Routledge
Taylor & Francis Group

Construction Management and Economics

ISSN: 0144-6193 (Print) 1466-433X (Online) Journal homepage: https://www.tandfonline.com/loi/rcme20

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To cite this article: Florence T. T. Phua (2006) When is construction partnering likely to happen? An empirical examination of the role of institutional norms, Construction Management and Economics, 24:6, 615-624, DOI: 10.1080/01446190500521256

To link to this article: https://doi.org/10.1080/01446190500521256

Construction Management and Economics (June 2006) **24**, 615–624

When is construction partnering likely to happen? An empirical examination of the role of institutional norms

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Received 1 June 2005; accepted 30 November 2005

Despite the vast interest and enthusiasm on the benefits of construction partnering, no apparent trend exists to show that it has become the dominant choice of procurement method across construction industries internationally. Rather, the implementation of construction partnering has been patchy, with varying degrees of success and, in many instances, its adoption is more an exception than the norm. This study argues and sets out to test the proposition that despite the huge advocacy for the use of partnering, its slow uptake and, more importantly, the inconsistent results it yields are due to the lack of systematic investigation into the institutional determinants of partnering. Based on data collected from 526 firms covering various industry disciplines, results show that firms' use of partnering is selective and that this selectiveness is significantly determined by the industry's level of institutional norms and not by the conventional notion that partnering increases a firm's profitability or efficiency. Findings further indicate that firms that perceive there are strong industry norms for partnering are twice as likely to use partnering as firms that do not have such perception. By empirically examining the institutional conditions under which partnering is more likely to occur, this study sheds some light on why the implementation of partnering remains at a conservative rate and suggests avenues for future research.

Keywords: Construction partnering, institutional norms, procurement methods

Introduction

Construction partnering is still popularly regarded as 'the most significant development to date as a means of improving project performance' (Wood and Ellis, 2005: 317). The steady stream of literature highlighting the potential benefits of construction partnering is widely accepted as an endorsement of its use as a choice procurement method in the construction industry (Bennett and Jayes, 1995; Egan, 1998; Black *et al.*, 2001; Chan *et al.*, 2003; Cheung *et al.*, 2004). Even as some academics cynically challenge the wisdom of construction partnering (Bresnen and Marshall, 2000; Green, 1999), this does not seem to dampen the overall enthusiasm of its proponents, as evidenced by the copious amount of literature devoted to the subject. Enthusiasm and interests notwithstanding, the successful outcome of projects using construction partnering is far from constant with several studies documenting varying degrees of failed partnering projects (e.g. Angelo, 1998; Larson, 1997).[1] More noticeably, despite the continued popularity of construction partnering, no apparent industry trend exists to show that it is now the dominant choice of procurement method. Although it would be difficult to measure precisely the extent to which the industry is adopting partnering – that information is often transmitted in the form of one-off case studies, thereby limiting the possibility of large scale cross-sectional studies to examine the relationship between its ubiquity and corresponding impacts – it would not be unreasonable, based on two plausible reasons, to suggest that its use in construction industries generally remains patchy rather than widespread.

First, the implication of relying on one-off case studies that only tend to report on successful partnering projects is that while different aspects of partnering which range from socio-psychological issues such as communication (Barlow and Jashapara, 1998), cooperation (Humphreys *et al.*, 2003), mutual trust (Wong

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Construction Management and Economics
ISSN 0144-6193 print/ISSN 1466-433X online © 2006 Taylor & Francis
http://www.tandf.co.uk/journals
DOI: 10.1080/01446190500521256

and Cheung, 2004) and culture (Kwan and Ofori, 2001), to structural issues such as risk-sharing provision (Bayliss *et al.*, 2004) and benchmarking (Li *et al.*, 2001), have all one way or another been claimed to benefit overall project outcome in terms of time, cost and quality improvements, no empirical evidence concerning the nature and effects of any or combination of these different aspects of partnering on project success exists.[2] Consequently, no tangible or concerted effort can be advanced to investigate how these different aspects can be encouraged and sustained across the industry to bring about the extolled benefits, thus seriously compromising the predictive utility of the partnering framework (Phua and Rowlinson, 2004).

Second, from the practitioners' perspective, even when studies do make some general recommendations about partnering 'best practices', the nature of the recommendations varies widely and remains largely at the prescriptive level based on the experiences of selective, idiosyncratic projects, which renders the transfer of core knowledge difficult (Watson, 1999).

