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MORE THAN TWO ARE A CROWD.
DIFFERENT PATHS TO EFFECTIVENESS
IN DYADIC AND MULTI-PARTY JOINT VENTURES

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Abstract

Using data from 87 joint venture (JV) experiences, we compared the effectiveness of dyadic and multi-party JVs. We show that dyadic JVs are more effective than multi-party ones, and that the conditions resulting in an enhanced effectiveness differ for the two groups: while relational embeddedness significantly influences the effectiveness of dyadic JVs, monitoring mechanisms are pivotal in the case of multi-party JVs.

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Introduction

Researchers studying strategic alliances have called attention to the need to take into account the context in which alliances are embedded, arguing that the study of alliance evolution incorporating embeddedness conditions is an under-explored area of research (Koza and Lewin, 1998). Alliances are embedded in, and their evolution is influenced by, the partners' strategies, the social network of external contacts, industry practices, and regulatory, institutional and cultural environments (Osborn and Hagedoorn, 1997; Gulati, 1998; Koza and Lewin, 1998). Embedded relationships between partners have been analyzed as determinants of alliance performance or duration (Levinthal and Fichman, 1988; Kogut, 1989; Park and Russo, 1996). However, although there is some evidence that alliances with embedded ties last longer than others, we do not fully know "the extent to which [these alliances] perform better or worse than others and why" (Gulati 1998: 309).

A second area that remains under-researched pertains to the differences between dyadic and multi-party alliances. Most studies on alliances develop their argument for the dyadic case, and suggest that the argument could be easily applied to multi-party alliances. Few have examined the effects introduced by the number of partners in an alliance. Gulati (1995a) and García-Canal (1996) argue that multi-party alliances are more difficult to govern than dyadic alliances, and Park and Russo (1996) predict a higher rate of failure in multi-party alliances. The literature has thus recognized that multi-party alliances occasion additional complexity, although the causes and consequences of this remain to a certain extent unexplored.

This study sheds light on these two research questions, analyzing the influence that one particular set of relationships (the overall relationships with the alliance partner) and the number of partners have on the effectiveness of one type of alliance, namely joint ventures (JVs). We argue in this paper that there are differences in the effectiveness of dyadic and multi-party JVs, and that each of these two types of JV follows a different path to achieve effectiveness. The origin of these differences lies in the different incentives that exist to carry out relational investments, i.e. to make any kind of effort to comprehend the partner's goals and to facilitate joint interaction. In dyadic JVs, the greater possibilities of developing the relationship favor investment in relational assets and, eventually, the embedding of the alliance in a network, which favors its being structured as a self-enforcing agreement. In multi-party JVs, in contrast, faced with the impossibility of structuring the JV in this way, the path to effectiveness is via monitoring efforts.

The structure of the present paper is as follows: in the first section a conceptual framework is presented for analyzing the influence of the number of partners on the effectiveness of JVs. At the same time, the different paths to effectiveness followed by dyadic and multi-party JVs are considered, and some hypotheses are formulated. Subsequently, these hypotheses are tested empirically, using the results of a survey on the effectiveness of JVs. Testing was carried out by estimating a number of ordered probit models, given the categorical and hierarchical nature of the dependent variable employed. After discussion of the results, the main conclusions are presented.

Paths to joint venture effectiveness

Two or more companies engage in a JV when the value they expect to derive from it is greater than the value they could derive from any alternative organizational arrangement. However, the realized value will usually be lower than the potential value (Madhok and Tallman, 1998). The potential value depends on the synergies that the partners expect to derive from sharing their resources. The realized value depends on the quality of the relationship stemming from the relational investments made by the partners: all other things being equal, the higher the quality of the relationship, the higher the realized value. This paper focuses not on the potential value but on the realized value, understood as "effectiveness", or the extent to which the focal partner's goals for the alliance are fulfilled.

