

DUISBURGER ARBEITSPAPIERE ZUR OSTASIENWIRTSCHAFT
DUISBURG WORKING PAPERS ON EAST ASIAN ECONOMIC STUDIES

No. 71 / 2004

Trust, control, interaction and performance in IJVs
– a taxonomy of German-Chinese Joint Ventures –

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herausgegeben von / edited by

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Title/Titel:

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Abstract/Zusammenfassung:

Control and trust are recurring themes in the analysis of the management of International Joint Ventures (IJVs). Both issues (and their antecedents) have been analysed in isolation and in their relation with performance, though hardly any study exists which analyses them simultaneously in their interdependence. More importantly however, there are few, if any, studies that have empirically tested the existence and nature of the *mechanisms* that are assumed to link control and trust to performance. It is the purpose of this paper to empirically investigate these mechanisms in view of the interaction processes taking place between the JV partners. Analysing the interaction processes in the context of control, trust and performance is expected to provide a better understanding of the relationship between control, trust and performance. To this aim a concept of inter-firm interaction in IJVs is proposed. The empirical basis for this study consists of data gathered through a questionnaire survey among German and Chinese General Managers of German-Chinese Joint Ventures (GCJVs) in the People's Republic of China carried out in 2000/01. Using Cluster-Analysis two JV types are derived, which allow for some first yet tentative inferences to be made regarding the complex interplay between control, trust, performance, and interaction in GCJVs.

Keywords/Schlagwörter:

Joint Venture, China, empirical study, trust, control.

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– a taxonomy of German-Chinese Joint Ventures -

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| Content | Page |
|---|-------------|
| 1. Introduction | 1 |
| 2. Control, trust and the interaction between JV partners | 2 |
| 2.1. Control | 2 |
| 2.2. Trust | 3 |
| 2.3. Conceptualising Interaction in IJVs | 6 |
| 3. The role of interaction in the relationships between control, trust, and performance | 8 |
| 3.1. Exchange of resources and information | 8 |
| 3.2. Communication | 9 |
| 3.3. Adjustment between the partners | 10 |
| 4. Method, empirical basis and measures | 10 |
| 5. Results and discussion | 13 |
| 6. Conclusions and limitations of the study | 16 |
| 7. Appendix | 17 |

1. Introduction

Trust and control have been recurring themes in the analysis of IJVs. Whereas control has a long tradition in the research on IJVs (see, for example, Child, Yan, & Lu, 1997, Geringer & Hebert, 1989, Glaister, 1995, Yan, 2000), the issue of trust in inter-organisational settings in general and IJVs in particular has received more and more scholarly attention in recent years (see, for example, Currall & Inkpen, 2002, Gulati, 1995). Both concepts have been analysed in isolation and in their relation with JV performance, itself a construct which is debated intensively in extant literature on IJVs (Geringer & Hebert, 1991, Luo, 2002). After reviewing these variables and the relationships that have been suggested to exist between them, this paper argues that the role of inter-firm interaction has so far been neglected and thus extends the analysis to include the interaction between the JV partners.

Hitherto, researchers have focussed on what might be labelled input variables (such as the level of trust between partners, or the distribution of control between the partners) and output variables, i.e. the performance of the JV, without giving too much attention to the processes/events that link input and output variables. Many researchers have, of course, stressed the need for longitudinal research into the workings of IJVs. This call has been particularly pronounced with the growing interest in the role trust plays for the performance of international cooperative ventures, and to find out how trust between partner firms can be fostered. Little progress has, however, been made in this respect, and most researchers have analysed trust and control as an input variable which influences the outcome of JVs, or as an output variable, and have studied the impact of contextual factors on the level of trust that exists between partners.

The problem, however, is that although scholars provide some arguments as to what the mechanisms are that link control and trust to performance, they have so far limited themselves on empirically measuring the level of trust or control (input) on the one hand and the performance of the JV (output) on the other hand, and testing the (functional or causal) relationships between these concepts. If the empirical data supports their hypothesised relationship authors regularly - albeit in some cases implicitly - seem to see this also as a proof for the argumentative link between the constructs. However, it has to be borne in mind that it may be possible that although there is an association/relationship between trust/control and performance, the underlying mechanisms are different. This could be ignored if it were not for the fact that these assumptions about the mechanisms at work are usually used to arrive at recommendations on how to improve the level of control over the JV or on how to increase the level of trust between the partners. This is potentially misleading, as the formulation of such recommendations necessitates prior empirical support for the mechanisms that link trust/control and performance, and cannot be based on the mere existence of such links. An empirical investigation of these mechanisms, however, would allow a more comprehensive understanding of the complex web of relationships between the different

issues and from there to arrive at empirically grounded recommendations as to what role control and trust play for the performance of JV, and how managers can possibly try to modify these mechanisms for their aims.