However, perhaps a more convincing reason for the patchiness of the adoption of partnering in the industry stems from the fact that construction firms do not appear to all jump on the partnering bandwagon despite its potential benefits. The commonly used term 'potential benefits' found in the literature would seem to suggest that in order to achieve the associated benefits, partnering must be contingent upon certain factors that make it an obvious choice of procurement method for construction firms in the first place. Notwithstanding the benefits that partnering can potentially bring, the key question is: why are the majority of construction firms still not using partnering to replace other traditional procurement methods? Following from this, the next question is: what are the determinants predicting the likelihood that construction firms will adopt partnering? There are compelling reasons for asking these questions, because if what is being preached by academics is not being practised by the industry there is a need to understand (1) why the gap exists and (2) how it can possibly be bridged, so that the rigour and applicability of the research and practice nexus can be strengthened further. Even more compellingly, because construction firms are increasingly found to have a positive attitude towards partnering (Wood and Ellis, 2005), the well-received opinion for the absence of its widespread use due to negative perceptions and attitudes among practitioners could no longer be maintained. Thus, other pertinent reasons exist that account for the discrepancy between the supposed tangible benefits that partnering brings and the lack of its adoption in reality.

To shed some light on the above-mentioned questions, this paper is set out in three sections: first, a literature review based on strategic management theories to highlight the institutional dynamics that underpin the formation of partnering arrangement and consequently identifying the institutional determinants of such arrangement; second, an empirical testing of the proposition that the extent to which partnering is likely to occur is influenced by certain institutional determinants that have previously not been looked at; and finally a discussion of the implications of the findings for further research.

Construction partnering as a form of inter-organizational alliance

Construction partnering as defined by the Construction Industry Institute (1991) consists of 'a long-term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participants' resources'. In this regard, it is no different to any other types of inter-organizational alliances which 'operate in a relational context of environmental interconnectedness' such that 'an organization's survival and performance often depend critically upon the linkages to other organizations' (Oliver, 1990: 241). To this end, several theoretical perspectives exist to explain and predict the establishment, development, process and outcomes of various forms of inter-organizational relationships. Primarily, these theories can be broadly categorized into (1) ones that are grounded in transaction cost economics (Williamson, 1985, 1991); (2) those that are rooted in resource dependency perspectives (Pfeffer and Salancik, 1978; Barney, 1991); and (3) ones that stem from institutional processes (DiMaggio and Powell, 1983).

It is easy to see why transaction costs-based considerations that focus on the use of inter-organizational alliances as a means to minimize the overall cost of conducting business have such obvious and far-reaching explanatory effects on the structures and outcomes of inter-organizational alliances. Equally profound in the literature of inter-organizational alliance is the resource-dependence perspective, which suggests that inter-organizational alliances are likely to be formed when firms 'jointly obtain and allocate greater amount of resources than would be possible by each firm independently' (Van de Ven, 1976: 25). On the other hand, the premise of the institutional perspective on the formation of inter-organizational

alliance is that firms are bounded and shaped by institutional norms and pressures such that common structures and patterns of collaboration between firms, copied over time, will become 'legitimate' and generally accepted practice (Osborn and Hagedoorn, 1997).

Although there is significant conceptual divergence underpinning each of these three broad theories, an overarching assumption common to all is that firms make rational, albeit bounded (Cyert and March, 1963) and deliberate, decisions about the types of inter-organizational alliance that they would enter into which would most benefit their firms. The rational circumspection that firms apply in making these decisions suggests that any inter-organizational alliance arrangement can only occur and develop for specific reasons that are deemed advantageous to the growth and profitability of their business. In the same vein, construction partnering as a form of inter-organizational alliance will only occur if firms, in making rational and deliberate decisions about its use, consider it to be a prudent procurement method given the circumstances affecting a particular project at a particular time.

In the construction management literature, no study has been undertaken to investigate the role played by institutional norms in predicting the use of inter-organizational alliances, of which partnering is one. Hence, using the institutional framework, this paper will identify the institutional conditions under which partnering is likely to occur.

Institutional dynamics underpinning the use of construction partnering

A rich body of organizational and strategy literature exists to explain how and why institutional forces are important impetuses that drive the creation of different inter-organizational structures and alliances (e.g. Scott, 1987, 1998; Scott and Meyer, 1994; Zucker 1987). Institutional forces that arise from specific regulatory institutions (e.g. laws, regulations) and normative and social norms (e.g. professional conformity, industry and societal expectations) will to a certain degree influence business decisions and organizational actions. In other words, the contexts in which business decisions are made are affected by pressures of firms seeking social conformity and compliance with rules, regulations and norms which, in turn, dictate what are regarded as desirable or legitimate business endeavours. The compliance with norms and regulations is deemed important because firms that conform 'are rewarded … through increased legitimacy, resources, and survival capabilities' (Scott, 1987: 498).