Relational quality is an outcome of the relational investments undertaken by the partners. These investments include the managerial time, energy, and effort dedicated to the relationship (Madhok and Tallman, 1998). Building on 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 explain the genesis of relational quality. After early negotiation and commitments that set the initial conditions for a JV, execution of those commitments allows each company to learn about its partner (Ring and Van de Ven, 1994; Doz, 1996). The venture is then evaluated in terms of its efficiency and equity, and so is the inter-partner relationship quality. If the venture is judged to be within acceptable efficiency, equity, and relationship quality boundaries, the partners will go on executing their commitments. However, external changes may affect the efficiency and equity conditions in such a way that they go outside those acceptable boundaries. A company may react by engaging in a process of renegotiation with its partner so as to readjust their contributions and/or the distribution rules. If this renegotiation is successful, the partners will execute their new commitments, and the venture will be re-evaluated accordingly. Successful renegotiation of conditions also enhances the quality of the relationship, as the partners have been able to air their differences. However, if renegotiation is unsuccessful or if one of the companies reacts unilaterally to external changes instead of engaging in a renegotiation process, the relationship quality will suffer. A deteriorated relationship may eventually lead to the dissolution of the venture.

As this evolutionary model shows, the process by which relational quality is built up takes an important amount of relational investments 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, incompatibilities will surface sooner or later, as the evidence provided by Ariño and de la Torre (1998) shows. Each company will behave 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 fulfillment of the partners' goals for the venture will suffer.

Relational quality is more difficult to build and maintain when more partners are involved in the venture. As the number of partners increases, there are more interests to be harmonized, and problems of coordination increase (García-Canal, 1996). The number of dyadic relationships increases geometrically with the number of partners, as do the chances of one relationship becoming conflictive (Park and Russo, 1996). What is more, as the number of partners increases, the incentive for one or other of them to engage in free-rider behavior grows (Alchian and Demsetz, 1972; Stigler, 1974; Grandori, 1987; Salas, 1989). Sense-making processes become more complex and the possibilities of ex post disagreement about the initial goals increase (Park and Russo, 1996). Other things being equal, the quality of the relationship will be lower as the number of partners increases, and a lower level of effectiveness will be achieved.

It would seem reasonable to assume that the major quantitative and qualitative leap with regard to the effect that the number of partners has on effectiveness occurs with the change from two to three partners. This is when there appears the risk of coalitions being formed between the different partners and communication between them becoming more difficult, since the number of communication channels has increased from one to three (Pfeffer and Slancik, 1978). We therefore make the following hypothesis:

H1. In JVs created by only two partners there is a greater likelihood that the partners will be able to fulfill their goals than in JVs created by more than two partners.

If this hypothesis is confirmed, two relevant questions arise. First, why do relational investments improve the effectiveness of dyadic JVs relative to multi-party JVs? And second, what alternative mechanisms can ensure effectiveness in multi-party JVs?

The effectiveness of dyadic JVs: Self-enforcing agreements capitalizing on relational investments

There are three important differences between the two partner relationship and the more than two partner relationship that condition the decision to make relational investments. The first is that, other things being equal, the initial investment in developing the relationship is lower in the case of two partners. Each additional partner requires an extra effort on the part of the other companies in order to learn their organizational routines and goals. Hence, every new partner entry means an increase in the relational investments required for the normal operation of the JV. The second difference is that the "shadow of the future" (Axelrod, 1984; Parkhe, 1993b) is greater in alliances of only two partners: it is easier to define new joint action projects that are equally attractive to all the partners, since the number of interests to be harmonized is lower. A third difference is that reciprocity is easier to implement in two partner alliances (Parkhe, 1993b).

For the above reasons, the structuring of JVs as self-enforcing agreements in which the partners develop and profit from previous relational investments is easier in the dyadic case. In fact, when there are only two partners, it is easier for them to accumulate reciprocal knowledge, which may be profited from and applied to the different cooperative projects they may undertake in the future. In other words, relational investments are, ceteris paribus, lower, and the time horizon in which they are to be profited from is greater. The mechanism of reciprocity, on the other hand, reinforces the incentives to maintain cooperative behavior and allows relational investments to be marked out with the other partner: it is easier to identify whether the other partner is making an effort to invest in the relationship, and decide how to act in consequence.

In this context, the factors that reduce the need to carry out relational investments and/or that increase the shadow of the future favor the structuring of the JV as a self-enforcing agreement and hence the likelihood of achieving goals. Conversely, the factors that increase the need for relational investments and/or reduce the shadow of the future reduce the likelihood of achieving goals. The existence of previous cooperative relationships produces the former effect and direct competition between partners the latter.

