other partner, as it is much easier to identify whether the other partner is making an effort to invest in the relationship, as well as to decide how to act in consequence. This leads us to our second working hypothesis:

H2: The influence of relational investments on JV effectiveness is stronger in dyadic JVs than in multi-party ones.

Effectiveness of Multi-Party JVs: Avoiding Free Riding through Formal Control

The obstacles that multi-party JVs pose for the development of future projects between partners and the high initial relational investments they require, at least as compared to cooperative projects between two partners, make it difficult for this type of JV to be structured as a self-enforcing agreement. As a result, the effectiveness of a multi-party JV depends on its being structured with mechanisms that overcome the natural incentive for maintaining free-rider behaviour while they guarantee or facilitate the development of sense-making processes to make the relationship and joint action of the partners congruent. For these reasons, as relational mechanisms are not as suitable for the multi-party case as for the dyadic one, we may expect formal control to play a key role in multi-party JVs.

In fact, formal control was the solution proposed by Alchian and Demsetz (1972) to free-rider problems in teams. These authors advocated specialization in the supervising function by one of the members of the team, which, in the case of JVs, would imply that one of the partners should have a majority equity stake in the JV in order to control it. Initial articles analysing formal control in JVs focused only on the equity stake held by the partners (Tomlinson 1970; Stopford and Wells 1972). More recently, additional means of formal control have been proposed (Schaan 1988; Geringer and Hebert 1989; Yan and Gray 1994; Kumar and Seth 1998) to the point that it is now to be understood as a multidimensional concept (Geringer and Hebert 1989; Yan and Gray 1994). In particular, Yan and Gray's case studies (1994) hint at the possibility that

even when partners have the same equity stake, there can appear striking differences in real control. Among the mechanisms of formal control, the following could be highlighted: board of directors, incentive plans for JV managers, and the staffing of top management positions. Boards of directors are not only a means of formulating and approving JV's strategic plans, but also of monitoring JV's top executives (Leksell and Lindgren 1982; Kumar and Seth 1998). Thus, frequent board meetings allow partners to monitor closely the activities of the venture, as well as to solve problems that may arise. In turn, incentive plans associated with the performance of the JV can decidedly motivate managers to work harder for the success of the venture, but simultaneously can be aimed at coordinating each partner's interests and arbitrating in disputes among them (Killing 1983; Schaan 1988; Kumar and Seth 1998). Lastly, appointing employees in top management positions in the JV is a very effective way for a parent firm to ensure that in every decision its interests will be taken into account (Killing 1983; Doz and Hamel 1998; Kumar and Seth 1998).

All of these mechanisms may be used to influence (directly or indirectly) the behaviour of the JV and the partners in order to attain the expected goals and to make undesirable outcomes less likely (Das and Teng 1998, 2001). Previous research, however, has found that formal control does not always lead to JV effectiveness (see, for example, Beamish 1988; Geringer and Hebert 1989; Yan and Gray 1994; Saxton 1997). In fact, the exercise of formal control rights may give way to low commitment by those partners whose levels of control are weak (Provan and Skinner 1989; Park and Russo 1996). Formal control requires that people's behaviour should be unmistakably delineated, which usually provokes a negative effect on trust, as the associated restrictions may originate suspicion and mistrust (Das and Teng 1998), together with rigidities in the alliance. Authors such as Das and Teng (2000) have shown that it is necessary for partners in a strategic alliance to strike a balance between flexibility and rigidity: formal controls tend to increase rigidity, and that may have an additional negative impact on the JV. In parallel, restrictions on firm behaviour can limit the possibilities of developing the scope of the alliance, or of adapting to changing circumstances. Even though research on alliance evolution has highlighted the importance of adaptability to the development of the alliance (Doz 1996; Ariño and De la Torre 1998), this negative effect of formal control seems to be more marked in dyadic joint ventures. As we have discussed, dyadic JVs offer more opportunities to increase the alliance's scope, as well as to handle the relationship so as to smooth the management of the JV. However, in multi-party JVs, there is less room for the development of this type of relationship. For this reason, the negative impact that control has on trust is not so important in multi-party JVs, while the benefits associated with improving partner coordination are more valuable. This makes formal control an adequate mechanism to manage multi-party JVs. Thus, we put forward the next hypothesis:

H3: The influence of formal control mechanisms on JV effectiveness is stronger in multi-party JVs than in dyadic ones.

Research Method

Sample and Data Collection

In order to test our hypotheses, we carried out a survey of Spanish companies that had participated in JVs. The JVs were identified through press clippings published in the daily newspaper *Expansión* (the leading financial newspaper in Spain) between 1986 and 1992. We chose the end of 1992 as the closing point in order to ensure that a sufficient amount of time had gone by between the creation of the JV and the moment the study was undertaken. Moreover, we only considered press clippings related to JVs with at least one Spanish member. In this way, we identified 438 Spanish companies that had participated in JVs, with a total of 656 participations.