In addition, institutional theory postulates that because firms seek legitimacy, new organizational arrangements emerge as a result of firms attempting to achieve a fit with their institutional environments such that 'firms within the same population facing the same set of environmental constraints will tend to be isomorphic to one another and to their environment' (Dacin, 1997: 48). Thus, when the same institutional pressures continue to exist over time, isomorphism will lead to firms becoming more homogeneous (DiMaggio and Powell, 1983) and as a result, a dominant organizational arrangement or 'proto-institution' (Lawrence *et al.*, 2002) is likely to occur. Lawrence *et al.* (2002: 282) argue that an inter-organizational alliance can take root through the creation of 'proto-institutions', i.e. where new practices, rules and technologies become sufficiently embedded in the institutional environments in which firms operate. Extrapolating this argument to the construction industry, it appears that partnering has not achieved the status of 'proto-institution' where its practices, rules and technologies become so entrenched that firms choosing other practices, rules and technologies will become less competitive.

As firms continually seek both economic and social fitness in order to obtain improved performance and profitability (Oliver, 1996: 172) by (1) exercising prudence and astuteness to maximize the potential of their scarce resources; and (2) conforming with industry-specific institutional forces, the basis for deciding when partnering is likely to be used in the construction industry has to logically stem from these two fundamental considerations. Studies have repeatedly shown that partnering arrangements within the construction industry are mainly driven by cost and other financial factors (Dainty *et al.*, 2001; Wood and Ellis, 2005) – so much so that such an approach, even when adopted, is often deemed as 'mere ceremony' (Greenwood, 2001: 7). Hence, while it is undeniable that construction firms largely strive towards 'economic fitness' when it comes to choosing partnering as a procurement method, no construction literature has so far investigated the extent to which firms, in adopting partnering is influenced by the pursuit of 'social fitness' such that they gain increased survival capabilities by conforming to institutional norms and patterns. Apart from purely economic-based determinants, an investigation into the institutional conditions under which firms are motivated to adopt partnering could provide some useful explanation as to when partnering is likely to occur.

Present study and hypotheses development

In contrast to the commonly held view that the use of partnering is predicated on rational decisions that are

grounded in financial inducements, this paper proposes that the rational decisions that firms make with regard to the use of partnering can be based on institutional factors that are deemed to bring tangible benefits to their business operations. For instance, firms using partnering may gain increased legitimacy and hence improved firm performance due to increased opportunities to compete for certain government contracts and, possibly, increased capital investments from clients due to firms' adoption of non-adversarial construction processes. The ability to attract investment dollars provides firms with incentives to improve the construction delivery systems through innovative construction activities, which in turn is a source of economic profitability and/or competitive advantage. When firms rationalize that there are benefits to be gained by conforming to industry regulations, norms and expectations through the use of partnering, the likelihood of its adoption will increase. Having said that, the extent to which firms are motivated to use partnering is a function of how deeply entrenched the institutional environment is with respect to rules, regulations, norms and expectations that are associated with the practice. Thus the more the practice of partnering becomes institutionalized, the greater would be the 'isomorphic tendency' of firms to use it (Dacin, 1997). And so the following hypotheses can be advanced:

> ***Hypothesis 1:*** *The extent to which construction firms adopt partnering is influenced by the presence of strong industry norms and expectations for partnering.*
>
> ***Hypothesis 2:*** *Firms who perceive that there is strong industry norms and expectations for partnering are more likely to adopt partnering than firms who do not have such perception.*

Because firms make rational and strategic decisions about the use of partnering, it is likely that firms will tend to associate the use of partnering with increased business profitability. Hence, the final hypothesis is:

> ***Hypothesis 3:*** *Firms who perceive that there are strong industry norms and expectations for partnering will tend to associate the use of partnering with increased firm competitiveness and profitability than firms who do not have such perception.*

Methodology

Sample and procedure

Using trade association and chamber of commerce directories, a questionnaire survey was administered to a population sample of 2,602 foreign and local firms in Hong Kong which was framed from (1) the construction-related consulting industry; (2) the construction contracting industry; (3) the construction manufacturer and supplier industry; and (4) construction developers. The sample was believed to represent all construction firms operating in Hong Kong for which contact details, including the name of the most senior executive, were available. Using senior executives as the key informant for this study is deemed appropriate because it has been suggested that the senior executive 'acts as the brain of the organization and is the key determinant of its strategic posture' (Dickson and Weaver, 1997: 409). Moreover, as senior executives are charged with making key strategic decisions (Papadakis and Barwise, 2002) that are predicated by broader market and institutional frameworks (Rajagopalan and Datta, 1996), their views and perceptions about the determinants of firm performance are likely to correspond to 'real' underlying causal relationships (Partington, 2000: 98).

The first questionnaire administration produced 229 responses from senior executives. To boost response and to account for the testing of non-response bias, a reminder questionnaire was sent to identifiable non-responders two weeks after the initial mailing. The second mailing produced a further 297 responses, making a total of 526, a 21.8 per cent response rate. Some 46 per cent of respondents were between 41 and 50 years old, while 22 per cent were 40 years old or younger; 488 were men and 38 were women; 454 were Chinese and 72 were foreigners from predominantly Britain, Australia, America, Japan and Singapore; 184 had at least an undergraduate degree and 116 had postgraduate degrees; average length of current-job tenure was 13.02 years (s.d. 8.71).