In this study no attempt is made to derive and empirically test simple uni-directional, causal relationships between two variables in isolation, as it is assumed that the complex interrelationships that exist in IJVs cannot be comprehensively reflected in singular relationships. Rather, it is suggested that the complexity of the subject matter warrants a more 'holistic' approach in analysing the interrelatedness existing among control, trust, performance, and the interaction between the partner firms. Therefore, cluster analysis will be used to identify and distinguish between two types of JV which differ significantly along the dimensions trust, control, performance, and the nature of the interactions taking place between the JV partners.

The remainder of the paper is structured as follows: in the next section the existing research on control, trust and performance as well as their relationships is reviewed. Afterwards the interaction between IJV partners is conceptualised based on a concept developed in the area of industrial marketing. The subsequent section discusses the interrelationships between control, trust, performance, and interaction. In section 4 the empirical basis is outlined. The results are presented and discussed in section 5. Section 6 concludes the paper and outlines the study's limitations and some directions for future research.

2. Control, trust and the interaction between JV partners

2.1. Control

Whereas the scholarly attention on trust in inter-organisational co-operation is a recent phenomenon, the importance of *control* for the success of IJVs had already been stressed in the late 1950s by West (1959). More recent analyses were carried out by Awadzi, Kedia & Chinat (1986), Beamish (1988), Geringer (1988), Geringer & Hebert (1989), Hébert & Beamish (1997), Killing (1983), Kumar & Esslinger (1998), Kumar & Khanna (2000), Newburry & Zeira (1999), and Schaan (1983). The theoretical basis for arguments suggesting a positive influence of control on the success of IJVs includes agency theory (Ramanathan, Seth, & Thomas, 1997) and transaction cost economics (Dyer, 1997, Haury, 1989, Provan & Skinner, 1989).

The extent to which a partner of an IJV exerts control can be viewed from *two different perspectives*. First, the extent of control can – as is the case within the prominent concept of joint venture (JV) control presented by Geringer & Hebert (1989) – refer to the interaction between the headquarters of a JV partner and the JV management. In this case, the focus is put on the question of how far the management of the IJV is being influenced by the headquarter(s) of the respective partner company(ies), i.e. the level of autonomy granted to the IJV (Kumar & Khanna, 2000, Kumar & Seth, 1998, Lyles & Reger, 1993). Aside from

viewing the extent of control within the relationship between headquarter(s) and IJV management, it is also possible to analyse the extent of control in the context of the relationship between the partners. In this second perspective, the extent of control refers to the level to which one partner exerts control over the IJV *vis-à-vis* the other partner (Bleeke & Ernst, 1991, Das & Teng, 1998, Kogut, 1989). The interviews carried out suggest that it is this perspective of control which is most important to the partners, whereas the control of the IJV management by the headquarters is seen as more of an internal problem of the respective partner. In this second perspective, the term ‘partner’ thus includes not only the headquarter of the partner company but also the manager and employees it sends as representatives to the IJV.

Control in this second perspective involves monitoring as well as influencing the behaviour of the partner and/or outcomes of this behaviour. The partner’s actions are monitored in order to detect deviations from expected behaviour in order to make sure that one’s own goals for the IJV are not obstructed and/or are more likely to be achieved. As opposed to the first perspective, influence in the second perspective aims not only at the actions of the partner company or their representatives, i.e. the way in which they carry out certain tasks, it additionally includes the possibility of deterring the partner from carrying out specific IJV activities, e.g. by appointing selected personnel to specific positions. In this study this second perspective has been chosen.

2.2. Trust

In recent years, the notion of *trust* in the context of inter-organisational co-operation has received increased scholarly attention (e.g. Alter & Hage, 1993, Fichman & Levinthal, 1991, Gulati, 1995, Inkpen & Currall, 1997, Madhok, 1995, Park & Ungson, 1997, Parkhe, 1993, Saxton, 1997). Within research on IJVs – as a specific form of inter-organisational co-operation – trust has advanced to an important explanatory variable for success (Beamish & Banks, 1987, Buckley & Casson, 1988, Inkpen & Currall, 1997, Madhok, 1995). The reason for the increased interest in the role of trust lies in the (assumed) positive influence a trustful relationship has on the success of inter-organisational co-operation in general and IJVs in particular (Inkpen & Currall, 1997, Mayer, Davis, & Schoorman, 1995, Sarkar, Cavusgil, & Evirgen, 1997)

Although there seems to be agreement regarding the importance of trust for the functioning of social systems, so far no widely accepted definition of trust has emerged (Hosmer, 1995). Suggestions as to how to define ‘trust’ were made by authors, such as Dunn (1988), Gambetta (1988), Hagen & Choe (1998), Lewicki, McAllister & Bies (1998), Madhok (1995), Mishra (1996), Sabel (1993), and Zucker (1986), but ‘trust’ remains “[...] a term with many

meanings” (Williamson, 1993, p. 453). As a result of the lack of a common definition of trust, there is also a wide variety of indicators and constructs used by researchers to measure trust (Cummings & Bromiley, 1996, Nyhan & Marlowe, 1997, Ring & Van de Ven, 1992). In their analysis of existing empirical studies, McKnight & Chervany (1996) found that so far trust has been conceptualised using a multitude of single dimensions or combinations of dimensions, such as competence, expertness, predictability, morality, goodwill, responsiveness, etc. For this study three dimensions were chosen, which were mainly used in psychological or sociological research *and* were also frequently mentioned by the interviewed managers when talking about the level of trust between the partners.

