

A preliminary survey of attitudes to UK construction procurement practice

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Abstract: *Although much literature on construction procurement is based on personal experiences, there is little data available to undertake realistic comparison between regions or from one year to another. A survey was undertaken in the UK to examine the feasibility of developing a replicable survey technique that will enable longitudinal studies and international comparisons. The survey showed that a majority felt traditional procurement methods were inappropriate. However, traditional general contracting is still the most common form of procurement. There was strong agreement that economic muscle compels weaker contracting parties to accept onerous contractual terms. There is no relationship between the size of a project and its procurement method, contrary to popular belief. The findings indicate that wider surveys would generate useful data about attitudes.*

Keywords: attitudes, contract structures, procurement, project management, survey.

INTRODUCTION

The study of construction procurement practice is often idiosyncratic and subjective. Many of the texts in this area are little more than the collected experiences of their authors. While these shed interesting light on this complex area, they provide little basis for analytical study of procurement practices. In an attempt to lay the foundations for a more objective and replicable study of procurement practice, a pilot survey was undertaken in the UK to examine the feasibility of collecting data on two areas: attitudes to construction procurement and typical current procurement practices.

BACKGROUND

Literature in procurement practice can be divided into four categories: anecdotal, explanatory, analytical and empirical. In the first category are works which offer the accumulated experiences of the authors. For example, Janssens (1991) describes what he sees as best practice in Design and Build projects but develops no theoretical insights. Such anecdotal reports are of interest to practitioners and form useful introductions for students, but they add little to our general understanding of the fundamental issues.

There are many text books about different procurement methods. These tend to offer explanations of terms, procedures and contracts but do not place them in the context of a comparison with other methods. Some focus on the management and administration of a project (e.g. Turner 1986), whereas others focus on the contractual issues (e.g. Powell-Smith and Sims 1988). In some cases, practitioners have recognized the complexity of the problem and developed approaches to analysing the procurement needs of each project (for example, Burger and Knoepfel 1986). This leads into the third category of literature which focuses on the way in which a procurement route ought to be chosen.

There are a few analytical approaches to the choice of procurement method. To develop a meaningful algorithm for making the decision, a comparative analysis of strengths, weaknesses and suitability of procurement methods must be undertaken. Hancock (1987) considered the selection of contractual arrangements in relation to the management of building contracts. While acknowledging that standardized solutions are not the answer to individual problems, his focus was the components which make up the system of contractual arrangements. He developed a conceptual framework based in systems theory, although this does not seem to have been empirically tested. Morledge (1987) emphasized the importance of the decision and identified some of the significant variables between projects but gave no advice on precisely *how* the decision ought to be taken. Chappell (1991), NEDO (1985), Skitmore and Marsden (1988) and Murdoch and Hughes (1995) all go further by offering frameworks for a rational decision about choosing whether a project should be undertaken as a general contract, design-build or construction management. Each identifies a slightly different set of variables which should be considered in the decision about contract

structure. Only Skitmore and Marsden undertake some empirical testing of their algorithm. One of the best surveys of the literature in this area (Masterman and Gameson 1994) demonstrates that very little of the work is based on research data.

The fourth category, empirical, is somewhat limited. However, there are some useful research studies taking place which seek to discover genuine insights into some of the issues. An example is the work of Robinson (1990) who identifies the lack of guidance on the selection of appropriate contractual terms for refurbishment and maintenance projects as *an acute* problem. Robinson argues for a modular system of preparing contracts so that the contracts are appropriate to the project at hand and he discusses contract selection criteria. He argues that standard form contracts have their uses but can be wholly inadequate in some kinds of project. A similar approach has been used in several forms of contract (Association of Consulting Architects 1984, Institution of Civil Engineers 1994, Fédération Internationale des Ingénieurs-Conseils 1984). These flexible approaches to contractual issues are typically based on the experiences of the members of negotiating committees and their contract drafters, rather than on any detailed empirical research work. The empirical data is somewhat limited. There is a biennial contract use survey, most recently undertaken by Bound (1994). This survey collects data only from quantity surveyors and is therefore naturally biased towards projects which involve a quantity surveyor. In addition, the sales figures of the UK's Joint Contracts Tribunal give some indication of the types of contracts being used.