Spanish firms provide an interesting setting for this study due to the pressures for alliance formation they had experienced in previous decades. After the processes of economic opening up and integration that operated in Spain during the 1970s and 1980s, Spanish companies have been forced to carry out a substantial number of JVs and strategic alliances, in order to gain access to new technologies and markets. Hence, by focusing on JVs created by Spanish companies, we have been able to obtain sufficient empirical evidence of the new types of JVs that have arisen worldwide since the end of the 1980s.

A survey was mailed to the identified companies in order to obtain information concerning the characteristics of their participation in JVs and the circumstances that had surrounded it. Each questionnaire referred to the participation in a specific JV, and we sent a questionnaire for each JV identified. As some companies had formed multiple JVs, a maximum of three questionnaires was sent per company so as to encourage a reply. In the selection of JV experiences, priority was given to criteria such as the magnitude of the collaboration project and its diversity with respect to variables such as the number and nationality of the partners. The questionnaires were addressed to the company's CEO, considered as the key informant. In the instructions given, we made it explicit that if the CEO was not fully aware of the JV's performance, the questionnaire should only be completed by a person who had had a direct involvement with the JV. A first mailing was sent out in January 1997, followed by a second one about two months later, along with a follow-up phone call. Reception of the questionnaires lasted until June of the same year, and the following months were spent screening and completing the information obtained by contacting the person who had filled in the questionnaire by phone or facsimile (when necessary).

A total of 609 questionnaires were sent to 431 Spanish companies. In all, 99 completed questionnaires were received, of which 80 were considered valid for this study. The rest were discarded for various reasons — basically, because they referred to forms of cooperation other than JVs, or because they contained insufficient information regarding our independent variables. The 80 valid questionnaires were completed by 69 different firms, 8 of them completing 2 and 1 completing 3 questionnaires. Table 1 presents the industry

Table 1.
Industry-Group
Distributions of
Firms in the Sample
and Responses

Industry Group	Sample (%)	Responses (%)
Agribusiness	14.6	13.8
Metals and minerals	1.0	
Energy and water	6.2	8.8
Construction	3.6	2.5
Textiles, leather, clothing and shoes	4.5	2.5
Paper and wood	3.8	1.3
Chemical	4.8	8.8
Computers and semiconductors	1.9	
Other electric and electronic products	6.2	7.5
Automobiles	1.2	1.3
Aerospace	0.7	3.8
Other machinery	3.1	5.0
Other manufacturing	6.0	8.8
Transportation	1.7	5.0
Communication and advertising	1.4	
Distribution	6.0	1.3
Finance	18.9	26.3
Services	12.2	2.5
Computer software	2.2	1.3

groups of the companies included in the sample and of those who responded to the questionnaire. In order to test the existence of a non-response bias with respect to JV effectiveness, we tested the existence of significant differences with regard to all of the variables in the study between the first and last groups of questionnaires returned, with no significant difference being observed.

So as to address possible common method bias effects, questionnaire items were arranged so that the dependent variable followed, rather than preceded, the independent variables (Salancik and Pfeffer 1977). Additionally, objective measures included in our instrument were validated against published data from the Dun & Bradstreet and other directories, press clippings, and corporate reports when available. Lastly, we performed Harman's single-factor test (Harman 1967): if a significant amount of common method bias exists in the data, then a factor analysis of all the variables in the model will generate a single factor that accounts for most of the variance. Unrotated factor analysis using the eigenvalue-greater-than-one criterion revealed four factors, and the first factor explained only 14.7 percent of the variance in the data. Thus, we concluded that the data were not subject to common method bias.

Dependent Variable and Method of Analysis

As mentioned earlier, this work focuses on effectiveness, understood as the degree to which the focal partner achieves the goals sought after by the JV. For this reason, we used a subjective measure of performance (for a comparison of subjective and objective measures of alliance performance, see Glaister and Buckley (1998)). Respondents were asked to indicate their degree of agreement with the following statement: 'The goals pursued with the creation of this JV have been utterly fulfilled.' An interval scale of 0–6

was used, where 0 corresponded to 'I totally disagree' and 6 to 'I totally agree'. This assessment allowed us to construct a categorical and hierarchical variable in which the scores given in each case reflected only a ranking, an increase of 1 to 2 in this variable not being considered equivalent to an increase from 2 to 3. This circumstance means it is inappropriate to use ordinary least square estimates. Conventional qualitative dependent variable methods (such as, for instance, a multinomial probit or logit) are not appropriate either, since they do not take into account the additional information contained in the ordering of the variable categories. Thus, given the nature of the dependent variable, a number of ordered probit models were estimated (Zavoina and McElvey 1975; Greene 1993) in order to test our hypotheses. The ordered probit model is constructed around a latent regression under the form:

$$Y^* = \alpha + \beta' X + \varepsilon$$

Here, Y^* is an unobservable index (which, in this case, measures JV effectiveness), α is the intercept, β the vector of coefficients associated with the independent variables (defined below), and ε the random disturbance term. Our observations were limited to the assignment of each company to one category on an interval scale (0–6), where each category corresponds to a specific range of Y^*, such that:

$$Y = 0 \text{ if } Y^* \leq 0; \ Y = 1 \text{ if } 0 < Y^* \leq \mu_1; \ Y = 2 \text{ if } \mu_1 < Y^* \leq \mu_2; \ldots Y = 6 \text{ if } \mu_5 < Y^*$$

Here, μ_i stands for the unknown parameters that determine the boundary values of each range. Once the distribution that follows ε has been assumed (in the case of the ordered probit, a normal distribution), the parameters under study are estimated by maximum likelihood techniques. The result of these estimations is a coefficient associated with each independent variable indicating its (positive or negative) effect in the likelihood that, in this case, JV effectiveness is achieved. The estimations were obtained using the LIMDEP 7.0 program. The log-likelihood ratio test was used to measure the joint significance of subsets of variables: first, those related to relational effects, and then those having to do with formal control mechanisms. The statistic used is $Z = -2(LL1 - LL2)$, where LL1 is the log of the likelihood function for the constrained model (that is, without the analysed variables) and LL2 is the log of the likelihood function for the unconstrained model (the model with all of the independent variables).

Independent Variables

Our estimations include two groups of independent variables: those about relational investments, and those relative to formal control mechanisms.

Relational Investment Variables

Relational investments are very difficult to determine, because their measurement would require us to be able to determine the amount of time the partners spent trying to become acquainted with each other's needs. For this reason, we decided to proxy the relational investments looking for factors that reduce

the need to carry out relational investments or that increase the shadow of the future, and with that the possibilities of taking advantage of these relational investments. The existence of previous cooperative relationships produces the former effect, and direct competition between partners the latter. Thus, the following variables have been used.

(1) *Previous alliances*. This consists of a dummy variable that equals one when the company under study had maintained previous cooperative relationships with any of its partners, and zero if it had not. JVs created by partners that have previously maintained satisfactory cooperative relationships start off with high levels of relational quality. Hence, the relational investments needed at the beginning of new cooperation projects are reduced. Each company has developed specific knowledge about its partner, along with routines for joint interaction (Levinthal and Fichman 1988; Gulati 1995b; Zaheer and Venkatraman 1995; Saxton 1997), which guarantee that the sense-making processes necessary for joint interaction have taken place. In addition, the parties have developed an internal reputation for living up to their agreements, which reduces risks in future cooperations (Buckley and Casson 1988; Parkhe 1993a).

(2) *Competitors*. This consists of a dummy variable that takes a value of one when any of the partners was assessed by the respondent as a direct competitor of the company under study, and zero if it was not. When partners are direct competitors, the initial levels of relational quality are logically not very favourable. Additionally, two factors reduce the incentives to invest in relational assets. First, if the partners are competitors, they have more incentives to take advantage of their counterpart by trying to gain access to their competencies, thus paying less attention to the common goals of the JV (Park and Russo 1996). Second, if the partners are competitors, it is difficult to define cooperative projects that are satisfactory for everyone. Competition gives rise to the presence of conflicting interests (Park and Ungson 1997; Doz et al. 2000), which reduces the shadow of the future and, once more, makes it difficult to structure the JV as a self-enforcing agreement.

Formal Control Variables

Based on the above-mentioned arguments, we have considered four types of formal controls: equity ownership, involvement in the board of directors, incentive plans for JV managers, and the staffing of top management positions. In order to proxy these formal control mechanisms, the following variables were introduced.

(1) *Dominant partner*. This consists of a dummy variable that is equal to one when one of the partners owns more than 50 percent of the shares of the JV, or a much greater share than the others, as assessed by the respondent, and zero otherwise. (We asked each respondent if one partner had a stake larger than 50 percent and, in case none had such a stake, to choose one of the following categories: symmetrically distributed equity, asymmetrically distributed equity with slight differences between partners, and

asymmetrically distributed equity with one partner having a stake much greater than the rest.) The presence of a dominant partner facilitates decision-making and, hence, the coordination of work, while symmetry in capital sharing may be the cause of arduous management (Killing 1983; Park and Ungson 1997).

