# POWER DISTANCE IN INFORMATION SYSTEMS OFFSHORING PROJECTS – A CONTROL THEORY PERSPECTIVE

*Completed Research Paper*

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## Abstract

*Controlling IS offshoring projects is a great challenge because of the inherent uncertainty of such projects. In such settings, informal controls are assumed to become increasingly effective. However, still little is known about the factors that influence the effectiveness of informal controls. We argue that the vendor manager's power distance orientation—a key cultural construct that reflects beliefs about status, authority, and power in organizations—represents a missing antecedent of informal control effectiveness. Analyzing data from 57 client-vendor matched pairs, we found that high power distance on the part of the vendor manager negatively impacts project performance but at the same time positively moderates the relationship between self-control and performance.*

**Keywords:** IS project control, informal control, power distance, IS offshoring

## Introduction

Exercising control is essential for the success of information systems (IS) projects (Gopal and Gosain 2010; Kirsch 2004; Tiwana and Keil 2009). Here, control is defined as any attempt to motivate individuals to achieve desired objectives, and can be exercised via formal and informal control mechanisms (Kirsch et al. 2002). Formal controls rely on adherence to performance standards or prescribed processes; informal controls rely on social or norm-emphasizing strategies (Kirsch 1997). While formal mechanisms often dominate the control portfolio, there is also strong consensus on the importance of informal control mechanisms (Jaworski 1988; Kirsch 2004; Kohli and Kettinger 2004).

Complementing formal with informal controls becomes particularly important in the context of globally distributed projects (Kirsch 2004), such as IS offshoring projects. In this context, cultural, geographical, language, and time zone differences come into play (Mahnke et al. 2008; Tiwana and Keil 2009) and significantly increase uncertainty. Under such conditions of uncertainty, it is hard to exercise formal control because of the difficulty to (formally) specify desired individual behaviors and measure individual contributions to project outcomes with adequate precision (Kirsch et al. 2010; Ouchi 1979). For example, observing vendor behavior is often difficult and very costly in (offshore) outsourced projects because of the significant distance between the client and the vendor (Dibbern et al. 2008) and the relative absence of preexisting information channels (Choudhury and Sabherwal 2003). Furthermore, the control relationship between client and vendor often takes on a lateral rather than a hierarchical form (Tiwana 2010; Tiwana and Keil 2007). Thus, the client may not have a formal position of authority over the vendor. This lack of formal authority may prevent the client from exercising formal control, and instead lead to an increased reliance on informal control (Kirsch et al. 2002).

Despite the criticality of informal control in driving IS offshoring projects, research on the effectiveness of informal control in (offshore) outsourced IS projects has produced mixed results. For example, while Tiwana and Keil (2009) found that clan control does not influence performance in outsourced projects, Gopal and Gosain (2010) observed a significant effect of clan control on performance. The inconsistency of these results may be traced back to hidden moderator variables. According to Tiwana (2010), culture may be one key variable moderating the effectiveness of informal control. This is because important antecedents of informal control effectiveness, such as shared values, beliefs, and traditions (Ouchi 1979; Tiwana and Keil 2009) also constitute fundamental aspects of culture.

Prior literature has identified a number of cultural values. One important cultural value is power distance, which describes the extent to which individuals accept unequal distribution of power in institutions and organizations (Hofstede 2001). Power distance has a more theoretically direct relationship to control issues than other cultural values because it deals with central control aspects, such as beliefs about status, authority, and power in organizations (Kirkman et al. 2009). For example, results from prior literature suggest that informal ways of control may be effective for individuals with a low power distance orientation but ineffective for those with a high power distance orientation (Newman and Nollen 1996). Thus, an interesting theoretical and empirical question is how power distance influences the effectiveness of informal control.

The context of our study is IS offshoring projects. At this point, it is important to note that in such projects usually the client manager does not have direct control over the vendor project team (Choudhury and Sabherwal 2003). Instead, the client project manager (tier 1) executes control over the vendor project manager (tier 2), who in turn controls the vendor project team (tier 3) (Kirsch et al. 2002). The vendor project manager's role includes boundary spanning, gate keeping, and mediating activities, and therefore represents a key role in managing IS offshoring projects (Mahnke et al. 2008). Similarly, Rai et al. (2009) argue that the vendor project manager "plays a critical role in the overall management and ultimate success of offshore IS projects" and that her/his "cultural values are indeed important" (p. 635). Thus, for the specific focus of this study, we concentrate on the client project manager (controller) and the vendor project manager (controllee) of this three-tier control system, and argue that particularly the vendor project manager's power distance orientation becomes a crucial factor for the successful implementation of informal controls in IS offshoring projects. Furthermore, we also investigate the direct relationship between the vendor manager's power distance orientation and IS offshoring project performance. This is because the ability of the client manager to make effective decisions highly depends on the vendor

manager's communication of critical information, which, in turn, is influenced by the vendor manager's power distance orientation (Botero and Van Dyne 2009).

In the next section, we briefly introduce control theory, review prior literature and develop the research model and hypotheses. Subsequently, we explain the research methodology and present our empirical data analysis results. We conclude by discussing the paper's findings and implications.

## Research Background and Hypotheses

Control theory distinguishes between formal and informal control. Formal control involves the specification and evaluation of behaviors or outcomes, coupled with appropriate rewards or sanctions (Ouchi 1979). Informal control is social or people-based, focusing on the role that individual or group norms and values play in the exercise of control (Ouchi 1979), and is typically divided into clan and self-control.