Previous cooperative relationships. JVs created by partners that have already maintained satisfactory cooperative relationships on previous occasions start off with high levels of relational quality. Thus, the relational investments needed at the beginning of all cooperation projects are reduced. Specifically, there are three beneficial effects of the existence of satisfactory previous relations. Firstly, 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 been produced. Secondly, the two sides have acquired a reputation for living up to their agreements that reduces risks in future cooperations (Buckley and Casson, 1988; Parkhe, 1993a). Finally, when previous cooperative relationships are still in force, their existence offers an additional basis for reciprocity in the relationship since there are more channels for penalizing breaches of contracted obligations (Kogut, 1989; Park and Russo, 1996). We therefore make the following hypothesis:

> *H2. In JVs created by two partners, the existence of previous cooperative relationships increases the likelihood of achieving the goals for which the JV was created.*

Direct competition between partners. If the partners are direct competitors, the initial levels of relational quality are naturally not very favorable. Two other factors reduce the incentives to invest in relational assets. Firstly, if the partners are competitors, they have more incentive to take advantage of each other by trying to gain access to each other's competencies, thus paying less attention to the JV's common goals. When the partners have this kind of hidden agenda, it is difficult to structure the relationship as a self-enforcing agreement (Ariño, 1997) since there are incentives not to continue collaborating indefinitely. It is easier for the partners to absorb (Cohen and Levinthal, 1990) each other's competencies when they are direct competitors (Park and Russo, 1996). And since they compete in the same business, it is easier for them to apply these competencies immediately. Secondly, if the partners are competitors, it is difficult to define cooperative projects that are satisfactory to both. Competition facilitates the emergence of conflicting interests (Park and Ungson, 1997), which reduces the shadow of the future and once more makes the structuring of the JV as a self-enforcing agreement more difficult.

The above reasoning allows us to formulate the following hypothesis:

> *H3. In JVs created by two partners, the likelihood that the partners will be able to achieve the goals for which the JV was created is lower when the partners are direct competitors.*

Effectiveness of multi-party JVs: Avoiding free riding through monitoring mechanisms

The difficulty of developing projects among several partners and the high initial relational investments —at least compared with cooperation between two partners— make it extremely difficult for this type of JV to be structured as a self-enforcing agreement. The success of the relationship therefore depends on the JV being structured to include mechanisms that overcome the natural incentive for free rider behavior, while at the same time guaranteeing and/or facilitating the development of sense-making processes that make the partners' relationship and joint action congruent.

Following Alchian and Demsetz (1972), it is worth pointing out that the main solution to free rider problems in teams —and JVs may be considered teams— is supervision of individual contributions. Although these authors advocate specialization in the supervising function, supervision may be the joint responsibility of all the members of the team. Translating these solutions to the field of JVs, two possible applications are worth noting: the JV's CEO has a share in its equity, and one partner has dominant control of the venture.

Equity share for the JV's CEO. The task of managing a multi-party JV is, ceteris paribus, more complex than that of managing a two partner JV, since it is more difficult to harmonize interests. The work of the CEO therefore has greater impact on the results. Giving her a stake in the company's residual value would therefore be an effective form of performance incentive, as she would take upon herself part of the variability resulting from her work (Barzel, 1989). It would also discourage her from promoting or participating in subgroups or factions within the JV (Pearce, 1997). Finally, it would give her more room for for maneuver in settling disputes among the partners —and more authority to negotiate individually with each partner— with the consequent improvement in relationships between the partners. We may therefore expect that:

H4: Multi-party JVs in which the CEO is a shareholder are more likely to achieve the goals the partners have established.

Dominant control. Having a dominant partner —who owns more than 50% of the capital or a much larger share than the rest— facilitates decision-making and hence coordination, while symmetry in ownership of the capital may make the JV more prone to conflict. This is the view put forward by Killing (1983), who obtained some evidence of this, as did Park and Ungson (1997). One partner's having a greater share in the JV's residual assets would be an incentive for that partner to discipline and control the other partners. We therefore make the following hypothesis:

H5: In multi-party JVs, those in which there is a dominant partner are more likely to achieve the sought after goals.