(2) *CEO shareholder*. This consists of the percentage of the equity held by the CEO of the JV. With the help of this variable we have proxied the incentive alignment between the JV's CEO and the parent companies. Her participation in the company's residual value is one way to incentive her work efficiently, as she assumes part of the variability that is derived from her work (Barzel 1989).

(3) *Internal CEO*. This consists of a dummy variable valued at one when the CEO of the JV was a former employee of one of the parents, and zero when he was recruited from the labour market. Appointing a former employee to the JV's CEO position would allow the parent firm a great deal of control over day-to-day decisions in the JV.

(4) *Board meetings*. This variable measures the annual number of meetings held by the JV's board of directors. Frequent board meetings allow a more detailed supervision of activities, and a quick solution to and renegotiation of the problems encountered by the partners, as well as joint planning (Mohr and Spekman 1994; Leksell and Lingren 1982).

Control Variables

(1) *Experience*. This variable indicates the company's experience in the management of JVs; this experience was approximated using the number of JVs which the company under study had participated in since 1986. The decision to include this variable obeys statistic reasons, since a number of studies have already analysed its influence on the effectiveness of alliances. Westney (1988), for instance, considers that a company's (favourable) experience in the management of alliances enhances the exploitation and internal diffusion of the partners' knowledge in subsequent alliances, as well as the capacity to manage the relationship with these partners. Likewise, Barkema et al. (1997) conclude that a company's prior experience in domestic JVs lengthened the life of international JVs.

(2) *Cultural distance*. This variable identifies the distance that exists between the national cultures of the partners of the alliance. The Kogut and Singh (1988) index procedure has been followed, using the updated measurements of Hofstede (2001) as input. If there were more than two partners we followed the procedure used by Kim and Park (2000). Specifically, for each pair of partners, we calculated the Kogut and Singh (1988) index, and then we calculated the average between these indexes.

(3) *Size*. This variable measures, via turnover, the size of a company participating in the JV. It was included so as to analyse tentatively its effect, while correcting the potential biases that it might introduce.

Table 2. Descriptive Statistics and Correlation Matrix

	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Two partners (1 = yes/0 = no)	0.51	0.50	1												
2. Previous alliances (1 = yes/0 = no)	0.31	0.47	−0.04	1											
3. Competitors (1 = yes/0 = no)	0.43	0.50	0.01	0.01	1										
4. Dominant partner (1 = yes/0 = no)	0.28	0.45	0.07	−0.07	0.004	1									
5. CEO shareholder (% equity held by JV's CEO)	0.001	0.003	−0.03	−0.11	−0.07	−0.13	1								
6. Internal CEO (1 = yes/0 = no)	1.7	0.81	−0.28	0.08	−0.05	−0.04	0.02	1							
7. Board meetings (average annual number of meetings)	5.09	3.49	−0.30	−0.04	−0.09	−0.22	−0.01	0.24	1						
8. Experience (number of JVs formed since 1986)	2.18	1.91	0.08	0.03	0.04	−0.02	−0.04	−0.05	−0.08	1					
9. Cultural distance (Kogut and Singh's index)	0.56	0.81	0.28	0.07	−0.17	0.10	−0.05	−0.22	−0.21	0.11	1				
10. Size (turnover of the respondent firm)	90372.6	147943.8	0.04	0.10	−0.11	−0.05	−0.08	0.05	0.29	0.32	0.02	1			
11. Year (year in which the JV was formed)	1989	2.06	−0.04	0.16	−0.07	−0.20	−0.01	0.02	0.06	0.13	−0.06	0.07	1		
12. Scope1 (1 = multi-country or multifunction JV/0 = otherwise)	0.47	0.50	0.16	−0.18	0.04	0.09	0.13	−0.13	0.03	−0.10	0.15	−0.10	0.03	1	
13. Scope2 (1 = multi-country and multifunction JV/0 = otherwise)	0.10	0.31	−0.15	0.10	0.06	−0.05	−0.04	−0.06	−0.07	0.09	0.19	−0.10	0.04	−0.32	1

(4) *Year*. This is a continuous variable representing the year when the JV was set up. It was included as a control variable whose function is to reflect the fact that in those JVs created first, partners have had more time to fulfil their goals than in those JVs set up later on in time.

Lastly, two more variables were included in order to control for the value-creation potential and complexity of the joint venture. Specifically, we controlled for the geographical scope of the JV and for the number of functional areas (research and development, production, and marketing) involved. Consequently, the following variables are also part of our estimates.

(1) *Scope1*. This consists of a dummy variable that takes a value of one for JVs that are either multi-country (that is, the JV carries out activities, whatever their functional nature (whether research and development, production, or marketing), in more than one country) or multifunction (the JV involves more than one functional area), and otherwise takes a value of zero.
(2) *Scope2*. This is a dummy variable that is equal to one when the JV is simultaneously a multi-country and a multifunction one, and is zero otherwise.