A total of 270 firms were related to the construction contracting industry; 110 were construction consulting firms of one type or another; a further 101 firms belonged to the construction manufacturer and supplier industry; 15 firms were construction developers. Firms' size ranged from having two employees to 3,300, but the average firm size was 50.04 employees (s.d. 259.89). To test for unit non-response bias, Armstrong and Overton's (1977) time trend extrapolation procedure was used. The presumption of this procedure is that respondents replying later to a survey are more likely to resemble non-respondents than early respondents, suggesting that significant differences between initial and second administration respondents would predict differences between those who responded and those who did not. Comparison of first and second administration respondents did not reveal any significant differences in gender ($\chi^2=0.02$, 1 df, $p=.87$), education ($\chi^2=.66$, 3 df, $p=.88$), age ($\chi^2=3.50$, 4 df, $p=.48$) or firm type ($\chi^2=6.88$, 7 df, $p=.44$), indicating that responses could be regarded as broadly representative of the pooled sample.

Measure – partnering use

Partnering use was based on responses regarding whether or not firms are presently adopting partnering approaches. The question '*Presently, is your firm adopting partnering/collaboration approaches as part of your procurement strategy?*' was scored on a yes/no dichotomous scale.

Perception of norms and expectations for partnering

A single item scale measuring the extent to which firms perceive a strong industry norm and expectation for partnering exists was used. Respondents were asked to score on a five-point interval measure (1=strongly disagree, 5=strongly agree) the following question: '*Thinking from your own experience, to what extent do you agree that there has been increasingly more efforts within the industry to encourage partnering/collaborative approaches?*' Three additional items measuring firms' perception of the institutionalization of partnering practice were also included. Respondents were asked to score on a five-point interval measure (1=strongly disagree, 5=strongly agree) the statement:

> *Regardless of whether or not your firm has adopted partnering/collaborative approaches, to what extent do you personally agree that such approaches:*
>
> - *will replace traditional procurement strategy in the next five years;*
> - *have already replaced traditional procurement strategy;*
> - *are likely to be the preferred choice of procurement strategy for firms.*

Extent of partnering involvement

Based on the literature, firms engaging in partnering generally experience better resource use, improved communications and have stronger ties between firms. Hence, a six-item scale assessing the extent to which firms are involved in partnering practice was scored in response to the question: '*To what extent do you agree or disagree that your firm has in the past two years been*' followed by the items '*actively establishing strategic collaborative relationships with other firms*'; '*sharing frequent communications with other collaborating firms*'; '*having closer ties with other collaborating firms*'; '*experiencing more flexibility in negotiations with other collaborating firms*'; '*making better quality joint decisions with other collaborating firms*'; '*more efficient in its use of resources as a result of active collaboration*'. All items had a five-point interval measure (1=strongly disagree, 5=strongly agree). A principal components factor analysis with Varimax rotation of the six items yielded a single factor solution that explained 63.06 percent of variance with an eigenvalue of 3.78, suggesting unidimensionality for the scale (Carmines and Zellar, 1979). Reliability analysis showed Cronbach's alpha of .88, further indicating that the six items could be regarded as constituting a reliable measure and hence, the items were summated to produce a single mean for extent of partnering involvement.

Firm competitiveness and profitability due to partnering use

To examine whether or not firms associate the use of partnering with increased firm profitability and competitiveness, three items are scored in response to the statement:

> *Regardless of whether or not your firm has adopted partnering/collaborative approaches, to what extent do you personally agree that such approaches:*
>
> - *can significantly improve firms' efficiency/profitability;*
> - *are likely to make firms more competitive in the market;*
> - *are likely to help firms win contracts and secure business deals*

Control variables

To control for possibly confounding firm demographic effects, which may have an impact on a firm's likelihood to use partnering, size and age of firms were included. This is consistent with previous studies showing that larger firms tend to adopt more inter-organizational alliance arrangements than smaller ones (Dickson and Weaver, 1997) and firms that are established longer are more likely to use such arrangements as well. Size of firms was measured as the number of employees based solely in Hong Kong, while age of firm was measured as the number of years since establishment in Hong Kong only.