METHODS

Data collection and sample

In order to test the hypotheses formulated above, a survey was conducted among Spanish companies that had been involved in setting up JVs. The JVs were detected by means of an analysis of press clippings published in the daily newspaper *Expansión* —the leading financial newspaper in Spain— between 1986 and 1992. The search was cut off at the end of 1992 so as to leave a sufficient amount of time between the creation of the JV and the time of the study. At the same time, we considered only press clippings relating to JVs in which at least one member was Spanish. We focussed on JVs with Spanish members in order to homogenize the sample, as well as for reasons of representativeness. In this way, we identified 438 Spanish companies that had participated in JVs, with a total of 656 participations.

The main reason for relying on Spanish companies is that since the Spanish economy was opened up and allowed to integrate with the European and world economy during the 70s and 80s, Spanish companies have been forced to engage in a fair number of JVs –and strategic alliances in general– in order to gain access to new technologies and/or markets. Hence, focussing on JVs created by Spanish companies gave us an assurance that we would be able to obtain sufficient empirical evidence of the new types of JVs that have arisen worldwide since the end of the 70s.

In order to obtain information on the characteristics of their participation in JVs and the circumstances in which this occurred, a questionnaire was mailed to the companies detected. Each questionnaire dealt with the respondent's participation in one particular JV. A maximum of three questionnaires was sent per company, so as to encourage them to reply. In selecting JV experiences, priority was given to criteria such as the scale of the collaboration project, and the diversity with regard to variables such as the number and nationality of the partners. The questionnaires were addressed to the company's CEO. They were first sent out at the beginning of January 1997, with a second mailing approximately two months later, together with a follow-up phone call. Completed questionnaires continued to be received until June of that year, and the following months were spent screening and, when necessary, completing missing information by contacting the person in question by phone or fax.

A total of 609 questionnaires were sent to 431 Spanish companies. Of these, 99 were returned, and 87 were considered valid for this study (the rest were discarded for various reasons, mainly because they referred to forms of cooperation other than JVs or because they contained insufficient information). Table 1 shows the industry groups to which the companies in the sample and those that responded to the questionnaire belonged.

Table 1. Distribution of sample and respondents by industry groups
(In percent)

Sector	Sample	Respondents
Agribusiness	14.6	12.3
Metals and minerals	1.0	
Energy and water	6.2	11.0
Construction	3.6	1.4
Textiles, leather, clothing and shoes	4.5	2.7
Paper and wood	3.8	1.4
Chemicals	4.8	8.2
Computers and semiconductors	1.9	
Other electric and electronic products	6.2	9.6
Automobiles	1.2	1.4
Aerospace	0.7	2.7
Other machinery	3.1	4.1
Other manufacturing	6.0	8.2
Transportation	1.7	4.1
Communication and advertising	1.4	
Distribution	6.0	1.4
Finance	18.9	27.4
Services	12.2	2.7
Computer software	2.2	1.4
CASES	431	73

Dependent variable and method of analysis

As mentioned earlier, this study focuses on effectiveness, understood as the degree to which the partners achieve the goals for which the JV was created. Information relating to this aspect was therefore sought in the questionnaire. Specifically, the companies were asked to indicate their degree of agreement with the following statement: "The goals for which this JV was created have been completely achieved". Their degree of agreement was indicated by means of an interval scale of 0 to 6, where 0 corresponded to "Totally disagree" and 6 to "Totally agree". This assessment allowed us to construct a categorical and hierarchical variable in which the scores given in each case reflected only one ranking, an increase from 1 to 2 in this variable not being considered equivalent to an increase from 2 to 3. This means that it is not appropriate to use ordinary least square estimates. Conventional dummy dependent variable methods, such as 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 (McElvey and Zavoina, 1975; Greene, 1993) to test the hypotheses formulated above. The ordered probit model is constructed around a latent regression with the form:

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

Where Y* is an unobservable index —which in this case measures the degree of achievement of the goals—, α is the independent term, β the vector of coefficients associated with the independent variables (defined below), and e the random disturbance term. Our observations were limited to assigning each company to one category on an interval scale (0 to 6), where each category corresponds to a specific range of Y*, such that:

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

where μ_i are unknown parameters that determine the boundary values of each range. Once we have assumed the distribution that e follows —in the case of the ordered probit, a normal distribution (1)— we estimate the parameters under study using maximum likelihood techniques. From these estimations we obtain a coefficient associated with each independent variable that indicates that variable's (positive or negative) impact on the likelihood that, in this case, the JV's goals will be achieved. The estimations also give the boundary values μ_i that define the intervals, and that must be ordered hierarchically. The estimations were obtained using the routines included for this purpose in the LIMDEP 7.0 program. To test for the existence of no-response bias with respect to the degree of goal achievement, we tested for the existence of significant differences in this variable among the first and last groups of questionnaires returned, without finding any significant difference.