Thus, JVs that perform a single function in a single country are the category that acts as the reference for these two variables.

Results

Table 2 shows the descriptive statistics and correlations of the variables used in our estimations. No high correlations were observed.

The testing of our working hypotheses was carried out in two phases. In the first phase, several ordered probit models were estimated for the full sample, including the aforementioned variables. Table 3 illustrates the results obtained. In the second phase, two parallel sets of estimations were undertaken for the JVs created by two and more than two partners respectively, including the same variables as in the first stage, except, of course, the one relative to the number of partners. Those estimations are presented in Tables 4 and 5. Each table shows the results of the three ordered probit models that were tested for each of the three samples: Model 1 includes all the independent variables; in Model 2, the relational-investment variables were excluded; and, lastly, Model 3 did not take into account the formal control variables. The tables also show the coefficient values of the different variables, as well as the standard deviation and an indication of their significance level. The full models run for each sample present overall significance levels below 0.05, as shown by the chi-squared values. Thus, the null hypothesis after which all the estimated coefficients are equal to zero may be rejected in all cases.

As can be seen in Tables 3–5, the results of the estimations confirm our hypotheses. Looking at Table 3, it can be observed that in accordance with Hypothesis 1, the two-partners variable presents the appropriate sign and is statistically significant. Thus, the results confirm that the likelihood that a

Table 3.
Ordered Probit
Model Estimates:
Full Sample
(N = 80)

Variables	Model 1: Estimates for the Full Model	Model 2: Estimates Without Relational Factors	Model 3: Estimates Without Formal Control
Two partners	0.80***	0.64**	0.79***
	(0.28)	(0.27)	(0.26)
Relational investments variables			
Previous alliances	1.03***		0.75***
	(0.31)		(0.26)
Competitors	−0.49*		−0.49*
	(0.28)		(0.27)
Formal control variables			
Dominant partner	0.60*	0.49	
	(0.36)	(0.31)	
CEO shareholder	10.28**	8.63**	
	(4.10)	(4.20)	
Internal CEO	0.42	0.31	
	(0.29)	(0.26)	
Board meetings	0.06	0.04	
	(0.05)	(0.05)	
Control variables			
Experience	0.15	0.09	0.13
	(0.09)	(0.09)	(0.08)
Cultural distance	−0.21	−0.06	−0.17
	(0.21)	(0.18)	(0.20)
Size	−1.53	−0.84	−1.55*
	(1.10)	(1.25)	(0.90)
Year	−0.01	0.04	0.005
	(0.07)	(0.07)	(0.06)
Scope1	−0.04	−0.20	0.15
	(0.33)	(0.28)	(0.28)
Scope2	0.93	0.78	0.94
	(0.68)	(0.64)	(0.70)
Intercept	−30.75	−75.51	−8.86
	(138.34)	(136.56)	(115.62)
Log likelihood (LL) function	−135.28	−143.20	−148.01
Chi-squared	33.48***	17.64*	25.06***
LL ratio test statistics		15.84***	25.46***

*p < 0.1   **p < 0.05   ***p < 0.01

Beta coefficients and boundary values (MU(i)) (standard deviations in brackets)

partner fulfils its goals is higher in dyadic than in multi-party JVs. Also, in the model estimated with the full sample, the variables associated with relational investment as well as with formal control mechanisms are jointly significant. The log-likelihood ratio test statistic for Models 2 and 3 in Table 3 (which exclude relational and formal control variables respectively) is significant in both cases. These results mean that both sets of variables have a significant influence on JV effectiveness, confirming that both of them represent appropriate ways of managing JVs.

Table 4.
Ordered Probit
Model Estimates:
Dyadic JVs
Subsample (N = 44)

Variables	Model 1: Estimates for the Full Model	Model 2: Estimates Without Relational Factors	Model 3: Estimates Without Formal Control
Relational investments variables			
Previous alliances	1.64***		1.45***
	(0.63)		(0.47)
Competitors	−0.88*		−0.86*
	(0.50)		(0.47)
Formal control variables			
Dominant partner	0.85	0.60	
	(0.62)	(0.56)	
CEO shareholder	5.59	3.80	
	(2.7×10^7)	(6.5×10^8)	
Internal CEO	0.08	−0.07	
	(0.53)	(0.39)	
Board meetings	0.04	−0.02	
	(0.09)	(0.08)	
Control variables			
Experience	0.16	0.06	0.14
	(0.23)	(0.16)	(0.20)
Cultural distance	−0.13	0.06	−0.19
	(0.27)	(0.22)	(0.25)
Size	−0.06	0.62	0.11
	(2.46)	(2.03)	(1.77)
Year	0.06	0.03	0.02
	(0.14)	(0.12)	(0.11)
Scope1	−0.05	−0.16	0.23
	(0.57)	(0.45)	(0.41)
Scope2	1.09	1.65	0.95
	(0.81)	(1.05)	(0.74)
Intercept	−120.68	−58.80	−37.33
	(271.13)	(248.63)	(211.06)
Log likelihood (LL) function	−67.93	−76.15	−70.42
Chi-squared	25.12**	8.69	20.15***
LL ratio test statistics		16.43***	4.97