As a *first dimension* of trust, existing research as well as the interviewed managers stress the importance of ‘*integrity*’ (Creed & Miles, 1996, Johnson, Cullen, Sakano, & Takenouchi, 1996, Mayer & Davis, 1999). ‘Integrity’ refers to the general match between the partner’s declared intentions and the course of action eventually taken by him, which can lead to a reputation of reliability or predictability. In the case of IJVs, integrity can be evidenced by the level to which partners comply with contractual obligations or other agreements: the trusting partner assumes that his opposite will stick to agreements.

As a *second dimension* of trust, various authors used the notion of ‘*benevolence*’ (Anderson & Narus, 1990, Johnson, Cullen, Sakano, & Takenouchi, 1996, Mayer & Davis, 1999). If a partner is seen as benevolent, he is expected to refrain from opportunistic behaviour. However, the perception of benevolence is not limited to the belief that our partner will not act opportunistically, but also entails the perception that he has an intrinsic interest in furthering *our* objectives, i.e. benevolence includes the “[...] expectation that the other party may take initiatives (or use discretion) to utilize new opportunities to our advantage, over and above what was either explicitly or implicitly promised” (Blois, 1999: 199). Trust thus becomes more than merely “[...] a negative promise not to harm the interests of the other party” (Hosmer, 1995: 392).

As a *third dimension* of trust, researchers, such as Busch & Wilson (1976), Copeland & Griggs (1986), and Mayer & Davis (1999) and practitioners identify the importance of ‘*competence*’. Trust in social exchange situations not only means that the opposite party is expected to support – or at least not obstruct – our goal achievement; it also includes the belief that the partner is actually capable of doing so. Trusting thus implies that the opposite side is regarded as having certain competences and resources which increase the likelihood that our goals for the IJV are achieved (Wicks, Berman, & Jones, 1999). These competences and resources may include management-know-how, technology, contacts to government departments, etc.

After analysing the dimensions of trust, the question “*Who trusts whom?*” in IJVs has to be answered. Whereas socio-psychological research views trust as the characteristic of an *individual*, studies on IJVs examine the trust between *organisations*. Many authors do not

account for the differences between these perspectives and – when analysing trust between companies – refer to research that has its focus on inter-personal trust without giving reasons for this transfer (Dwyer, Schurr, & Oh, 1987, Wicks, Berman, & Jones, 1999). However, these authors have to accept the criticism of anthropomorphising organisations, i.e. transferring human characteristics to non-humans, in our case (partner-) companies, which Rousseau (1985) calls a cross-level fallacy. Therefore other researchers, such as Blois (1999), Dyer & Chu (2000), Child & Faulkner (1998), and Aulakh et al. (1996) argue that the existence of trust is possible only on the individual level: the statement that ‘a company trusts’ is seen as an abbreviation of the statement “one or more managers of this company trust” (Blois, 1999: 203). Similarly, Child & Faulkner (1998: 56) argue that “[...] the trust that can be said to exist between the organizations will to a large extent come down to the quality of mutual trust that exists between [...] individuals”: Hence, in this perspective, it is not companies that trust; more accurately, trust refers to “[...] the extent to which there is a collectively-held orientation by organizational members toward the partner firm” (Zaheer, McEvily, & Perrone, 1998: 143). This notion is reflected in attempts to grasp the concept of ‘organisational trust’ in empirical studies, in which the perception of trust held by one or more representatives of an organisation is normally used as a proxy for the ‘collectively-held orientation’ of the employees/managers of an organisation. This, however, presumes the representativity of the perceptions of single managers (Blois, 1999), i.e. that from their views inferences can be made concerning the level of trust held by other managers of the organisation in question. In order to ensure this representativity, Inkpen & Currall (1997) suggest that the chosen managers should (1) be familiar with the development of the IJV and (2) have a non-trivial influence on the shape of the inter-firm relationship. These demands are generally best met by managers, who occupy so-called boundary spanning roles, i.e. in particular, general or vice general managers. Due to the extensive knowledge these managers have regarding the relationship and their significant potential to influence it, the level of trust held by these managers can be seen as an adequate indicator for the trust existing between IJV partners.

In contrast to ‘giving’ trust, the recipient of trust does not necessarily have to be an individual. Luhmann (2000), for instance, distinguishes between person- and system-trust. Whereas person-trust is aimed at individuals, system-trust refers to the trust in abstract systems of relationships. Thus, organisations can be recipients of trust. Equally, existing research on inter-firm co-operations, frequently views companies as entities which can receive trust (Buckley & Casson, 1988, Madhok, 1995). For our purpose, trust can therefore exist towards the representative of the IJV partner as well as towards the partner company as a whole.