Results and analysis

Table 1 shows means, standard deviations and inter-item correlations of all the variables used in this study. Significant correlations between variables do not exceed $r=.60$, indicating little danger of collinearity problems in subsequent regression analysis. Support is found for Hypothesis 1, where partnering use is significantly correlated with firms' perception of a strong industry norm and expectation for partnering ($r=.23$, $p<.001$). Moreover, the three additional items related to perceptions about norms and expectations of partnering (i.e. whether or not partnering has already replaced traditional procurement methods, whether it will replace traditional procurement methods in the

Table 1 Descriptive statistics and inter-item correlations for all variables

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Partnering use[a, b]	.51	.50										
2. Perception of norms and expectations for partnering	3.36	.92	.23§									
3. Partnering will replace traditional procurement strategy in the next five years	3.21	.80	.22§	.26§								
4. Partnering has already replaced traditional procurement strategy	2.78	.87	.11*	.23§	.50§							
5. Partnering is likely to be the preferred choice of procurement strategy for firms	3.26	.75	.21§	.31§	.51§	.51§						
6. Partnering can significantly improve firms' efficiency/ profitability	3.56	.77	.36§	.34§	.44§	.25§	.48§					
7. Partnering is likely to make firms more competitive in the market	3.59	.76	.22§	.33§	.53§	.36§	.54§	.56§				
8. Partnering is likely to help firms win contracts and secure business deals	3.48	.78	.25§	.26§	.33§	.30§	.58§	.46§	.52§			
9. **Extent of partnering involvement**[c]	3.35	.67	.33§	.29§	.23§	.15†	.22§	.26§	.28§	.22§		
10. Size of firm[d]	53.31	270.36	.12*	−.02	−.09*	−.04	−.11*	−.02	−.10*	−.07	.03	
11. Age of firm[d]	18.78	14.24	−.03	−.01	−.11*	−.06	−.05	.02	−.06	−.05	.04	.24§

a: Variable is dummy coded where yes=1 and no=0.
b: Correlations for this variable are Spearman rank-ordered statistics. All others are Pearson product-moment statistics, list wise N=450.
c: Emboldened item comprises the summated mean score of six items relating to extent of partnering involvement.
d: Control variables.
*$p<.05$, †$p<.01$, §$p<.001$, two-tailed.

next five years, and whether it is likely to be the preferred choice of procurement method for firms) all registered positive correlations with partnering use, thus lending further support to Hypothesis 1, which states that the extent to which construction firms adopt partnering is influenced by the presence of strong industry norms and expectations for partnering. Partnering involvement is also significantly correlated with perception of norm and expectation for partnering ($r=.29$, $p<.001$) which suggests that firm's involvement in partnering activities is greater when a strong perception of partnering norm exists.

In testing Hypothesis 2, logistic regression is undertaken to examine what effect firms' perception of strong industry norms and expectations have in determining whether or not they are likely to use partnering. The single item variable '*Perception of norms and expectations for partnering*' is regressed against '*Partnering use*'. The sample is split into two 'polar' groups according to respondents' score on the variable '*Perception of norms and expectations for partnering*' – omitting those who responded on the neutral mid-point 3, the rest are grouped respectively as those that strongly agree that there is a strong partnering norm in the industry (coded 1, $n=248$) and those that strongly disagree that such norms exist (coded 0, $n=77$). Results of the logistic regression show the Wald test for the coefficient of perception of norm ($\beta=1.325$) is significant, $\chi^2=21.64$, 1 df, $p=.001$, suggesting that firms have a higher chance of using partnering when they perceive there is a strong industry norm and expectation for partnering. The following is the calculation of the probability of firms using partnering (1) when there is a strong perception of partnering norms and (2) when they do not have such a perception.

The logistic regression equation is: $\text{logit}_{(partering\ use)} = \beta_{0(constant)} + \beta_{1(partnering\ norm)}$

(1) *Probability of using partnering for firms with strong perception of partnering norms:*

$$\text{Logit}_{(partering\ use)} = -0.916 + 1.325(1) = 0.409$$

$$\text{Odds} = e^{.409} = 1.5053$$

$$\text{Probability} = \text{odds}/1 + \text{odds} = 0.6008$$

(2) *Probability of using partnering for firms without perception of partnering norm:*

$$\text{Logit}_{(partering\ use)} = -0.916 + 1.325(0) = -0.916$$

$$\text{Odds} = e^{-.916} = 0.4001$$

$$\text{Probability} = \text{odds}/1 + \text{odds} = 0.2858$$

Therefore, perception of partnering norm increases the chance of partnering use by:

$$\frac{\text{Probability for firms with strong perception}}{\text{Probability for firms without perception}} = \frac{0.6008}{0.2825} = 2.1267$$

It can be inferred that firms who perceive that there is strong industry norms and expectations for partnering are 2.1 times more likely to use partnering than firms who do not have such perception, and hence Hypothesis 2 is supported.