*p < 0.1   **p < 0.05   ***p < 0.01

Beta coefficients and boundary values (MU(i)) (standard deviations in brackets)

Comparing dyadic and multi-party JVs (see Tables 4 and 5), the log-likelihood ratio test statistics show that the relational-investment variables have a significant influence on JV effectiveness in dyadic JVs, but not in the subsample of multi-party ones (see the log-likelihood ratio test statistic for Model 2 in Tables 4 and 5). Therefore, Hypothesis 2, namely, that the influence of relational investments on JV effectiveness is stronger in dyadic JVs than in multi-party ones, is corroborated. Focusing now on the dyadic JVs subsample (see Table 4), the results show that relational-investment variables have the predicted influence. The previous-alliances variable

Table 5.
Ordered Probit
Model Estimates:
Multi-party JVs
Subsample (N = 36)

Variables	Model 1: Estimates for the Full Model	Model 2: Estimates Without Relational Factors	Model 3: Estimates Without Formal Control
Relational investments variables			
Previous alliances	0.53		0.26
	(0.64)		(0.39)
Competitors	−0.20		−0.23
	(0.50)		(0.42)
Formal control variables			
Dominant partner	0.92*	0.90*	
	(0.55)	(0.53)	
CEO shareholder	31.96	28.73	
	(44.57)	(41.35)	
Internal CEO	1.86**	1.82***	
	(0.75)	(0.67)	
Board meetings	0.11	0.12	
	(0.11)	(0.08)	
Control variables			
Experience	0.08	0.09	0.16
	(0.34)	(0.33)	(0.13)
Cultural distance	−1.41	−1.42*	−0.50
	(0.87)	(0.77)	(0.47)
Size	−2.37	−2.09	−2.21*
	(2.03)	(1.90)	(1.31)
Year	0.10	0.14	0.08
	(0.12)	(0.12)	(0.09)
Scope1	−0.68	−0.73	−0.04
	(0.71)	(0.62)	(0.49)
Scope2	1.48	1.40*	0.95
	(0.80)	(0.82)	(1.53)
Intercept	−195.27	−272.20	−165.03
	(236.15)	(231.99)	(182.59)
Log likelihood (LL) function	−53.11	−53.94	−71.84
Chi-squared	29.29***	27.63***	8.61
LL ratio test statistics		1.66	37.36***

*p < 0.1   **p < 0.05   ***p < 0.01

Beta coefficients and boundary values (MU(i)) (standard deviations in brackets)

presents a significant positive effect on the effectiveness of these JVs. With regard to the competitors variable, it translates into a significant negative impact on the effectiveness of two-partner alliances.

Regarding the formal control variables, Table 4 illustrates that the log-likelihood ratio test statistic for Model 3, which excludes this group of variables, is non-significant for the dyadic JV subsample. This result means that this set of variables has a non-significant influence on JV effectiveness in dyadic JVs. On the contrary, the effect of the formal control mechanism variables on JV effectiveness is significant in the multi-party JVs subsample

(see the log-likelihood ratio test statistic for Model 3 in Table 5). These results confirm our Hypothesis 3, which states that the influence of formal control mechanisms on JV effectiveness is stronger in multi-party JVs than in dyadic ones. Turning to the individual influence of the formal control variables on the effectiveness of multi-party JVs, we can see (Table 5) that although the formal control variables are jointly significant, not all of them have a relevant influence when considered individually. Only dominant partner and internal CEO have a significant effect in the multi-party subsample. As the four types of formal control modes are, to some extent, substitutes, our results show that these two types reveal themselves as the most effective ones.

With respect to the control variables, it is worth pointing out that the cultural-distance variable has a negative, significant influence on JV effectiveness in the multi-party JVs subsample. This result can be taken as an indication that cultural problems may aggravate coordination problems in multi-country JVs. Estimations were carried out with industry-group dummies, but their inclusion did not change the general results, and the industry dummies did not show significant effects. Lastly, it is interesting to note that the marginal effects (available upon request) confirm the implications of the estimated coefficients in all the models.