To sum up, in this study trust is seen as consisting of the three elements: integrity, benevolence and competence. If company A trusts company B, A assumes that (i) B sticks to

agreements (integrity), (ii) B refrains from acting opportunistically and has an active interest in A achieving its goals (benevolence), and (iii) B is capable and has the resources to support A in achieving its aims (competence). Additionally, it is assumed that company A can (dis-) trust the representatives of company B as well as company B as a whole. Finally, we believe that the ‘collectively-held orientation’ of managers of company A towards B can be inferred from the perceptions of the individual representatives of company A.

2.3. Conceptualising Interaction in IJVs

In order to analyse the interdependency between the characteristics of the interaction on the one hand and the levels of trust and control on the other, the interactions occurring between the partner firms have to be conceptualised adequately. So far, only a small number of studies has analysed the interaction processes that take place between the partners in alliances (Kumar & Nti, 1998, Reuer, Zollo, & Singh, 2002, Ring & Van de Ven, 1994, Zajac & Olson, 1993). Other authors have produced case studies which provide an insight into the dynamics of alliances, but without suggesting a concept of interaction (Arino & de la Torre, 1998, Doz, 1996). Doz (1996), for example, states that with the start of the negotiations a dynamic process of interaction starts without giving any indication as to what these interactions look like. Similarly, Luo (2002: 903) states regarding the interactions within strategic alliances, that this “process is an evolving mechanism for ensuring reciprocal dependency and strategic flexibility under uncertain conditions, and is largely manifested in inter-partner cooperation that affects trust building and success of joint ventures”. Thus many researchers stress the importance of the processes taking place within strategic alliances, but fail to provide any detail as to the nature of these processes that go beyond labels such as processes of co-operation.

JVs can be regarded as constituted through the interaction between the participating firms, i.e. without interaction between the firms there would not be a JV and thus the interaction is a prerequisite for the existence of an IJV. From a system theoretical point of view, the system JV maintains the boundaries between itself and its environments through the fact that the number (and variety) of interaction episodes between the partner firms is higher than the number of interaction episodes between each of the partners and other systems (Luhmann, 1996). From a socio-psychological perspective, interacting means that the acts of one partner have influences on the other partner, and that the acts of one partner lead to changes in the acts or the behaviour of the other partner (Hinde, 1997).

A majority of existing studies that attempted to conceptualise interaction between economic actors originated in the area of industrial marketing, where researchers conceptualise and analyse the interaction between buyers and suppliers in commercial

transactions (Axelsson & Easton, 1994, Gemünden, 1999, Heide & Miner, 1992). In order to conceptualise interactions in that context, Turnbull & Valla (1986) suggest distinguishing between the content of interaction, the interaction process, the interaction atmosphere, and the interaction context. A first approach to analyse interactions in IJVs has been suggested by Schuchardt (1994). He distinguishes the communication between individuals or organisations, the transaction as the material exchange between individuals and organisations, as well as the co-action, which he defines as shared acting towards a common goal.

This study has arrived at a conceptualisation of interaction by recurring on the existing research in industrial marketing mentioned, and by complementing this with information gathered through the in-depth interviews carried out with German and Chinese managers of GCJVs. On the basis of these approaches and information from the interviews, we conceptualise and analyse interaction in IJVs using the following three facets of interaction:

- **Exchange.** The exchange of (material or immaterial) resources or of access to such resources can be regarded as the *raison d'être* of JVs. Firms engage in JVs in order to acquire or access the partner firm's resources by providing or allowing access to its own resources in return. Without the expectation of such an exchange of resources firms will not engage in JVs. Among the resources exchanged between the partners are capital, modern technology, proprietary information, and knowledge of the local market.
- **Communication.** Interaction in IJVs is not limited to exchange processes; rather, exchange processes are complemented by the need to co-ordinate the actions between partners and decide about the allocation of partners' resources to achieve the shared objectives in the best possible way. This requires extensive communication between the partners, which a large number of managers interviewed for this study regarded as one of the major problems within the interaction between the partner firms.
- **Adjustment.** There are differences between the partners of an IJV, for instance, in terms of company culture or the approach to managing specific functional areas. While such differences can negatively affect the co-operation in purely national JVs as well, it is likely that these differences are more pronounced in cases in which there is a high degree of cultural distance between the partner firms. Since these differences impinge on the successful cooperation between the partners, (mutual) adjustment processes have to take place between the partners besides exchange and communication processes.

3. The role of interaction in the relationships between control, trust, and performance

In the following, the three facets of interaction which have been identified in the previous section are discussed in terms of their interdependency with control, trust, and the performance of IJVs.

3.1. Exchange of resources and information

Many JV managers interviewed for this study viewed *control* over the exchange of resources and the ability to access the partner firm's resources as paramount to the success of the IJV. For these managers exerting control was seen as necessary to make sure that the partner provided the resources that had been agreed in the IJV contract. More importantly, however, control was seen as required to ensure that no unintended leakage/use of the firm's own resource to the partner took place and the partner firm's access to its resources was monitored and restricted to the degree that had been agreed between the firms. Thus, it seems likely that higher degrees of control are associated with lower levels of exchange of (material and immaterial) resources in IJVs.