Clan control operates when behavior is motivated by shared values and norms and a common vision, and individuals display a great deal of goal congruence, and "solidarity" and "regularity" in their relations with others by behaving in a manner that is consistent with agreed-upon behaviors (Ouchi 1979). Here, rewards and sanctions are based on whether individual members act in accordance with group values, norms, and objectives (Kirsch et al. 2002). Examples of clan controls include socialization (e.g., dinner meetings, games, social events) and trainings (Kirsch 1996; Kirsch et al. 2002). In our study, we view clan control as the mechanisms the controller uses to cultivate an environment around the controllee for aligning behaviors and project goals in a way that shared values and norms supportive to a project are retained and reinforced, while norms that obstruct the project are prevented (Chua et al. 2012).

Self-control is consistent with the definition of self-management: individuals set their own goals, monitor their own work, and reward or sanction themselves accordingly (Kirsch 1996). Thus, control mechanisms supporting self-control are primarily implemented by the individual controllee (Choudhury and Sabherwal 2003). However, prior literature (Choudhury and Sabherwal 2003; Kirsch et al. 2002) suggests that controllers can encourage others to exercise self-control by appropriately structuring the work environment. This perspective takes into account Kirsch's (1996) observation that controllers may need to intervene to ensure that controllees engage in self-control. For example, the controller could help redesign the vendor's internal system testing procedures, thereby improving the controllee's ability to exercise better internal control (Choudhury and Sabherwal 2003).

### *Informal Control and Project Performance*

Clan control is particularly important in complex, multi-stakeholder projects (Chua et al. 2012) because it facilitates cooperation among stakeholders, and thus is expected to positively affect project performance. Clan control is also critical in projects with high uncertainty (Kirsch et al. 2002; Kirsch 2004; Kohli and Kettinger 2004) and projects where outcomes are unclear and behavior is hard to specify (Ouchi 1979). This is particularly true for IS offshoring projects, which strongly rely on cooperation and collaboration. Here, developing and reinforcing a collaborative culture are key for achieving project success. A collaborative culture ensures that project members can leverage the specific competences and skills of each member for relevant project tasks (Gopal and Gosain 2010). With clan control operating, project members will also be more open to expose their individual work outcomes to scrutiny by other members, ultimately improving project quality (Gopal and Gosain 2010). Clan control also fosters continuous communication flows and bilateral knowledge transfer (Kirsch et al. 2010)—important determinants of IS offshoring project success (Remus and Wiener 2009).

IS offshoring projects usually involve carefully screened vendors with proven skills and expertise. Thus, providing the controllee with autonomy in managing the project, i.e., creating an environment where the controllee can effectively exercise self-control may be beneficial for achieving positive project outcomes. For example, it was found that promoting self-control and assisting individuals in the exercise of self-control through training significantly enhances individual and organizational performance (Druskat and Wheeler 2003). Moreover, in their study on outsourced IS projects, Choudhury and Sabherwal (2003) observed that assisting controllees in exercising self-control is a common response by controllers when faced with performance problems.

Although the importance of informal control is widely recognized, research on the effectiveness of informal control in interorganizational projects has so far produced mixed results. For example, Gopal and Gosain (2010) observe a positive link between clan control and project effectiveness, and a negative link between clan control and project efficiency. In contrast, Liu et al. (2008) find a positive link between informal control and efficiency in outsourced projects (informal control was modeled as a second-order factor that includes clan and self-control as latent constructs). Another study by Tiwana and Keil (2009) suggests that clan control does not influence performance in outsourced projects. They also find that self-control (in terms of controllee-driven noncontrolling) increases performance in internal projects but decreases performance in outsourced projects. These inconsistent or even conflicting results may not only be traced back to different construct operationalizations but also to hidden variables moderating the relationship between informal control and project performance. As discussed above, one of these potential moderating variables is power distance.

### *Direct Effect of Power Distance on Project Performance*

Power distance refers to the extent to which inequality among persons in different positions of formal power are viewed as a natural (and even desirable) aspect of the social order (Hofstede 2001). Even though power distance is seen as a collective phenomenon, it can only manifest itself through the individual (Straub et al. 2002) and then be aggregated to the collective. Prior research has also argued that there is substantial within-culture variation in value orientations arising from regional, ethnic, religious, and generational differences (Hofstede 2001). In line with prior research (e.g., Rai et al. 2009), we therefore argue that individuals espouse power distance values to differing degrees, and treat power distance as an individual difference variable. The research model is shown in Figure 1.