Discussion

The study presented here has tried to analyse how and why JV effectiveness, understood as the likelihood of fulfilling the partners' goals, depends on whether the JV adopts a dyadic or a multi-party nature. Our three hypotheses have been confirmed (Tables 3–5) and, as discussed below, the overall pattern of results provides insights regarding the different paths that may lead to greater effectiveness in dyadic and multi-party JVs.

Our work has explored the baseline hypothesis that a partner is more likely to accomplish its goals when it participates in a dyadic JV rather than when it is immersed in a multi-party one. Results in Table 3 confirm this to be the case. We expected that the partners' relational investments would have a stronger influence on the effectiveness of dyadic JVs than of multi-party JVs. We also expected formal control mechanisms to be more influential on the effectiveness of multi-party JVs than on dyadic ones. The following discussion first examines the results that relate to the influence of relational effects on JV effectiveness and then considers the results that pertain to the influence that formal control mechanisms exert on effectiveness.

Relational Investments

Results in Tables 4 and 5 support Hypothesis 2, namely, that the influence of relational investments on JV effectiveness is stronger in dyadic JVs than in multi-party ones. These results are in tune with our conjecture that two-partner JVs would provide greater incentives than multi-party ones for the

participating companies to invest in relational assets. As previously mentioned, maintaining a reciprocal relationship is easier between two partners than in the context of more than two partners (Parkhe 1993b). In addition, the level of cooperative behaviour that can be achieved by two partners only, in the context of a multi-party alliance, is not usually enough to attain the critical mass required for the synergy of the alliance to be realized. Thus, relational investments may be expected to have a higher payoff in dyadic than in multi-party relationships. On the other hand, as in dyadic JVs, there are less interests to be harmonized; it will be easier for partners to find new common purposes that would make the extension of the relationship to new projects possible. The direct consequence is that the chances to capitalize their relational investment grow, which provides a greater incentive for it.

Another aspect to be considered is that dyadic JVs between partners with prior cooperative relationships, as well as those between partners who are not direct competitors, turn out to be more effective than other dyadic JVs. In multi-party JVs, these conditions do not have any significant influence on JV effectiveness. The effect of previous cooperative relationships is diluted, as it is hard to find multi-party JVs in which all the partners have had previous cooperative relationships. When the partners are direct competitors, this has the opposite effect to previous cooperative relationships. On the one hand, the fact that the partner is a competitor poses a threat to a company engaging in a JV, as this may have a boomerang effect on the firm which disincentives its investments in relational assets. On the other hand, there are also fewer chances that both companies will find new grounds for future collaboration, again demotivating relational investments. In the case of multi-party JVs, this effect is also diluted, as these alliances are not common with partners who are direct competitors. However, this might also indicate that multiple competitors have a tendency to form JVs in peripheral rather than in core areas.

Taken all together, these results show that the effect of relational investments is lessened in the case of multi-party JVs. For dyadic JVs where the partners are not competitors, the greater incentives for relational investments provided by their two partners result in a higher likelihood of goal fulfilment. This result complements previous studies that showed the need to analyse alliances within the set of relationships that exists among partners. In his influential study, Kogut (1989: 184) suggests that 'the transaction cannot be a unit of analysis in the absence of a broader understanding of the relationships among the parties'. Among others, Zaheer and Venkatraman (1995), Dyer (1997), Nooteboom et al. (1997), Dyer and Singh (1998), Madhok and Tallman (1998) and Kale et al. (2000) have shown how the relationship and trust between partners is a specialized resource that facilitates alliance management and development. Within this context, our results demonstrate how this broader dimension of alliances exerts a greater influence on dyadic relationships. In fact, the empirical studies that have revealed the importance of relational investments in the management of cooperative relationships have focused on dyadic relationships, such as subcontracting (Dyer 1997) or insurance distribution (Zaheer and Venkatraman 1995).

Formal Control Mechanisms

Along the lines of Hypothesis 3, the global effect of the formal control variables on JV effectiveness is significant in the case of multi-party JVs (Table 5), and non-significant for dyadic ones (Table 4). In particular, multi-party JVs in which one partner holds a dominant position, as well as those in which the JV CEO comes from one partner company, are more effective than other multi-party JVs. This is not the case for dyadic JVs. First, in multi-party JVs, the presence of a dominant partner facilitates decision-making and, hence, the coordination of work. Also, a greater share in the JV's residual assets comes as an incentive in the job of disciplining and controlling the rest of the partners. On the contrary, in dyadic JVs, a dominant partner may underestimate the other partner's interests, which may lead to conflicts. Second, a CEO coming from one of the partner companies is more likely to be knowledgeable about the JV's tasks than an outsider. Thus, she would be in a better position to control partners' contributions, their behaviour, and so on, contributing to the effectiveness of multi-party JVs. However, this positive effect may be neutralized in dyadic JVs, as a CEO that comes from one of the two partner companies is more likely to have a partisan view, bringing imbalance into the relationship.