Independent variables

We used the following independent variables in our estimations:

The Two Partners variable was used to test Hypothesis 1, concerning the influence of the number of partners on the likelihood of achieving goals. This is a dummy variable that equals 1 when the number of partners is two and 0 otherwise. In defining this variable, we considered alliances between two companies in which one owns 100% of the other's capital, or both are 100% owned by a third company, as sole proprietorships. Also, in cases where the JV's CEO had an equity stake, the CEO herself was not counted as one of the partners.

The following two variables were used to test Hypotheses 2 and 3 (relational factors), respectively:

Previous alliances: a variable that measures how important the existence of a good relationship with any of the other partners, established in other earlier alliances, was in creating the JV in question. Specifically, this variable is the product of a dummy variable that equals 1 when the company under study had maintained previous cooperative relationships with any of its partners and another variable that measures —using a scale from 1 to 7— whether the previous relationship had been decisive in the creation of the JV under study.

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(1) The choice of a logistical distribution leads to the estimation of an ordered logit model. Greene (1993) points out that this is a trivial decision in the sense that it does not translate into relevant differences in the results.

Competitors: a dummy variable that equals 1 when any of the partners was a direct competitor of the company under study and 0 otherwise.

The following two variables were used to test Hypotheses 4 and 5 (monitoring mechanisms), respectively:

CEO Shareholder: a dummy variable that equals 1 when the C.E.O. of the JV is a shareholder and 0 otherwise.

Dominant Partner: a dummy variable that equals 1 when one of the partners owns more than 50% of the shares of the JV or a much greater share than the other partners (in the opinion of the company under study), and 0 otherwise.

At the same time, we included the following control variables in the estimations we carried out:

Experience: this variable measures the company's experience in managing JVs. We approximated this experience with the number of JVs which the company under study had participated in since 1986. This variable was included because a number of different studies have analyzed its influence on the success of alliances. Westney (1988), for instance, considers that the (favorable) experience of a company in the management of alliances facilitates the exploitation and internal diffusion of the partners' knowledge in subsequent alliances, as well as developing the capacity to manage the relationship with these partners. Likewise, Barkema et al. (1997) found that a company's prior experience in domestic JVs increased the life of international JVs.

EU Partners and Non-EU Partner: these are two dummy variables related to the cultural distance between partners, which is one of the factors most frequently analyzed as determining the effectiveness of a JV. EU Partners equals 1 for international JVs in which all the partners come from European Union countries, excluding Spain, and 0 otherwise. The Non-EU Partner variable equals 1 for international JVs in which at least one partner comes from a country that does not belong to the European Union, and 0 otherwise. Thus, domestic JVs —those in which all the partners are Spanish— act as a reference for the behavior of these variables. In general, the idea is that the greater the socioeconomic, political and cultural distance between countries, the more difficult it is to achieve effectiveness in a JV (Beamish, 1988).

Size: a variable that measures the size of a company participating in a JV in terms of turnover. The purpose of including it is to tentatively analyze its effect, while at the same time correcting any biases it may cause.

Table 2. Correlation matrix

	1	2	3	4	5
1. Two partners	1				
2. Previous alliances	–0.02	1			
3. Competitors	0.04	-0.07	1		
4. CEO Shareholder	–0.31	0.09	–0.06	1	
5. Dominant Partner	0.16	-0.04	0.05	–0.23	1
6. Experience	0.08	-0.05	0.03	0.09	0.00
7. Size	0.04	0.08	-0.08	0.14	–0.02
8. EU Partners	0.10	0.15	0.01	–0.16	0.01
9. Non-EU Partner	0.14	–0.14	–0.13	0.03	0.22

Results

      The testing of the hypotheses formulated above was carried out in two stages. During the first stage an ordered probit model was estimated for the whole sample, including the aforementioned variables. Table 3 shows the results obtained. In the second stage, two parallel estimations were carried out for the JVs created by two and more than two partners, respectively, including the same variables as in the first stage, except, of course, for the one relative to the number of partners. These estimations are presented in Table 4, which gives the values of the coefficients of the different variables and the boundary values that limit the $Y*$ ranges for each model (as stated above, the first of the six is zero), along with the standard deviation and an indication of the significance level of both. All the models present satisfactory indicators of overall significance, with chi-square values that correspond to significance levels of below 0.05. Thus, the null hypothesis that all the estimated coefficients are equal to zero may be rejected.