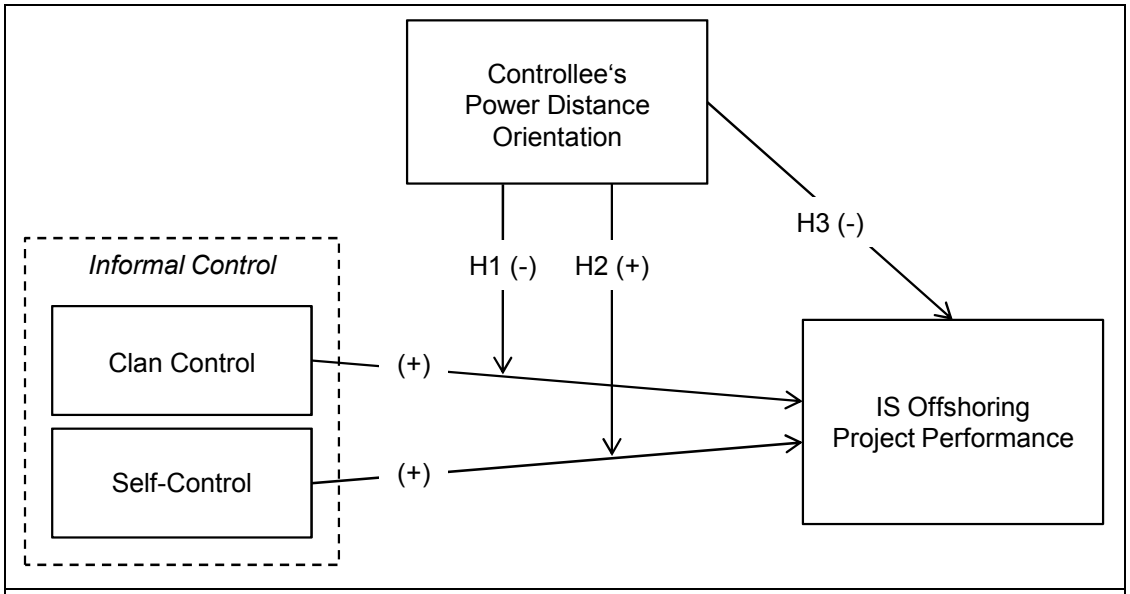


**Figure 1. Research Model**

Individuals with high power distance orientation display great respect for those in superior positions and accept the view that responsibility for and authority in decision making is vested in the hands of superiors (Javidan et al. 2006). They also believe that those who are more senior in the hierarchy are more knowledgeable and experienced than the rest (Hofstede 2001). Therefore, it is likely that controllees with high power distance orientation will view controllers as those who are at a higher status level. A related assumption of high power distance individuals is that those who are higher in status are less willing to share and seek views from those who are lower in status. Thus, controllees are likely to feel less comfortable raising criticism and questions, or seeking feedback from the controllers even though they realize that the project is at risk or starts drifting. This is in line with Keil et al. (2007), who found that

individuals with high power distance orientation are less willing to report bad news about a project and its status than those with low levels of power distance orientation. Similarly, Botero and Van Dyne (2009) found that individuals with high power distance orientation are less likely to express constructive ideas, information and opinions for change to supervisors. In addition, De Luque and Sommer (2000) argue that for individuals with high power distance orientation, seeking feedback might be interpreted as an indirect criticism of the superior. Therefore, feedback is likely to be conveyed through a top-down process that is less information rich (De Luque and Sommer 2000). In contrast, in low power distance environments the decision-making process is more democratic and subordinates feel comfortable to participate in decisions that concern them (Adler 1997). A low power distance orientation also permits greater cooperation across groups and helps create a problem-solving environment (Couto and Vieira 2004). All of this suggests that the controllee's power distance orientation is a key factor in determining the way in which she or he communicates with the controller. The controllee's communication behavior, in turn, has a strong impact on project performance. For example, Tushman and Katz (1980) found that project performance is strongly influenced by the external communication of gatekeepers (such as vendor project managers). Similarly, Iacovou et al. (2005) found that upward communication strongly affects IS project performance. Finally, the establishment of a continuous communication flow between client and vendor has been identified as a key factor for the successful implementation of IS offshoring projects (Remus and Wiener 2009). We therefore expect that controllees with a low power distance orientation will proactively exchange information and establish stable communication channels with the controller, thereby positively influencing IS offshoring project performance. By contrast, high power distance behavior of the controllee may hamper communication and lead to decisions based on incomplete information and ultimately poor project performance (Keil et al. 2007). Therefore, we suggest:

*H1. The higher the power distance orientation of the controllee the lower the performance of the IS offshoring project.*

### *Moderating Effect of Power Distance on the Relationship between Informal Control and Project Performance*

According to Choudhury and Sabherwal (2003), all clan control mechanisms require some sort of participation. Individuals with low power distance orientation feel comfortable with high levels of involvement and face-to-face interaction (Jaeger 1986). They are less attuned to distinctions arising from status positions, are willing to consult with others, and value equal participation in the decision making process (Adler 1997; Atwater et al. 2009). Low power distance behavior was also found to facilitate the creation of a collaborative problem-solving environment (Couto and Vieira 2004), as well as trust and solidarity among individuals (Doney et al. 1998). Thus, the establishment of a clan control environment seems to be particularly conducive to project performance when team members display low power distance behavior. For example, in order to reduce software defects, the controller may try to create an environment where actively exposing individual work outcomes to scrutiny by other project members is the norm. It is likely that such an environment is only effective for low power distance individuals who prefer open and consultative relationships. In contrast, such an environment would likely be less effective for individuals with high power distance orientation as they tend to resist working with others in teams (Kirkman and Shapiro 2001). This rationale is also supported by prior literature (Newman and Nollen 1996) which suggests that individuals with low power distance orientation show higher performance in participative environments as compared to those with high power distance orientation. Consequently, we predict:

*H2. Clan control positively affects IS offshoring project performance as power distance orientation of the controllee decreases.*

According to Hofstede (1984), individuals with high power distance orientation emphasize norms of conformity, i.e., doing what is accepted and proper (Doney et al. 1998). For example, individuals with high power distance orientation feel a duty-bound loyalty in their relationships (Hofstede 1984). Similarly, Clugston et al. (2000) observed that individuals with high power distance orientation show a strong commitment toward their supervisors. Furthermore, encouraging controllees with high power distance to exercise self-control may override their low sense of agency and signal them that they are perceived as being task-competent (Gardner et al. 2004), thereby motivating them to use their technical expertise without interference to complete the project in a manner that they believe will best satisfy the controller's

needs. Additionally, as individuals who are high in power distance orientation believe that their leaders are superior and elite, they seem to be highly motivated to behave in ways that benefit their leaders (Javidan et al. 2006). Thus, high power distance controllees who receive assistance in exercising self-control might be motivated to reciprocate by engaging in extra-role behavior—i.e., accommodating requests that go beyond the normal demands and requirements of the contract (Van Dyne et al. 1995)—thereby enhancing project performance. Therefore, we predict:

*H3. Self-control positively affects IS offshoring project performance as power distance orientation of the controllee increases.*

# Research Methodology

To test the relationships hypothesized in our research model, we adopted a survey-based approach and developed matched-pair survey instruments. Client project managers (controllers) were surveyed on their use of informal control mechanisms within the examined project as well as project performance. In our study, the controller is seen as the assessor of project outcomes (Choudhury and Sabherwal 2003). This is because the controller is the authority who accepts and approves project results. The controller is also closer to the context where the delivered artifact is used and therefore in a better position to assess the fulfillment of project goals (Tiwana and Keil 2009). Vendor project managers (controllees) responded to items about their power distance orientation and other cultural values. Both, client and vendor managers provided information about their position and professional experience. This multi-informant approach reduces the threat of common rater bias, a major source of common method biases (Podsakoff et al. 2003)[1]. To host the survey instruments, a website was launched in 2010. The data collection was conducted in 2010 and 2012. We also prepared paper-based questionnaires to eliminate coverage error (Schaefer and Dillman 1998).

## *Data Collection*

We used a convenience sample to collect the survey data. To identify appropriate projects and respondents, we contacted management executives of client and offshore vendor firms. The executives were professional acquaintances of one of the authors. The use of this "known sponsor approach" (Patton 1990) resulted in immediate legitimacy and credibility of the research team and study, and ensured the appropriateness of the ultimate respondents (Rustagi et al. 2008). If an executive agreed to participate, she/he was asked to nominate suitable projects and respondents. To ensure the quality of the data set, projects and respondents had to satisfy three criteria for inclusion in the sample. First, projects either had to be completed for not more than twelve months, or had to be underway for at least three months and already reached at least one critical milestone. This ensured that respondents were able to reliably respond to the survey. Second, the client and vendor members of a dyad must have had operated in their roles for at least two months. Establishing this criterion ensured that the dyads have had adequate time to develop a relationship (Rustagi et al. 2008). Third, projects had to allow access to both a client project manager and her/his vendor counterpart.

As an a priori strategy to minimize non-response error and its impact on the validity of inferences, we used Dillman's (2007) Tailored Design Method (TDM). With this method, multiple contacts with the target population are made to maximize response. Of the 18 executives who were initially requested to participate in the study, 14 agreed (twelve client and two vendor executives). The 14 participating executives invited a total of 118 client and vendor project managers to fill in the questionnaire (the executives did not fill in the questionnaire). Altogether, 116 respondents (57 client and 59 vendor managers) participated in our study, resulting in a response rate of 98 %. In order to form one data record for each matched pair, the matching client and vendor data records were joined based on a unique ID. Two non-paired data records were dropped from the analysis, resulting in a sample size of 57 matched pairs from 57 IS offshoring projects and independent sub-projects of large offshore arrangements. Follow-up communications with non-participants as well as a comparison of early and late respondents provided

[1] We conducted two tests to control for common method bias: Harman's one-factor test (Podsakoff et al. 2003), and pairwise correlation analysis (Bagozzi et al. 1991). Based on the test results, we are confident that our study results are not due to common method bias.

assurance against non-response bias (Armstrong and Overton 1977). For all items, the difference between minimum and maximum values was 3 or even 4 scale points, the latter referring to the maximum possible range.

### *Construct Measures*

Generally accepted guidelines were followed in developing the measurement instruments. All latent variables were measured with multiple items and operationalized at the unit of analysis, the client-vendor dyad. Consistent with prior studies on IS project control (e.g., Tiwana 2010; Tiwana and Keil 2009), we adopted Kirsch et al.'s (2002) items to measure clan control, and adapted Brief and Aldag (1981), Choudhury and Sabherwal (2003), and Kirsch et al.'s (2002) items for self-control. For project performance, we adapted well-tested items from prior IS research (Banker and Kemerer 1992; Kirsch 1996; Kumar and Bjørn-Andersen 1990). Measures for the power distance dimension and other cultural values were adopted from Hofstede's "Values Survey Module" (1994). All constructs were measured reflectively. Except for the demographic items, all items were rated on five-point Likert scales.

Construct measures were pretested and refined using a convenience sample of five IS (project) managers and six academic experts with expertise in IS offshoring and survey design. Additionally, we conducted a pilot study with eleven respondents (eight client and three vendor representatives) involved in a large-scale IS offshoring arrangement resulting in minor adaptations in the wording of some measures. Respondents in the pilot study were not in the main sample.

To test our hypotheses, we constructed two separate models: one for the moderating effect of the controllee's power distance orientation on the relationship between *clan control* and IS offshoring project performance (*model A*), and one for the moderating effect of power distance orientation on the relationship between *self-control* and project performance (*model B*). This ensured sufficient statistical power to detect the relationships in the structural models.