The relationship between the level of *trust* and the extent to which exchange of resources takes place between partners can be expected to be positive. It can be argued that the existence of trust between the partners is conducive to the level of exchange. Partners are more willing to provide resources and allow access to their resources, if they trust their partner and thus perceive a comparatively lower risk of misappropriation of these resources by the partner, and also expect that existing imbalances in the exchange between the partners are temporary. McEvily, Perrone, & Zaheer (2003: 93) argue that "trust motivates actors to contribute, combine, and coordinate resources toward collective endeavours. For example, by increasing openness in knowledge transfer and by speeding the circulation of knowledge, trust facilitates cooperation and joint problem solving." Similarly, Iles & Yolles (2002: 628), in analysing the prerequisites for organisational learning through JVs stress this link between the exchange of resources and trust when they argue that "IJVs provide many opportunities for organizational learning, especially the transfer of culturally embedded knowledge if trust is developed and substantial non-contractual inputs, including HR inputs are invested." In a similar vein, Huff & Kelley (2003) state that one of the roles of trust in inter-organisational settings is to "promote the exchange of information.", which was regarded as an important resource in that context. In their empirical analysis of buyer-supplier relationships Dyer & Chu (2003) found that perceived trustworthiness was associated with greater information sharing. Providing resources and allowing access to resources is, on the other hand, a signal

for a firm's commitment to the JV and the partner and thus a strong force in the development of trust between the partner firms.

Finally, a positive relationship can be expected between the level of exchange of resources between the partners and the *performance* of the IJV. Like the argumentation above, the relationship between the level of exchange of resources and performance is likely to be bi-directional. On the one hand, an increased level of exchange of resources can be assumed to be conducive to IJV performance, as the achievement of the partners goals, which - qua existence of the JV – require the combination of the partners' resources, is more likely. On the other hand, firms' dissatisfaction with the performance of the IJVs may lead them to restrict the contribution of, or the opposite side's access to, their resources. However, it has to be borne in mind that many managers equated an imbalance in the volume and quality of resources exchanged between the partners as detrimental to the performance of the JV.

3.2. Communication

Control in the sense of monitoring involves the communication and therefore leads to an increase in communication. However, control in the sense of influence on the JV's activities vis-à-vis the JV partner reduces the level of communication, since one partner controls the activity and there is little need for communication about the way the activity should be carried out. In these cases, communication may be reduced to (ex post) justifications of why specific actions have been taken by the partner in charge. A lack of communication and the occurrence of misunderstandings, on the other hand, increase the perceived uncertainty of the firms regarding the respective partners. This increased uncertainty in turn may cause firms to heighten their efforts to exert control over the JV's activities.

Extant research as well as anecdotal evidence suggests that communication is a crucial element in the development of *trust* between partner firms (Anderson & Weitz, 1989). Similarly, Kanter (1994) and Larson (1992) stress the importance of an improvement in communication for the creation of trust. Communication increases transparency of the partners' agendas and contributes to avoiding the existence of 'hidden agendas'. Communication allows partners to get to know each other better, which enables them to more accurately envisage the opposite's future behaviour. Communication furthermore facilitates comparisons between words and actions of the partner, and thus allows firms to make inferences about the trustworthiness of their partner. Finally, Aulakh et al. (1996) see the positive effect of communication on the level of trust in the fact that partners' perceptions and expectations are aligned, which is seen as conducive for the development of trust.

Finally, it can be argued that communication is positively associated with the *performance* of the JV, as it improves the coordination between the partners in their pursuit of shared

objectives and also allows them to identify and minimise inefficiencies (see also, Dyer & Chu, 2003). Furthermore, ongoing communication allows quick and informal dealing with problems caused by the different approaches and cultures of the partners. This prevents the accumulation of problems which negatively affect the relationship between the partners as well as the performance of the IJV.

3.3. Adjustment between the partners

The analysis of the interviews has shown that high levels of *control* are usually associated with a low inclination of firms to adjust their approaches/methods, etc. to the (explicit or implicit) requirements of the partner and/or the JV. Similarly, Yan (2000) argues that the desire for control leads firms to try to implement their own methods and administrative processes in the IJV. Through exerting control and keeping to its own practices, firms intend to increase the likelihood that its own and the JVs objectives are reached.

Empirical studies into the development of *trust* in supplier-buyer relationships have shown that adjustments have a positive effect on the level of trust in exchange relationships (Aulakh, Kotabe, & Sahay, 1996, Hakansson, 1982). A similar association between adjustment and trust was reported by some of the managers interviewed for this study. A firm's willingness to adjust to the needs of the IJV and/or the partner signals benevolence and increases trustworthiness in the eyes of the partner. Similarly, Heide & John (1992) suggest that adjustment leads to the development of trustworthiness in buyer-supplier relationships and for the case of IJVs, Beamish (1988), as well as Tomlinson (1970) argue that a co-operative attitude – which includes the ability and willingness to adjust – is a necessary condition for a high level of trust between JV partners. Furthermore, adjustment by partners can be regarded as a sign of commitment to, and an interest in, the long-term development of, the JV relationship and thus be conducive to the development of trust between the partners.