Hypothesis 3 suggested that firms will more strongly associate the use of partnering with increased firm competitiveness and profitability when they perceive that strong partnering norms exist. In order words, the predictive strength of firm competitiveness and profitability on partnering use depends on a moderator variable, which in this case is perception of strong partnering norm. The three variables related to firms' competitiveness and profitability due to partnering are used in the analysis. The moderator variable '*Perception of norms and expectations for partnering*' is converted into a binary variable using the same approach described earlier, where respondents who perceive the existence of a strong partnering norm are coded 1, and those who do not have such perception are coded 0.

Table 2 shows the overall results for the analysis, controlling for the effects of firm size and age. The analysis yields a couple of interesting results. First, on its own, none of the variables relating to firm profitability or competitiveness significantly predicts partnering use. The only variable that explains a significant amount of variance in partnering use is '*Perception of norms and expectations for partnering*' (β=.75, p<.05). This finding lends critical support to the proposition that industry norms play a significant role in determining whether or not firms will use partnering. Extending from this, this result casts serious doubt on the conventional view that increased firm profitability, efficiency or competitiveness are determinants of partnering use. It seems that firms are not motivated to use partnering solely because they think it will bring to their firm added profitability or help them win contracts and secure business deals. Second, that there is a significant positive interaction effect between '*Perception of norms and expectations for partnering*' and '*Improved firm efficiency/profitability*' on partnering use (β=1.15, p<.05) suggests that firms associate the use of partnering use with increased firm profitability only when they perceive that a strong industry norm for partnering exists. Although no significant interaction effects are registered for firm competitiveness or winning contracts and business deals, Hypothesis 3 is still supported. By virtue of its predictive strength, institutional norms and expectations for partnering contribute to firms' likelihood of using partnering. This finding reinforces the argument that firms that perceive the existence of strong partnering norms will conform to such norms by actually using partnering because, in doing so, they gain increased legitimacy in their business activities and with that comes the availability of strategic resources and increased survival capabilities.

Table 2 Results of logistic regression showing the effects of increased firm competitiveness and profitability on partnering use, and the interaction between them

Variables[a, b]	Partnering use
Control variables:	
Size of firm	.01 (1.65)
Age of firm	.01 (.38)
Main effects:	
A. Perception of norms and expectations for partnering	.75 (5.17)**
B. Partnering can significantly improve firms' efficiency/ profitability	.16 (.15)
C. Partnering is likely to make firms more competitive in the market	.54 (1.48)
D. Partnering is likely to help firms win contracts and secure business deals	.50 (1.81)
Interaction effects:	
A × B	1.15 (5.21)**
A × C	−.36 (.50)
A × D	−.49 (1.25)
Likelihood ratio chi square	70.18***
Nagelkerke R square	.289
df	9,288

a: Main and interaction effects are standardized z-scores.
b: Value in parenthesis is the Wald chi square test for the regression coefficient.
*p<.10, **p<.05, ***p<.01.

Discussion

This study sets out to examine the role that institutional norms plays in determining partnering use in the industry. Based on the premise that construction firms make rational and deliberate choices when it comes to deciding which type of procurement method to use, the study has distinctly shown that partnering use is much more heavily influenced by industry norms and expectations for partnering than by the financial

benefits that are associated with its use. In stark contrast to the widely held view that firms are able to benefit financially from using partnering and, hence, the assumption that such benefits *alone* would necessarily predict the use of partnering, the findings have shown that none of the financial incentives in terms of increased profitability, increased competitiveness or increasing the likelihood of firms winning contracts and securing business deals has any significant impact on partnering use at all (see Table 2). That '*Perception of norms and expectations for partnering*' is the only significant predictor of partnering use highlights the importance of firms to pursue 'social' fitness. Moreover, shown as a significant interaction effect, the relationship between partnering use and improved firm profitability is moderated by the extent to which firms perceive there is a strong norm and expectation for its use. This would mean that firms with a perception that partnering norms and expectations exist strongly in the industry are motivated to adopt partnering as conforming to such institutional pressures would add greater legitimacy and credibility to what they do. By complying with institutionally salient norms, firms view their choice of using partnering as rational because the added legitimacy might result in improved firm profitability through increased resource acquisition and reallocation. Hence, the extent to which partnering is deemed profitable seems to be dependent upon how institutionally entrenched the practice of partnering is in the construction industry generally – the more embedded the practice is, the more likely firms will become isomorphic in its use.

One other important finding, shown in the preceding probability calculations, is that firms holding a strong perception of partnering norms are *twice* as likely to use partnering than firms who do not have such a perception. Underlying this finding are two important insights. First, when firms make decisions about procurement strategies, institutional pressures, along with other economic-derived considerations, are regarded as rational factors that underpin those decisions. Second, firms that adopt partnering do so on the basis of the perception that the practice has become an industry norm. Hence, the question of why there has been no visible pattern of firms using partnering across the construction industry can perhaps be pinned to the lack of systemic, overriding institutional pressures that drive its use. Without such pressures, it can be argued that firms view partnering as just one of the range of procurement methods that are available to firms and the decision to use partnering or any other methods will then rest more squarely on economic and market factors. Because the benefits, or more precisely the economic and management advantages that firms could gain from using partnering are still debatable and difficult to measure, there is no *a priori* reason to expect firms to favour its use over other procurement methods other than the fact that there are obvious institutional norms that propel firms to use it.