We checked for item reliability by analyzing item loadings using the partial least squares (PLS) path weighting scheme. Two power distance items, two clan control item, and one self-control item were removed from the model due to loadings lower than 0.6 (Nunnally 1978). All remaining items loaded above 0.70. All measures clearly exceeded the critical value of 0.7 for composite reliability (Fornell and Larcker 1981), thus indicating construct reliability. The average variance extracted (AVE) for all constructs was greater than 0.5, establishing convergent validity for all scales (Fornell and Larcker 1981). Moreover, each construct shares more variance with its assigned items than with any other construct, and within-construct item loadings are greater than their cross loadings, confirming discriminant validity for all variables in the models (Hulland 1999). We also tested the two models with an alternative formative specification of project performance, and found that this specification does not change our data analysis results. We therefore retained the reflective specification (Tiwana and Keil 2009). An overview of the operationalization of the constructs and the scale purification process, as well as the item cross loadings and the means, standard deviations and correlations among the latent constructs is provided in the appendix.

We included two control variables in our analysis: project size and interfirm relationship history. Project size is considered as an important control variable in performance models in IS outsourcing (Pressman 2001). Interfirm relationship history influences vendor capabilities, and hence project performance (Ethiraj et al. 2005). The control variables were measured by asking the client managers to assess the total project effort in person-months (proxy for project size), and indicate the client organization's experience with the offshore vendor (proxy for interfirm relationship history) on three-point Likert scales.

### *Descriptive Statistics*

We collected data from 57 offshore projects. 32 projects were executed with independent vendor organizations (third party vendors and global service providers), 24 with a subsidiary of the client firm, and one with a joint venture. We see both offshoring to independent vendors and offshoring to semi-autonomous vendors owned by the client firm (captive centers) as comparable, because both variants of offshoring use market-based mechanisms (such as formal contracts) to govern the relationship, face similar control challenges (e.g., geographical, cultural, and language differences), and the literature tends to treat them as similar. For example, Levina and Vaast (2008) found that there were no significant

differences between a captive center and a third party vendor. In fact, they state "that along most of the dimensions suggested by the literature, managerial practices did not differ between the captive and the vendor" (p. 318). All client firms operate from German-speaking countries (twelve, four, and one from Germany, Switzerland, and Austria, respectively), and represent multiple industries (e.g., energy, healthcare, and manufacturing). 14 of them are large for-profit firms and three are small or medium-sized enterprises. 46 projects involved large-scale vendor organizations, while eleven projects involved small or medium-sized vendors. Approximately 70 % of the projects were offshored to India. The 57 client and vendor managers come from ten and seven different countries, respectively. 95 % of all client project managers stated that they had more than one year of experience in the IS offshoring field. More than 70 % of the vendor project managers indicated to have more than five years of experience in the IS offshoring field. Additional descriptive statistics are presented in Table 1.

**Table 1. Descriptive Statistics**

| Project focus | # of projects | Project size [a] | # of projects |
|---|---|---|---|
| Applications development/testing | 49 | Fewer than 25 PM | 5 |
| Applications management | 5 | 25 – 59 PM | 10 |
| IS infrastructure management (managed services) | 3 | 60 – 119 PM | 8 |
| | | 120 – 599 PM | 24 |
| | | More than 599 PM | 10 |
| TOTAL | 57 | | 57 |
| *Note:* [a] In person months (PM). | | | |

## Data Analysis and Results

We chose the PLS estimation method because it is very useful as a predictive method (Fornell 1992) and "remarkably stable even at low sample sizes" (Gefen et al. 2011, p. A3). We used the software SmartPLS 2.0 (Ringle et al. 2005) with a bootstrap size of 1.000 to assess the structural model. Applying the approach suggested by Carte and Russell (2003), we first entered the control variables (step 1), followed by the main effects (step 2), and the interaction terms (step 3). To test our hypotheses, we follow Chin et al.'s (1996) recommended approach to center reflective indicators for the main and moderating constructs and create all pair-wise product indicators where each indicator from the main construct is multiplied with each indicator from the moderating construct. The results of the PLS analysis are shown in Table 2.

The control variables (step 1) explain 6.2 percent of the variance in IS offshoring project performance. Both variables are nonsignificant. Next, we turn our attention toward the main effects (step 2). Our results indicate a significantly negative, direct effect of power distance orientation on project performance (model A: $\beta$ = -0.350, t-value = 3.04, $p < 0.01$; model B: $\beta$ = -0.300, t-value = 2.85, $p < 0.01$), supporting hypothesis 1. The main effects explain an additional 10.1 and 15.8 percent variance in model A and model B, respectively, beyond the control variables.

Finally, the interaction terms are used to assess the moderation hypotheses (step 3). While power distance orientation does not significantly moderate the relationship between clan control and performance (hypothesis 2), power distance orientation does significantly and positively moderate the relationship between self-control and performance ($\beta$ = 0.276, t-value = 2.19, $p < 0.05$), thus supporting hypothesis 3. Note that the main effects must be restricted to step 2 and cannot be interpreted in the presence of the interaction terms in step 3, where they represent conditional simple effects (Jaccard and Turrisi 2003).

To assess the strength of the significant moderating effect, we calculated the effect size $f^2$ as $[R^2_{included} - R^2_{excluded}] / [1 - R^2_{included}]$ (Cohen 1988). The f2-value of 0.10 indicates a moderate interaction effect of controllee's power distance orientation and controller's use of self-control on project performance. Figure 2 illustrates this interaction effect (values are mean centered). High (dotted lines) and low (solid lines)

levels of power distance orientation represent ±1 standard deviations from the mean. As shown in the interaction plot, self-control does only marginally decrease project performance in the low power distance case. However, in the high power distance case, self-control does increase performance. This case-dependent visualization provides graphical evidence that a controllee's high power distance orientation facilitates the effective use of self-controls.