Adjustment, i.e. the willingness of firms to modify their approaches to managing specific issues or functional areas is necessary if the best approach for a given situation is to be selected. It can be assumed that differences between partners are more marked in international JVs as compared to JVs between partners from the same national and cultural background. As these differences can be expected to cause friction between the partners they are likely to be detrimental to performance, and high levels of adjustment are therefore conducive to JV *performance*.

4. Method, empirical basis and measures

In order to empirically explore the interdependencies between the variables, a *two stage research design* was chosen. During the *first stage*, in-depth interviews were carried out with

27 German and Chinese managers. As suggested by Parkhe the need for more qualitative analyses results from the “lack of a strong theoretical core or an encompassing framework” (1993: 227) for examining IJVs. Interviews were used to gather information regarding the nature of the relationship in question and to enrich theoretical arguments. Information gathered through the interviews was furthermore used to specify the measurement model presented in the subsequent chapter. I used these interviews to help in developing the measurement constructs for the variables.

In addition to the qualitative research, a *second stage* consisted of a questionnaire survey to allow for a quantitative exploration of the relationship in question. To this aim, questionnaires were sent to 392 German-Chinese IJVs in the People’s Republic of China, of which 110 usable responses were received (response rate 23.3%). By comparing early and late arriving responses, the possibility of a non-response bias was dispelled (Armstrong & Overton, 1977).

Sixty (54.5%) of the questionnaires were filled in by non-Chinese representatives of the German side, 16 (14.5%) by Chinese representatives of the German side and 34 (30.9%) by Chinese representatives of the Chinese side. Seventy-three (66.4%) respondents held the position of General Manager, 24 (21.8%) were Vice General Managers and 10 (9.1%) functional managers. One respondent was chairman of the board, whereas three respondents (2.7%) did not give information as to their position in the IJV. On average, respondents have been working for the IJV for four years. From the respondents’ positions and their experience it was assumed that all were familiar with the relationship between the IJV partners.

Most researchers agree that *IJV performance* is a multivariate construct that cannot be represented by one single indicator. At the same time there is little agreement as to how this/these indicator(s) should be measured in empirical studies. Whereas some authors suggest using ‘objectively’ available indicators, such as profitability, others argue for a ‘subjective’ measurement, which is argued to better take into account different expectation levels of the JV partners. In this study, IJV performance will be used as the subjective satisfaction of partner firms with a series of variables reflecting the short-term and long-term performance of IJVs. More specifically, IJV performance was measured in accordance with the differentiation of performance indicators in goal-criteria and systems-criteria, as well as the latter’s split into short-term and long-term criteria. The managers were asked to evaluate the extent to which they saw their respective partner firm’s goals as achieved, and their satisfaction with a series of indicators that were identified in a series of interviews conducted for this study. For all items 5-point Likert-type scales were used. On the basis of a factor analysis two factors were identified from among the remaining performance items: the first included profitability, growth, and market share. The second included technological level, stability of the JV, the quality of the relationship with the partner, and the competitiveness of the IJV. The first construct was labelled ‘hard’ performance (alpha 0.89), the second one ‘soft’ performance (alpha 0.80).

In order to measure the extent to which partners exert *control* over the JV's activities, two constructs were used. The items for these constructs were taken from existing empirical studies of the control in IJVs and complemented with items identified in the interviews with German and Chinese managers to ensure that items are chosen which are relevant for managers. In order to measure strategic control 4 items were used (alpha 0.87). For the level of operative control 11 items were used that reflect the extent to which partners exert control over operational matters (alpha 0.96). For all items, 5-point Likert-type scales were used.

Mayer et al. (1995) and Mayer & Davis (1999) suggested various items to measure the three *trust* dimensions integrity, benevolence and competence. From these items, those with the greatest explanatory power as evidenced in the empirical analysis of Alberternst (2001) were chosen. The selected items were measured using 5-point Likert-type scales. As these studies examined trust *within* organisations, the items to measure the three dimensions of trust were modified using information from the interviewees to account for the focus on inter-organisational trust. To account for the two levels of trust – 'manager vs. manager' and 'manager vs. partner company' – the items were used with reference to the representative of the partner company as well as with reference to the partner company as a whole. Using both levels of trust furthermore allows for triangulating the measurement of trust (Nunnally & Bernstein, 1994). The reliability for the constructs was 0.86 in both cases (Cronbachs Alpha) and thus above the acceptable level of 0.7 suggested by Nunnally (1978).