The gap in the literature is clear. Most of the work in this field is based on pragmatism and experience. There is a need for a thorough analysis of the prevalence of certain practices and attitudes. The purpose of the work reported in this paper is to develop a survey tool for eliciting better data from practitioners than has previously been available. This requires that the survey is simple; limited to one sheet of paper. It also requires some technique for ascertaining contract structures so that the researcher can decide whether a particular structure fits into one procurement method or another. Simply asking practitioners which procurement path they used depends too much on a shared understanding of definitions which are far from universal. Indeed, if the technique is to be applied in other countries, it is important to avoid the use of UK terminology and assumptions about procurement practice.

Procurement problems in commercial construction

Construction contracting involves a combination of complex deals for a one-off product which represents a significant portion of a client's expenditure. The processes involved in putting the deals together are frequently haphazard and inappropriate. In order to build, a client must first initiate some design work, even if it is merely the specification of requirements. Thus, construction involves the placing of a series of contracts, some for professional services such as design, others for fabrication.

Certain trends in construction procurement are cyclical, and related to the economy. For example, economic recession tends to encourage price-cutting, and favours those firms who take a short term view of the development of the industry. This influences the deals which are done. For example, during boom times, many clients found that relieving their contractors of risks gave them lower tenders due to a reduced risk premium. In recession, contractors are too hungry for work to charge such risk premiums. At such times, contractors take ever larger risks to secure work, and ultimately this can wipe them out.

Along with cyclical trends, there is also a process of continuous change, most notably in technological development. Specialist and trade contractors are increasingly common due to technological complexity. In the last few decades technological progress in construction has accelerated. Specialism affects consultants as well as fabricators, and is an inevitable consequence of complexity. This adds to the number of firms who need to be involved contractually with a project, and creates extra demands for co-ordination and interface management.

The organization and management of construction projects, therefore, should be responsive to cyclical changes, but it also demands increasingly sophisticated management skills. The pattern of organization and management adopted by a client for a particular project is usually termed the *procurement system*. The most significant difference between procurement systems is the role of the main contractor, the second is the pricing mechanism for the construction work and the third is the way in which consultants are employed. These variables are interdependent. Co-ordination and management in a modern project call for skills which were not needed by general contractors a few decades ago. This has led to

clients demanding better construction management specialists. This in turn has led to an increasingly obvious separation of design from management, and conscious choices by clients about procurement routes. The alternative procurement methods fall into a few categories, with many variants of each. The variants outnumber the standard solutions, indicating that there is much that could be done in helping clients choose from among the most significant variables.

The contracts used to record the deals are typically based upon model or standard forms, negotiated at industry level between representatives of the major construction institutions. Contractual clauses can be obscure, confusing and based on outdated assumptions about responsibilities. Standard forms of contract are inflexible, and frequently inappropriate, and therefore usually require major amendments to make them suitable for use. The increasingly acrimonious disputes involving construction contracts are counter-productive and do not serve the best interests of the construction industry.

Common law jurisdictions allow parties the freedom to contract upon whatever terms they choose, and this freedom of contract is an important part of a free market economy. However, when there are serious imbalances of economic power between the contracting parties, contracts may be so onerous on the weaker party that they can become powerful tools of domination. This can thwart the equitable discharge of a contract; consequently the contract is not used as the law intends. Construction projects are commercial deals between free agents acting in a market situation and each deal is unique. The purpose of the contract is to allocate the risks involved in the project, and to record accurately the actual deal that has been made. This requires specialists in construction contract law, on both sides of the contract.