In separate tests, we also computed both models with alternative cultural values as moderator variables (i.e., individualism-collectivism and uncertainty avoidance). In addition, we tested for potential moderating effects of cultural values on the relationship between formal control (i.e., outcome and behavior control) and IS offshoring project performance. Similar tests were conducted for detecting potential effects of the controller's cultural value orientations and cultural value differences between the controller and controllee. However, none of these tests revealed any significant effects.

**Table 2. PLS Analysis Results**

| | | *Model A* | | *Model B* | |
|---|---|---|---|---|---|
| | Control variables (Step 1) | Main effects (Step 2a) | Interaction terms (Step 3a) | Main effects (Step 2b) | Interaction terms (Step 3b) |
| Construct | β | β | β | β | β |
| Project size | -0.247 | -0.184 | -0.210 | -0.194 | -0.172 |
| Interfirm history | -0.059 | -0.049 | -0.039 | -0.102 | -0.104 |
| Clan control | | -0.072 | -0.039 | | |
| Self-control | | | | 0.268 | 0.252 |
| Power distance orientation | | **-0.350**** | -0.290* | **-0.300**** | -0.216* |
| Clan control x Power distance orientation | | | -0.204 | | |
| Self-control x Power distance orientation | | | | | **0.276*** |
| R2 (percent) | 6.2 | 16.3 | 19.7 | 22.0 | 29.0 |
| Δ R2 (percentage point) | -- | 10.1 | 3.4 | 15.8 | 7.0 |

*Notes:* Significant results in boldface. ** $p < 0.01$, * $p < 0.05$; two-tailed test.

## Discussion

The paper presents one of the first empirical studies on the interplay between informal control and cultural values. With this study we sought to understand how power distance at the individual-level influences the effectiveness of informal control. We also aimed at enhancing our understanding of how power distance orientation espoused by the vendor manager directly influences IS offshoring project performance. Our paper makes three significant contributions. First, our results suggest that self-control enhances project performance in high power distance contexts, thereby extending previous research on the interplay between cultural values and IS project control (e.g., Narayanaswamy and Henry 2005). Second, our finding that individual power distance orientation had a significant direct effect on performance answers calls for more attention to the effects of individual-level cultural values (Kirkman et al. 2006). Third, the integration of other cultural variables did not reveal any significant effects on the relationship between informal control and performance, emphasizing the importance of power distance orientation for control issues compared to other cultural values.

Before discussing the study results and their implications, some limitations have to be mentioned. First,

in our study, a moderate sample of 57 matched controller-controllee pairs was used. To ensure sufficient statistical power, we divided our research model into two sub-models. Second, the sample size restricted the number of control variables in the models. There are several additional variables that potentially influence project performance such as team size (Gopal et al. 2003) and the nature of risk sharing (Rai et al. 2009). Third, the fact that most of the client and vendor respondents are German and Indian, respectively, could impact the generalizability of the results.

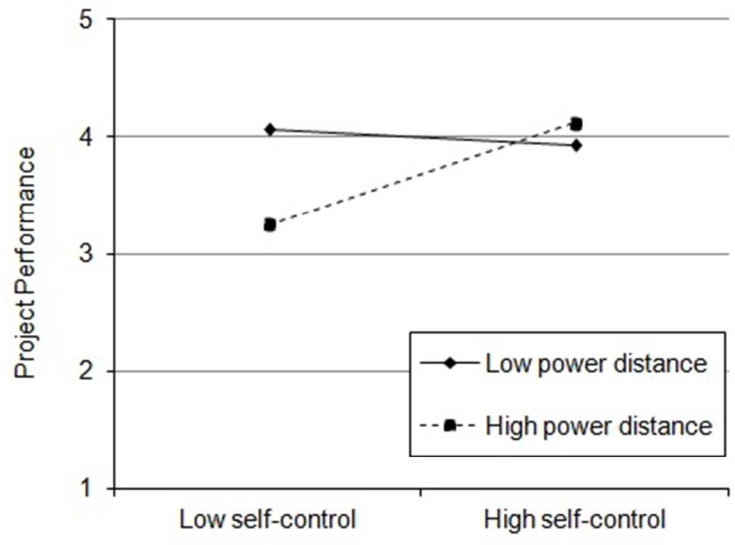


**Figure 2. Interactions of Self-Control and Power Distance on Project Performance**

Our results did not provide evidence of a significant interaction effect of clan control and power distance orientation in impacting project performance. According to Chua et al. (2012), enacting clan control is a dual process of building and leveraging the clan. Low power distance behavior on part of the vendor project manager may help developing a close connection and relationship with the client project manager, and thus contribute to building the clan to some extent. However, it may not be sufficient for establishing clan norms and values that can be rigorously enacted. This might explain why the vendor manager's power distance orientation does not appear to make a significant difference in clan control effectiveness.

Overall, our results provide strong evidence that the controllee's high power distance orientation directly and negatively impacts IS offshoring project performance. While high power distance behavior may cause a lack of open and frequent interactions between controllers and controllees, thereby leading to decisions based on incomplete information and ultimately poor project performance, the opposite may be true for low power distance behavior. This finding adds to Dibbern et al.'s (2008) observation that the vendor's high power distance may lead to poor performance in terms of client extra costs in German-Indian offshore application software projects. Furthermore, in their study on the impact of culture on IS offshoring project success, Winkler et al. (2008) suggest that misunderstandings between the German client and the Indian vendor which resulted in poor project performance may be traced back to high power distance behavior. The negative link between power distance orientation and project performance also extends Rai et al.'s (2009) finding that a vendor manager with high individual power distance orientation enhances client satisfaction in the absence of a client representative on the project team (please note that Rai et al. used client satisfaction as subjective success measure). They argue that project managers espousing high power distance enhance client satisfaction because such managers will comply with client directives. However, although simply complying to client directives may lead to higher client

satisfaction, it will not necessarily lead to better project performance as some directives may not be suitable for a given project situation. More empirical work is needed to shed light into this interesting issue.