The constructs to measure the *exchange* consisted of five items which referred to the level of exchange of (material) resources and information between the partners (alpha 0.81). In order to measure *communication* we used three items reflecting the intensity, openness, and efficiency of the communication (alpha 0.82). In order to measure the *level of adjustment* of the IJV partners, we asked the managers in a first series of questions to evaluate the extent of the *existing differences* between their own firm and the partner regarding the way 11 functional areas should be run (alpha 0.91). In order to measure the level of *adjustment*, respondents were then asked to estimate the level of their company's adjustment in the 11 functional areas to the requirements of the partner/IJV (alpha 0.95). In both cases 5-point Likert-type scales were used from "1" no difference/no adjustment, to "5" large differences/high degree of adjustment. The overall measure for adjustment was then constructed by multiplying the level of perceived difference with the level of adjustment. The level of perceived differences between the partners is thus used to weigh the level to which partners adjusted themselves.

5. Results and discussion

Because most of the relationships described above are expected to be bi-directional, methods such as regression analysis or SEM are not adequate. Thus, in this paper a different method is used that has been successfully used in research in IJVs before (see, for example, Merchant, 2000). The cluster analysis, in general, allows the analyst to find out if it is possible to combine objects which are described by various characteristics into groups, with the objects within groups showing a high degree of similarity and objects in different groups showing little or no similarity (Backhaus, Erichson, Plinke, & Weiber, 2000). The dimensions performance, the level of operational and strategic control, trust, as well as the three interaction variables, were included as dimensions.¹ The cluster analysis makes it possible to identify different types of JVs which differ significantly along all the dimensions used. The underlying assumption is that there exist different types of GCJV which differ significantly along one or more of the described variables. As was outlined above, the idea was to allow for the emergence of a more holistic picture of the interdependencies between the variables discussed. Most interesting of course would be the question of whether there is a clear distinction between successful and less successful GCJVs which also differ significantly along other dimensions. Thus we use the cluster analysis as a tool for an exploratory analysis of our data, which does not intend to test a typology; rather it is used to identify a taxonomy of IJVs (Scherer & Beyer, 1997). The results of the cluster analysis are shown in the following table. The analysis resulted in two clusters that differ significantly along all of the dimensions used.²

¹ No z-transformation was carried out as all variables were measured on 5-point Likert-type scales. We used the Ward method for the Cluster-analysis which tends to result in clusters of similar size (Backhaus et al. 2000).

² The number of allocated cases is higher than the number of JVs since for 19 JVs both partners' representatives filled in and returned a questionnaire. However, since all variables were measured using subjective evaluations by the respondents in these cases both questionnaire were used for data analysis.

Table 1. Taxonomy of German Chinese Joint Ventures (I)

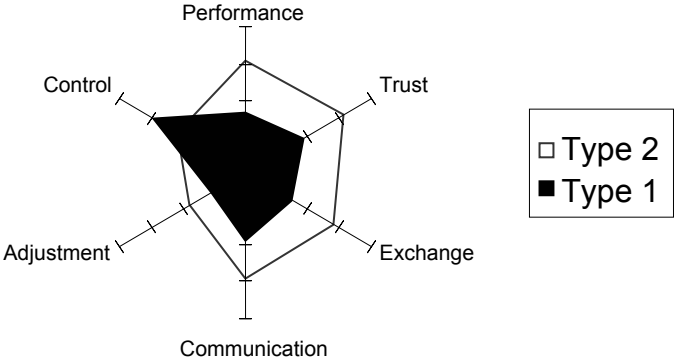
| | TYPE 1 (N=50) Mean | TYPE 2 (N=53) Mean |
|-----------------------------|-----------------------|-----------------------|
| Performance | | |
| Goal achievement | 2,45 | 4,07 |
| Short-term performance | 2,46 | 4,06 |
| Long-term performance | 2,96 | 4,11 |
| Control | | |
| Strategic control | 3,85 | 3,00 |
| Operational control | 3,99 | 3,30 |
| Trust | | |
| Trust in partner firm | 2,66 | 4,06 |
| Trust in partner management | 2,93 | 4,15 |
| Interaction | | |
| Exchange | 2,49 | 3,79 |
| Communication | 2,88 | 3,91 |
| Adjustment | 2,10 | 2,73 |

Since cluster analysis maximises differences between clusters, all differences are significant on the 1% -level.

The second group of GCJVs (N=53) scores higher in all performance dimensions as compared to the GCJVs in the first group (N=50). The following chart depicts the identified types as web diagrams, in which (for reasons of better display) the values for the performance, control, and trust variables were averaged.

Managers representing GCJVs of type 2 reported a lower degree of control over the JV than managers of a type 1 JV. The former also show a higher level of trust towards both the partner firm as a whole as well as to the counterpart managers of the partner firm. This may be interpreted by the fact that trust has a positive influence on performance whereas control has a negative impact. At the same time the reverse arguments may apply, i.e. high performance leads to higher levels of trust and to lower levels of control. In addition, managers who regard their JV as successful also show significantly better evaluations of the interaction elements exchange, communication and adjustment. This also corroborates the tentative reasoning above, according to which trust is related to higher levels of exchange and communication as well as a higher willingness of partner firms to adjust their business practices in order to achieve shared, rather than merely private, goals.