Some limitations pertaining to this study deserve mentioning. Due to the cross-sectional nature of the study, results obtained cannot be taken as explaining causality between relationships. Although variables used in this study have demonstrated sufficient reliability, future research should expand the investigation to cover the effects of other factors not included here. It appears from Table 1 that the control variable, firm size, is significantly correlated with partnering use and so future research could look into how this might affect partnering use.

Conclusion and implications for future research

This study casts some empirical light on the reason for the apparent lack of partnering use in the construction industry. Despite the strong advocacy of partnering use and of the purported benefits that it brings, it seems ironic that its implementation has remained, at best, at a modest rate across construction industries. Past studies suggesting that the construction industry operates in a very competitively cost-driven environment have helped to partially explain the reason for the lack of incentive for firms to use partnering (Bresnen and Marshall, 2000; Wood and Ellis, 2005). However, examining the issue from a totally different perspective, the results of this study show that institutional norms for partnering are an important contributing factor determining when firms are likely to use partnering. This has significant implications on the way research on partnering should be undertaken in the future. Rather than focusing on purely economic determinants, studies should consider using institutional factors to predict partnering formation, development, processes and outcomes. As far as this study is concerned, institutional forces far outweigh the importance of economic forces in determining partnering occurrence. Firms are inclined to use partnering not so much because they see it as a superior procurement method that brings increased firm profitability or competitiveness *per se* but rather because they see that there is an advantage in the face of strong industry norms and pressures to use it. Hence future studies could usefully focus on how specific institutional pressures (i.e. regulations, policies, rules) determine the occurrence of partnering and to what extent. It appears from this study that the lack of strong institutional partnering norms in the industry largely explains why the

implementation of partnering has remained patchy. One possible research avenue that stems from this would be to explore differences in the level of institutional pressures that construction industries in different countries have in relation to partnering practice and to determine how this may in turn affect the level of partnering use. These new lines of enquiry will shed much-needed light on what actually determines partnering occurrence and why – a timely endeavour, given the history of partnering research has been predominantly focused on economic factors.

Notes

1. It has to be emphasized that although studies exist that report on partnering failures, the literature is almost entirely focused on 'success stories, which are largely anecdotal' (Wood and Ellis, 2005: 318). Perhaps this imbalanced reporting is one factor contributing to the prevailing simplistic view that partnering as a procurement method could bring direct benefits to all project parties, regardless of the nature of projects and their environments.
2. Larson (1995) reported results of 280 partnering projects in US and suggested that the approach leads to 'superior results' compared with tradition procurement methods. However, the study did not at all indicate what aspects of partnering contributed to project success.

References

Angelo, W.J. (1998) Partnering goes awry on Connecticut bridge job. *Engineering News Record*, **240**(18), 17.

Armstrong, J.S. and Overton, T.S. (1977) Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, **14**, 396–402.

Barlow, J. and Jashapara, A. (1998) Organisational learning and inter-firm 'partnering' in the UK construction industry. *The Learning Organisation*, **5**, 86–92.

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

Bayliss, R., Cheung, S.O., Suen, H.C.H. and Wong, S.P. (2004) Effective partnering tools in construction: a case study on MTRC TKE contract 604 in Hong Kong. *International Journal of Project Management*, **22**, 253–63.

Bennett, J. and Jayes, S. (1995) *Trusting the Team: The Best Practice Guide to Partnering in Construction*, Thomas Telford, London.

Black, C., Akintoye, A. and Fitzgerald, E. (2001) An analysis of success factors and benefits of partnering in construction. *International Journal of Project Management*, **18**, 423–34.

Bresnen, M. and Marshall, N. (2000) Partnering in construction: a critical review of issues, problems and dilemmas. *Construction Management and Economics*, **18**, 229–37.

Carmines, E.G. and Zeller, R.A. (1979) *Reliability and Validity Assessment*, Sage, Beverly Hills, CA.

Chan, A.P.C., Chan, D.W.M. and Ho, K.S.K. (2003) An empirical study of the benefits of construction partnering in Hong Kong. *Construction Management and Economics*, **21**, 523–33.

Cheung, S.O., Suen, H.C.H. and Wong, S.P. (2004) Effective partnering tools in construction: a case study on MTRC TKE contract 604 in Hong Kong. *International Journal of Project Management*, **22**, 253.

Construction Industry Institute (1991) *In Search of Partnering Excellence*, CII Special Publication, Austin, TX.