Table 3. Ordered probit model estimates: Full sample

Variables	Coefficients[†]	
Two partners	0.61	**
	(0.29)	
Previous alliances	0.13	***
	(0.05)	
Competitors	–0.22	
	(0.24)	
CEO Shareholder	0.66	*
	(0.39)	
Dominant partner	0.45	
	(0.29)	
Experience	0.13	
	(0.09)	
EU partners	0.55	*
	(0.29)	
Non-EU partner	0.38	
	(0.39)	
Size	–1.45*	
	(0.82)	
Constant	0.37	
	(0.37)	
MU (1)	0.68	***
	(0.17)	
MU (2)	0.95	***
	(0.19)	
MU (3)	1.40	***
	(0.22)	
MU (4)	1.91	***
	(0.23)	
MU (5)	2.64	***
	(0.27)	
Chi-Squared	28.61 [p=0.001]	
Cases	87	
* p<0.1 ** p<0.05 *** p<0.01		

(†) Beta coefficients and boundary values —μ— (standard deviations in brackets).

Table 4. Ordered probit model estimates:
Dyadic JVs and Multi-party JVs Sub-samples

Variable name	Dyadic JVs[†]		Multi-party JVs[†]	
Previous Alliances	0.26	***	0.09	
	(0.07)		(0.07)	
Competitors	–0.76	*	–0.05	
	(0.42)		(0.39)	
CEO Shareholder	1.23		0.97	**
	(4948.)		(0.45)	
Dominant partner	0.60		0.17	
	(0.49)		(0.58)	
Experience	0.18		0.03	
	(0.19)		(0.17)	
Size	0.89		–2.32	**
	(1.85)		(1.10)	
EU Partners	–0.21		1.03	**
	(0.48)		(0.51)	
Non-EU Partner	–0.29		1.16	
	(0.54)		(1.44)	
Constant	1.28	**	0.49	
	(0.64)		(0.63)	
MU (1)	0.74	*	0.78	**
	(0.38)		(0.27)	
MU (2)	1.01	**	1.11	***
	(0.41)		(0.31)	
MU (3)	1.40	***	1.66	***
	(0.43)		(0.39)	
MU (4)	2.13	***	1.98	***
	(0.45)		(0.38)	
MU (5)	2.84	***	2.91	***
	(0.46)		(0.55)	
Chi-Squared	21.50 [p=0.006]		15.82 [p=0.045]	
Cases	46		41	
* p<0.1	** p<0.05		*** p<0.01	

As can be seen in Tables 3 and 4, the results of our estimations confirmed the vast majority of the hypotheses formulated. Specifically, the Two Partners variable has the appropriate sign and is statistically significant, thus confirming that in JVs with only two partners there is a greater likelihood of the partners achieving their goals than in JVs with more than two partners (Hypothesis 1).

The Previous Alliances variable has a positive effect on the likelihood of goal achievement which is significant both for the sample as a whole and for two partner JVs, as conjectured in Hypothesis 2. With regard to the Competitors variable, a negative effect on the degree of goal achievement is observed which is significant only for two partner alliances, thus confirming Hypothesis 3, which sustains that the likelihood of the partners being able to achieve the goals for which the JV was created will be less when they are direct competitors.

The CEO Shareholder variable exerts a positive and significant influence, both for the sample as a whole and for the sub-sample of JVs created by more than two partners. This confirms that in this type of JV, the fact that the CEO is a shareholder increases the likelihood of the partners' achieving their goals (Hypothesis 4). However, the Dominant Partner variable was not found to be significant for any of the sub-samples, and so Hypothesis 5, which states that the existence of a dominant partner would have a favorable influence on the likelihood of achieving goals, could not be accepted.