Chart 1. Taxonomy of German Chinese Joint Ventures (II)



Further insight into the existing interdependency can be gained from the correlation matrix between the variables which is shown in Table 2 (Appendix). It can be seen that whereas the trust measures are associated with the performance constructs on a high and statistically significant level ($p \leq 0.01$), all the relationships between the control constructs and the performance constructs are negative, though only the association between the level of strategic control and the long-term performance is negative on statistically significant level ($p \leq 0.05$). Although – as discussed above – no causal relations have been tested, these results certainly merit further scholarly attention. As regards the relationships between the level of control and the interaction dimensions, the correlation matrix in Table 2 shows strong and statistically significant negative relationships³, supporting the main thrust of the argumentation above that exerting control can have detrimental effects on the interaction between the partners, and that firms may compensate a lack of interaction by exerting a greater degree of control over the JV activities. Table 2 furthermore shows that positive and statistically significant coefficients for the relationships between trust on the one hand and exchange and communication on the other hand, lending support for our reasoning above. However, the relationship between the trust constructs and the adjustment of partner firms – although positive – was not statistically significant. On the basis of these results, it can be argued that high levels of trust parallel high levels of exchange and communication between the partners (again, no uni-directional causality is implied). Finally, the table shows that the interaction facets exchange and communication are positively associated with performance on statistically significant levels ($p \leq 0.01$), whereas there are no significant relationships between the level of adjustment and IJV performance. These latter results imply that it is in particular the elements exchange and communication which play a crucial role in the link between trust, control and performance.

Overall, the results of the cluster analysis can be seen in relation to the idea of ‘dominant organizing principles’ as, for instance, discussed by McEvily, Perrone, & Zaheer (2003). These authors suggest that “Organizational forms are the outcome of the workings of dominant organizing principles and, in theory, should have different characteristics depending on the underlying principle. A form where trust is the dominant organizing principle should have a different structure and set of behaviours than a form where authority or price predominate.” For the case of the German-Chinese JVs analysed in this study two organizational forms were identified that differ significantly along the dimensions, included.

³ With the exception of the association between the level of control and the level of exchange which is negative but not statistically significant.

6. Conclusions and limitations of the study

Although many authors have stressed the importance of control and trust for the performance of IJVs, there is a lack of empirical evidence explaining the interrelatedness between control, trust, performance and the interaction between the JV partners. Against this background, the results of this exploratory study shed some necessary light on the interactions between partners in their relation to control, trust and performance. Based on a discussion of the potentially existing interdependencies between these variables, a cluster-analysis allowed deriving a taxonomy of German-Chinese JVs consisting of two types of JV which differed regarding the variables included. The results of the cluster analysis have generated valuable insights into the complex net of interrelationships between trust, control, interaction and performance. They contribute to the existing (empirical) body of research in the area of IJV management by shedding some light on the mechanisms that link trust and control on the one hand to the performance of JVs on the other side, and vice versa.

This study is, however, only a first, exploratory attempt and future studies in this area seem warranted. Longitudinal studies seem to be particularly useful to enhance our understanding of the consequences of control and/or trust for the interaction between the JV partners and the JV performance, as well as for the reverse effects from performance to interaction to the level of control/trust. It also has to be taken into account that the variables used so far do not constitute a 'closed system' and other factors certainly play important roles in influencing the performance, interaction, etc. in IJVs. Future studies should therefore attempt to include additional variables such as the length of the JV relationship for instance.

A further drawback of the study is that the variables have not been chosen on the basis of a coherent theoretical framework. So far, due to the lack of a clear theoretical underpinning research into the IJVs – with the possible exemption of the motives for JV formation – has not been theory-driven. Developing such a comprehensive theoretical framework would allow a theory based justification of the selection of variables which would be both deemed as important by JV managers and able to account for the complexities of JV management.

7. Appendix

Table 2: Correlation Matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------|--------|--------|--------|---------|---------|--------|--------|--------|-------|----|
| Performance | | | | | | | | | | |
| 1. Goal achievement | 1 | | | | | | | | | |
| 2. Short-term performance | .834** | 1 | | | | | | | | |
| 3. Long-term performance | .581** | .647** | 1 | | | | | | | |
| Control | | | | | | | | | | |
| 4. Strategic Control | -.117 | -.187 | -.217* | 1 | | | | | | |
| 5. Operational Control | .048 | -.041 | -.047 | .577** | 1 | | | | | |
| Trust | | | | | | | | | | |
| 6. Partner | .351** | .428** | .605** | -.403** | -.265** | 1 | | | | |
| 7. Manager | .309** | .420** | .630** | -.324** | -.165 | .860** | 1 | | | |
| Interaction | | | | | | | | | | |
| 8. Exchange | .332** | .420** | .558** | -.435** | -.182 | .777** | .713** | 1 | | |
| 9. Communication | .339** | .401** | .622** | -.350** | -.234* | .728** | .657** | .732** | 1 | |
| 10. Adjustment | .093 | .098 | .45 | -.490** | -.461** | .203 | .137 | .212* | .263* | 1 |

* p≤0.5; ** p≤0.01

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