Cyert, R.M. and March, J.G. (1963) *A Behavioural Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ.

Dacin, M.T. (1997) Isomorphism in context: the power and prescription of institutional norms. *Academy of Management Journal*, **40**, 46–81.

Dainty, A.R.J., Briscoe, G.H. and Millett, S.J. (2001) Subcontractor perspectives on supply chain alliances. *Construction Management and Economics*, **19**, 841–8.

Dickson, P.H. and Weaver, K.M. (1997) Environmental determinants and individual-level moderators of alliance use. *Academy of Management Journal*, **40**, 404–25.

DiMaggio, P.J. and Powell, W.W. (1983) The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, **48**, 147–60.

Egan, J. (1998) *Rethinking Construction*, Department of the Environment, Transport and Regions, London.

Green, S.D. (1999) Partnering: the propaganda of corporatism? in Ogunlana, S.O. (ed.) *Profitable Partnering in Construction Procurement*, CIB W92 and CIB TG 23 Joint Symposium, E & FN Spon, London, pp. 3–14.

Greenwood, D. (2001) Sub-contract procurement: are relationships changing. *Construction Management and Economics*, **19**, 5–7.

Humphreys, P., Matthews, J. and Kumaraswamy, M. (2003) Pre-construction project partnering: from adversarial to collaborative relationships. *Supply Chain Management*, **8**, 166–78.

Kwan, A.Y. and Ofori, G. (2001) Chinese culture and successful implementation of partnering in Singapore's construction industry. *Construction Management and Economics*, **19**, 619–32.

Larson, E. (1995) Project partnering: results of study of 280 construction projects. *Journal of Management in Engineering*, **11**(March/April), 31–5.

Larson, E. (1997) Partnering on construction projects: a study of the relationships between partnering activities and project success. *IEEE Transactions on Engineering Management*, **44**, 188–95.

Lawrence, T.B., Hardy, C. and Phillips, N. (2002) Institutional effects of interorganizational collaboration: the emergence of proto-institutions. *Academy of Management Journal*, **45**, 281–90.

Li, H., Cheng, E.W.L., Love, P.E.D. and Irani, Z. (2001) Cooperative benchmarking: a tool for partnering excellence

in construction. *International Journal of Project Management*, **19**, 171–9.

Oliver, C. (1990) Determinants of interorganizational relationships: integration and future directions. *Academy of Management Review*, **15**, 241–65.

Oliver, C. (1996) The institutional embeddedness of economic activity. *Advances in Strategic Management*, **13**, 163–86.

Osborn, R.N. and Hagedoorn, J. (1997) The institutionalisation and evolutionary dynamics of interorganizational alliances and networks. *Academy of Management Journal*, **40**, 261–78.

Papadakis, V.M. and Barwise, P. (2002) How much do CEOs and top management matter in strategic decision-making? *British Journal of Management*, **13**, 83–95.

Partington, D. (2000) Building grounded theories of management action. *British Journal of Management*, **11**, 91–102.

Pfeffer, J. and Salancik, G.R. (1978) *The External Control of Organizations: A Resource Dependence Perspective*, Harper & Row, New York.

Phua, F.T.T. and Rowlinson, S. (2004) Operationalizing culture in construction management research: a social identity perspective in the Hong Kong context. *Construction Management and Economics*, **22**, 913–25.

Rajagopalan, N. and Datta, D.K. (1996) CEO characteristics: does industry matter? *Academy of Management Journal*, **39**, 197–215.

Scott, W.R. (1987) The adolescence of institutional theory. *Administrative Science Quarterly*, **32**, 493–511.

Scott, W.R. and Meyer, J.W. (1994) *Institutional Environments and Organizations*, Sage, Thousand Oaks, CA.

Scott, W.R. (1998) *Institutions and Organizations*, 2nd edn, Sage, Thousand Oaks, CA.

Van de Ven, A.H. (1976) On the nature, formation and maintenance of relations among organizations. *Academy of Management Review*, **1**, 24–36.

Watson, K. (1999) Is partnering starting to mean all things to all people? *Contract Journal*, 10 Feb., 14–16.

Williamson, O.E. (1985) *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, Free Press, New York.

Williamson, O.E. (1991) Comparative economic organization: the analysis of discrete structural alternatives. *Administrative Science Quarterly*, **36**, 269–96.

Wong, P.S.P. and Cheung, S.O. (2004) Trust in construction partnering: views from parties of the partnering dance. *International Journal of Project Management*, **22**, 437–46.

Wood, G.D. and Ellis, R.C.T. (2005) Main contractor experiences of partnering relationships on UK construction projects. *Construction Management and Economics*, **23**, 317–25.

Zucker, L.G. (1987) Institutional theories of organization. *Annual Review of Sociology*, **13**, 443–64.