As far as the variables related to the psychological distance between the partners are concerned, it is worth pointing out that the EU Partners variable has a positive and significant effect on goal achievement, both for the sample as a whole and for the projects with more than two partners. This result might indicate that JVs created by European partners are backed by cooperation projects with greater synergy than those associated with domestic JVs. Note, in this respect, that Spain's integration in the European Union has increased the interdependence between Spanish companies and those of the rest of Europe, with the consequent possibility of undertaking joint projects that create value. The fact that the influence of this variable is significant only in multi-party JVs might indicate that the most solid ventures in this sense are those that require the participation of more than two partners.

Finally, with regard to the Size variable, our results demonstrate a negative effect on the likelihood of achieving goals, which is statistically significant both for the sample as a whole and for multi-party JVs. This result might be explained by the fact that underlying multi-party JVs is the desire to reach a certain critical mass that will allow them to pursue a particular activity more effectively; smaller companies with fewer resources are the ones that will find this type of association most advantageous. The remaining control variables were not found to be statistically significant. Estimations were carried out with industry group dummies, without obtaining significant results. Finally, it is worth pointing out that the marginal effects confirm the implications of the estimated coefficients in all the models.

Discussion

This study has considered how JV effectiveness, understood as the likelihood of the partners' goals being achieved, depends on whether the JV is dyadic or multi-party. We expected that the likelihood of goal fulfillment in JVs with only two partners would be influenced by the set of previous and concurrent relationships between the partners. We also expected that these effects would be diluted in JVs with more than two partners, where we expected monitoring mechanisms to have greater influence on the likelihood of goal

achievement. There was support for most of our hypotheses (Tables 3 and 4) and, as is 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 base-line hypothesis was that in JVs created by only two partners there would be a greater likelihood of the partners being able to achieve their goals than in JVs created by more than two partners. The results presented in Table 3 confirm that this is in fact the case. In the following section we first discuss the results relating to the influence of relationships on JV effectiveness, and then consider the results regarding the influence that monitoring mechanisms have on effectiveness.

Relational effects

The results shown in Table 4 support Hypothesis 2: that in JVs created by two partners the existence of previous cooperative relationships between the partners increases the likelihood of achieving the goals for which the JV was created. This effect is not significant in the case of multi-party JVs. These results are in line with our conjecture that two partner JVs offer greater incentives than multi-party JVs to invest in relational assets. On the one hand, maintaining a reciprocal relationship is easier when there are two partners than when there are more than two (Parkhe, 1993c). Relational investments may therefore be expected to have a higher payoff in dyadic relationships than in multi-party relationships. When there are more than two partners, the effect of previous cooperative relationships is diluted due to the fact that a relationship need not have been maintained with all the partners; and cooperative behavior by only two of the partners may not be enough to achieve the critical mass required for the synergy that the alliance is intended to generate.

On the other hand, as in dyadic JVs there are fewer interests to be harmonized, the chances that the partners will find new common purposes that would make it worthwhile to extend the relationship to new projects are greater than in multi-party JVs. Therefore, there is a better chance that the partners will be able to capitalize on their relational investment, and this provides a greater incentive to make the investment in the first place.

We also found support (Table 4) for Hypothesis 3: that in JVs created by two partners, the likelihood of the partners being able to achieve the goals for which the JV was created will be less when the partners are direct competitors. We did not find a significant effect in the model for JVs with more than two partners. This factor has the opposite effect to previous cooperative relationships. On the one hand, the fact that the partner is a competitor poses a threat to any company entering a JV, as it may have a boomerang effect, which discourages the firm from investing in relational assets. On the other hand, there is less chance that the two companies will find new ground for future collaboration, which again discourages relational investments. In the case of multi-party JVs, this effect is diluted. This may be partly due to the way this variable is defined: in multi-party JVs, all of the partners do not necessarily have to be competitors, as is the case in two partner JVs. However, it may also have to do with the tendency for JVs among multiple competitors to be formed in peripheral rather than core areas.