Overall, our results concerning formal control mechanisms indicate that formal control should be measured paying more attention to control mechanisms other than equity ownership. These other formal control methods are also relevant, although they are difficult to apprehend. For instance, board meetings are a means of controlling and coordinating organizations (Pfeffer and Salancik 1978). However, the way in which they guide organizations toward effective control is not easy to measure. We know the number of meetings that have taken place, but not the effectiveness associated with them. In fact, sometimes these meetings are simply held as a consequence of complications that have arisen in the alliance. In order to deal with this problem, we decided to run parallel estimates introducing a multiplicative factor of this variable with another that measures the extent to which these meetings had been conflictive. The behaviour of the board meetings variable did not change, and formal control mechanisms also show a joint significant effect.

Additional insights may be derived from examining control variables. Cultural distance is negatively significant in Model 2 (which excludes relational factors) for the multi-party subsample (see Table 5). This result indicates that JV management through formal mechanisms becomes thorny in JVs involving multiple partners from culturally distant countries, although this negative effect is lessened by relational investments. Scope2 (the variable capturing JVs with multi-country and multi-function activities) is also positively significant in Model 2. JVs whose activities are multi-country and multi-function require a certain critical mass if they are to be effective.

Interestingly enough, alliance experience is not significant in any of the models. One possible interpretation is that experience is only valuable if the firm internalizes it (Simonin 1997). Another interpretation consistent with our results

is that experience in managing dyadic JVs may not be easily transferred to multi-party JVs, and vice versa. This suggests that we may need more fine-grained measures of alliance experience that capture the type of alliance from which experience is drawn.

Conclusions

Although many studies have examined the conditions influencing the effectiveness of JVs, few, if any, have focused on the differences between dyadic and multi-party JVs. The analysis presented here shows that the effectiveness of dyadic JVs is greatly influenced by relational investments. In particular, the fact of having maintained previous cooperative relationships with the same partner increases the effectiveness of dyadic JVs, while having a competitor as a partner diminishes it. On the other hand, the effectiveness of multi-party JVs is significantly affected by the use of formal control mechanisms. Specifically, the existence of a dominant partner and the fact that the CEO comes from one of the partner companies are factors that enhance the effectiveness of multi-party JVs.

Overall, we have shown that the potential value of relational investments is higher in dyadic than in multi-party JVs, thus leading to higher effectiveness in this kind of JV. On the contrary, in the case of multi-party JVs, there are less opportunities to capitalize the relational assets built previously, and this effect is diluted. Here, effectiveness would be explained by the existence of formal control mechanisms. Our results thus suggest the existence of two paths to effectiveness in JVs: their structuring as self-enforcing agreements and the development of formal control mechanisms. The former seems to be exclusive to dyadic JVs, while the latter would be appropriate for those with more than two partners, as well as for those with two partners when the development of a long-lasting relationship proves difficult, such as dyadic JVs between competitors.

Yet, it should be noted that this research is not without caveats. In particular, despite the fact that the presence of a single-item scale of effectiveness contributes to an easier response, it is still not as precise a measure as a multi-item scale. Moreover, it remains to be determined whether our results apply only to the limits of our sample or can be generalized to JVs in countries other than Spain. Another limitation of our study is that we only measured effectiveness on the basis of the perception of a single partner, which could show an incomplete picture of what happened in the alliance. Lastly, we have restricted our analysis to JVs, therefore, any attempt at extending our results to other types of alliance should be performed with caution.

We would like to remark that this research may be extended in a number of ways. It is a commonly accepted view that companies can cooperate while competing, and that these cooperative relationships may result in the creation of new competitors (Hamel 1991). However, the circumstances under which cooperative forces may overcome competitive forces is a question that deserves further study. In particular, it would be interesting to explore whether

there are differences in dyadic and multi-party JVs stemming from the stronger influence of relational effects on the former. A second way to develop this line of research further would be to study the relationships proposed here in a longitudinal fashion. For instance, it would be interesting to determine whether relational investments in dyadic JVs influence partners' engagement in future projects. In parallel, it has been suggested that there are several types of multi-party alliances that can be distinguished (Hwang and Burgers 1997). Further research should be oriented to identify the existence of differences in the appropriate way to manage the different types of multi-party alliances. Another suggestion for future research would be to analyse to what extent the type of alliances in which a firm has been involved moderates the influence of the experience of alliance management on JV effectiveness. Lastly, a future research line would be to extend our analysis to other types of strategic alliances using samples of alliances made by firms from several countries. In sum, we believe that the field is in need of more comparative research, and here we have made an attempt to suggest ways in which this could be done.

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