Finally, our findings suggest that the promotion of self-control by the controller is effective in increasing project performance when the controllee shows high power distance behavior. For example, the use of self-control may serve as a signal of the controller's confidence in the controllee, thereby motivating the controllee to exhibit extra-role behavior (Tiwana and Keil 2009). When controllees exhibit extra-role behavior, they are likely motivated by high commitment to their controllers engendered by a high power distance orientation (Kirkman et al. 2009). Interestingly, high power distance orientation itself has a negative impact on performance. Thus, the promotion of self-control seems to compensate the negative effect of high power distance behavior on performance and even invert this effect into a positive one.

Our results also have important implications for practice. First, clients need to be aware of the negative effects caused by high power distance behavior, and take actions to mitigate these effects. When clients encounter high power distance behavior on part of the vendor project manager, they should proactively call for constant feedback by the vendor managers, and communicate them that criticism is welcome. Furthermore, management approaches that primarily rely on personal interaction might need to be supplemented with other, less personal management techniques to ensure effective information exchange. For example, the use of standardized reporting forms (Levina and Vaast 2005), as well as models, maps, and objects (Carlile 2004) may be valuable boundary objects that help to elicit feedback. The use of such artifacts may improve feedback and communication, and ultimately project performance in high power distance settings, as potentially problematic behaviors such as the reluctance to voice criticism in face-to-face meetings are circumnavigated. Second, if clients have to deal with a vendor project manager exhibiting high power distance orientation, they should try to enable and promote the exercise of self-control. For example, clients could help the vendor design effective processes, or institute performance evaluation schemes that reward autonomy and self-management (Kirsch et al. 2002). This implication seems to be particularly relevant for practice since prior results suggest that clients are less likely to promote the use of self-control when vendor managers show high levels of power distance orientation (Heumann et al. 2011).

## Conclusions

The main contribution of this study lies in showing that the vendor project manager's power distance orientation represents an important antecedent of informal control effectiveness. More specifically, the results explain inconclusive results in prior literature by showing that clan and self-controls do not directly affect performance in (offshore) outsourced projects (Tiwana and Keil 2009). Here, the results highlight the dual role of espoused power distance orientation: as an *indirect* factor positively moderating the effective use of self-control and as a *direct* factor negatively influencing IS offshoring project performance. The latter finding points to the need to carefully select the client-vendor interface. This is an important topic for further research and an ongoing challenge for practice.

Finally, much remains to be learned regarding cultural effects on the control-performance relationship. For instance, not only the cultural values of the vendor manager but also the cultural differences between the client and vendor manager may impact the effectiveness of controls. For example, large cultural differences may impede the creation of shared values and norms, hampering the effective implementation of clan controls. Future research should look at these cultural effects on the link between control and project performance, and in particular how to avoid or mitigate negative effects.

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# Appendices

**Table 3. Cross Loadings**

| *Model A* | | | | | |
|---|---|---|---|---|---|
| | Clan control | Power distance | Project performance | Project size | Interfirm history |
| Clan control (CC3) | **0.752** | -0.143 | -0.020 | 0.101 | -0.051 |
| Clan control (CC4) | **0.900** | -0.070 | -0.031 | -0.081 | 0.115 |
| Power distance (PD2) | -0.168 | **0.752** | -0.255 | -0.143 | 0.121 |
| Power distance (PD3) | -0.030 | **0.829** | -0.300 | 0.155 | 0.062 |
| Project performance (PP1) | 0.027 | -0.271 | **0.831** | -0.102 | -0.016 |
| Project performance (PP2) | -0.117 | -0.084 | **0.700** | -0.136 | -0.094 |
| Project performance (PP3) | 0.000 | -0.374 | **0.770** | -0.018 | -0.177 |
| Project performance (PP4) | -0.046 | -0.287 | **0.844** | -0.306 | 0.027 |
| Project size | -0.010 | 0.023 | -0.187 | **1.000** | -0.091 |
| Interfirm history | 0.058 | 0.112 | -0.076 | -0.091 | **1.000** |
| *Model B* | | | | | |
| | Self-control | Power distance | Project performance | Project size | Interfirm history |
| Self-control (SC2) | **0.753** | -0.088 | 0.172 | -0.056 | 0.106 |
| Self-control (SC3) | **0.819** | -0.123 | 0.240 | 0.030 | 0.212 |
| Self-control (SC4) | **0.797** | -0.014 | 0.231 | 0.086 | 0.006 |
| Power distance (PD2) | -0.222 | **0.746** | -0.244 | -0.143 | 0.121 |
| Power distance (PD3) | 0.048 | **0.834** | -0.294 | 0.155 | 0.062 |
| Project performance (PP1) | 0.184 | -0.270 | **0.823** | -0.102 | -0.016 |
| Project performance (PP2) | 0.241 | -0.085 | **0.729** | -0.136 | -0.094 |
| Project performance (PP3) | 0.229 | -0.373 | **0.767** | -0.018 | -0.177 |
| Project performance (PP4) | 0.221 | -0.288 | **0.836** | -0.306 | 0.027 |
| Project size | 0.034 | 0.026 | -0.183 | **1.000** | -0.091 |
| Interfirm history | 0.138 | 0.111 | -0.081 | -0.091 | **1.000** |