Taken together, these results show that the effect of past and concurrent relationships is diluted in the case of multi-party JVs. The greater incentives for relational investments in two partner JVs compared with multi-party JVs —especially when the partners are not competitors— translate into a greater likelihood of goal achievement in the case of dyadic

JVs. This result complements earlier studies that have demonstrated the need to analyze alliances within the set of relationships that exist among partners. In his pioneering 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". Zaheer and Venkatraman (1995), Dyer (1997) and Madhock and Tallman (1998), among others, have shown how the relationship itself and trust between partners is a specialized resource that facilitates both the development of alliances and their governance. In this context, our results show that this broader dimension of alliances exerts more influence in dyadic relationships than in multi-party relationships. In fact, the empirical studies that have revealed the importance of relational investments in governing cooperative relationships have tended to focus on dyadic relationships, such as subcontracting (Dyer, 1997) or insurance distribution (Zaheer and Venkatraman, 1995).

Monitoring mechanisms

As can be seen in Table 4, the results confirm Hypothesis 4: that multi-party JVs in which the CEO is a shareholder are more likely to achieve the partners' goals than those in which the CEO is not a shareholder. A JV's management team may develop its own independent goals for the JV —such as JV survival, or avoiding friction among the partners (Schaan and Beamish, 1988). The incentive to adopt independent goals increases with the number of partners, since the partners have fewer incentives to supervise the management team's work. When the CEO has an equity stake in the JV, the management team's goals are more likely to be aligned with those of the partners, and the CEO is likely to take more interest in achieving the partners' goals. When there are two partners, they need only one channel of communication (Pfeffer and Salancik, 1978), so the role of the CEO as mediator between the participating companies is not so important and she becomes more of an executor of the partners' strategic decisions. Also, the partners are able to control her work more effectively, which discourages her from pursuing independent goals.

Hypothesis 5, which states that multi-party JVs in which there is a dominant partner are more likely to achieve the goals for which they were created, did not find support (Table 4). Nevertheless, it should be pointed out that there are alternative theories which sustain that balanced equity JVs favor cooperative behavior. In fact, the greater the inequality in the distribution of shares, the greater the incentive for minority shareholding companies not to cooperate, owing to their having a smaller share in the residual value of the JV (Park y Russo, 1996). Beamish (1988), Blodgett (1992) and Saxton (1997) obtained evidence of better performance in balanced equity JVs.

Conclusions

Although many studies have examined the conditions that influence the effectiveness of JVs, few if any have focused on the differences between dyadic and multi-party JVs. The analysis presented here shows that JVs with two partners and JVs with more than two partners do differ in terms of their effectiveness. When compared to multi-party JVs, dyadic JVs show a higher likelihood of goal achievement. Moreover, the effectiveness of dyadic JVs is greatly influenced by the network of inter-partner relationships outside the JV. 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 monitoring mechanisms. Specifically, the CEO's having a share in equity is a factor that enhances the effectiveness of multi-party JVs.

Overall, we have shown that the existence of embedded ties significantly influences the effectiveness of dyadic JVs, but not that of multi-party JVs. The reason for this difference lies in the fact that dyadic JVs provide greater incentives for investing in relational assets, and more so when the partners are not competitors. Firms that have invested in relational assets in previous cooperative relatioships with the same partner capitalize on these investments in current JVs. In multi-party JVs there are fewer opportunities to capitalize on relational assets built previously, so this effect is diluted. In this case, effectiveness is explained by the existence of monitoring mechanisms.

Our results thus show that there are two paths for effectiveness in JVs: the structuring of the JV as a self-enforcing agreement that promotes the development of a long-lasting relationship embedded in a network of joint cooperative ties, and the development of monitoring mechanisms. The former seems to be exclusive to dyadic JVs, while the latter would be appropriate for JVs with more than two partners, as well as for two partner JVs in which the development of a long-lasting relationship is not possible.

This research may be further developed in a number of ways. Companies may cooperate and compete at the same time, and cooperative relationships may result in the emergence of new competitors (Hamel, 1991). In what circumstances the forces of cooperation overcome the forces of competition is a question that deserves further study. In particular, it would be interesting to explore whether there are differences between dyadic and multi-party JVs stemming from the stronger influence of relational effects in the former. A second way to further develop this line of research would be to study the relationships proposed here in a longitudinal fashion. Finally, it should be pointed out that there are several types of multi-party alliances, as Hwang and Burgers (1997) have argued. Further research should identify whether there are differences in the appropriate structuring of these different types of multi-party alliances. □

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