| **Table 4. Descriptive Statistics and Correlations Among Constructs** | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Model A* | | | | | | | |
| Construct | Mean | S.D. | (1) | (2) | (3) | (4) | (5) |
| (1) Clan control | 4.298 | 0.690 | **0.829** | | | | |
| (2) Interfirm history | 2.439 | 0.567 | 0.058 | **1.000** | | | |
| (3) Performance | 3.711 | 0.931 | -0.031 | -0.076 | **0.787** | | |
| (4) Power distance | 2.167 | 0.808 | -0.118 | 0.112 | -0.352 | **0.792** | |
| (5) Project size | 3.421 | 1.224 | -0.010 | -0.091 | -0.187 | 0.023 | **1.000** |
| *Model B* | | | | | | | |
| Construct | Mean | S.D. | (1) | (2) | (3) | (4) | (5) |
| (1) Self-control | 3.339 | 0.971 | **0.790** | | | | |
| (2) Interfirm history | 2.439 | 0.567 | 0.138 | **1.000** | | | |
| (3) Performance | 3.711 | 0.931 | 0.275 | -0.081 | **0.790** | | |
| (4) Power distance | 2.167 | 0.808 | -0.094 | 0.111 | -0.341 | **0.791** | |
| (5) Project size | 3.421 | 1.224 | 0.034 | -0.091 | -0.183 | 0.026 | **1.000** |
| *Note*: Diagonal elements (bold face) show the square-root of average variance extracted for each construct. | | | | | | | |

| **Table 5. Model A: Operationalization and Psychometric Properties of Variables** | | | | | | |
|---|---|---|---|---|---|---|
| Construct | Label | Item | Loading | Composite reliability | AVE | Reference(s) |
| Clan control | CC1 | I placed a significant weight on understanding the project team's goals, values, and norms | * | 0.814 | 0.688 | Kirsch et al. (2002) |
| | CC2 | I actively participated in project meetings to understand the project team's goals, values, and norms | 0.752 | | | |
| | CC3 | I attempted to understand the project team's goals, norms, and values | 0.900 | | | |
| | CC4 | I attempted to be a "regular" member of the project team | * | | | |
| Power distance orientation | PD1 | I have a good working relationship with my direct superior [a] | * | 0.770 | 0.627 | Hofstede (1994) |
| | PD2 | I am consulted by my direct superior in her/his decisions [ac] | 0.752 | | | |
| | PD3 | How frequently are you afraid to express disagreement with your superiors? [b] | 0.829 | | | |
| | PD4 | An organization structure in which certain subordinates have two bosses should be avoided at all costs | * | | | |
| Project performance | PP1 | The project deliverables met the requirements | 0.831 | 0.867 | 0.620 | Banker and Kemerer (1992), Kirsch (1996), Kumar and Bjørn-Andersen (1990) |
| | PP2 | The project deliverables were completed on time | 0.700 | | | |
| | PP3 | The project deliverables adhered to IS standards | 0.770 | | | |
| | PP4 | The project deliverables were completed within budgeted costs | 0.844 | | | |
| *Notes:* All instrument items are based on five-point Likert scales, predominantly using "strongly agree" and "strongly disagree" anchors. [a] Using "utmost importance" and "no importance" anchors, [b] Using "very frequently" and "very seldom" anchors, [c] Reverse coded, [*] Based on the instrument validation process, item was deleted (this did not change the pattern of significant paths). | | | | | | |

| Table 6. Model B: Operationalization and Psychometric Properties of Variables | | | | | | |
|---|---|---|---|---|---|---|
| Construct | Label | Item | Loading | Composite reliability | AVE | Reference(s) |
| Self-control | SC1 | I established an appropriate environment for self-management [d] by communicating to the supplier that self-management is valued | * | 0.833 | 0.624 | Brief and Aldag (1981), Choudhury and Sabherwal (2003), Kirsch et al. (2002) |
| | SC2 | I introduced performance evaluation schemes that reward self-management | 0.753 | | | |
| | SC3 | I enhanced the supplier's ability to exercise better self-management | 0.819 | | | |
| | SC4 | I trained the supplier in appropriate techniques for self-management | 0.797 | | | |
| Power distance orientation | PD1 | I have a good working relationship with my direct superior [a] | * | 0.770 | 0.626 | Hofstede (1994) |
| | PD2 | I am consulted by my direct superior in her/his decisions [ac] | 0.746 | | | |
| | PD3 | How frequently are you afraid to express disagreement with your superiors? [b] | 0.834 | | | |
| | PD4 | An organization structure in which certain subordinates have two bosses should be avoided at all costs | * | | | |
| Project performance | PP1 | The project deliverables met the requirements | 0.823 | 0.869 | 0.624 | Banker and Kemerer (1992), Kirsch (1996), Kumar and Bjørn-Andersen (1990) |
| | PP2 | The project deliverables were completed on time | 0.729 | | | |
| | PP3 | The project deliverables adhered to IS standards | 0.767 | | | |
| | PP4 | The project deliverables were completed within budgeted costs | 0.836 | | | |

*Notes:* All instrument items are based on five-point Likert scales, predominantly using "strongly agree" and "strongly disagree" anchors. [a] Using "utmost importance" and "no importance" anchors, [b] Using "very frequently" and "very seldom" anchors, [c] Reverse coded, [d] According to Kirsch (1996), the definition of self-management is consistent with the concept of self-control, [*] Based on the instrument validation process, item was deleted (this did not change the pattern of significant paths).