Many in the industry seem ambivalent about the potential role for construction lawyers. On the one hand, lawyers deal with litigation, and they can earn enormous sums of money in taking well-publicized cases through the courts. On the other hand, most firms of lawyers earn a large proportion of their income through non-litigious work, advising their clients how best to draft contracts, for example. The parties to a construction contract need to learn how to brief construction lawyers who can draft simple, effective and equitable agreements which accurately record the promises that are being made. There may be a need for legislation to regulate the

excesses of powerful contracting parties, but it is important that such regulation does not compromise the principle of freedom of contract. Unfortunately, few in the industry have the legal knowledge and skill needed for effective contract drafting and worse, many people are suspicious and distrustful of lawyers, especially in the early stages of putting together a deal. Although lawyers are trained to negotiate and are capable of writing clear and effective contracts, the construction industry has often focused upon a contract as an agenda for litigation and upon lawyers as advocates in litigation. Lawyers are capable of undertaking much more preventive work, but this resource is inadequately used. While these problems remain, it is difficult to imagine ways in which the industry can develop more effective methods of putting deals together.

New approaches are needed which will enable clients to use their project objectives, within the context of the project environment, as a basis for choosing the procurement pattern and ultimately for drafting workable contracts which accurately reflect the deals being struck.

These arguments form the basis of the questionnaire survey. Respondents were asked to react to these ideas in answering the subsequent questions.

METHOD

A questionnaire survey was undertaken to examine the range of attitudes to a few procurement issues. The questionnaire was designed to cover the full range of procurement practices and to seek connections between peoples' attitudes and their work experience. The questionnaire (shown in the appendix) consisted of three parts; first, details of the respondent; second, their views on a limited range of procurement issues and third, a few pieces of data about their current or most recent project. This third section was designed to ascertain a "snap-shot" of current procurement patterns in use. This data will grow increasingly useful as the survey is repeated in future years to develop a longitudinal study of procurement practices.

314 questionnaires were distributed in the UK to construction lawyers, building surveyors, architects, quantity surveyors, engineers, contractors and sub-contractors. The names and addresses were selected at random from the published

lists of various professional institutions and learned societies. 69 useful responses were received; a return rate of 22%.

RESULTS

The results are in three sections; profession, attitudes and a snapshot of current procurement practice.

Profession

The first part of the questionnaire asked for the name, address, profession and location of the respondent. The professions represented by this sample are given in Figure 1. This shows a strong presence of quantity surveyors, representing one third of the sample. The questionnaires were sent in roughly equal proportions to each of the professions. The return rate indicates that a much larger number of questionnaires should be sent for the next survey, perhaps increasing the numbers for each group so that a better cross-section is collected.

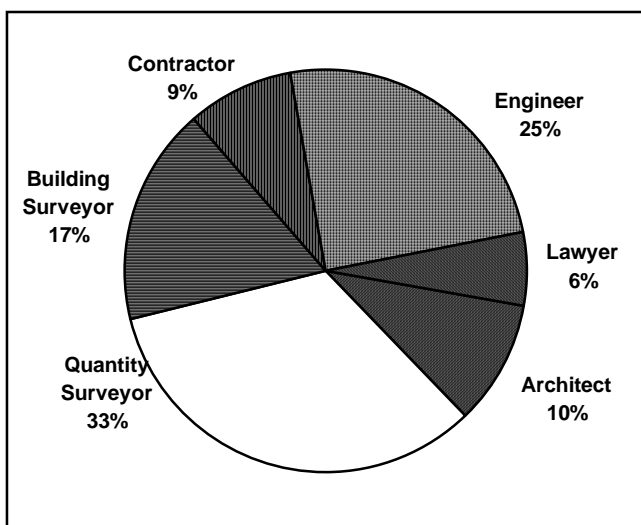


Figure 1: Professions in the sample

Attitudes

The questionnaire raised nine questions of attitude in relation to the arguments presented with the form. They are each dealt with below and summarized in Figure 2.

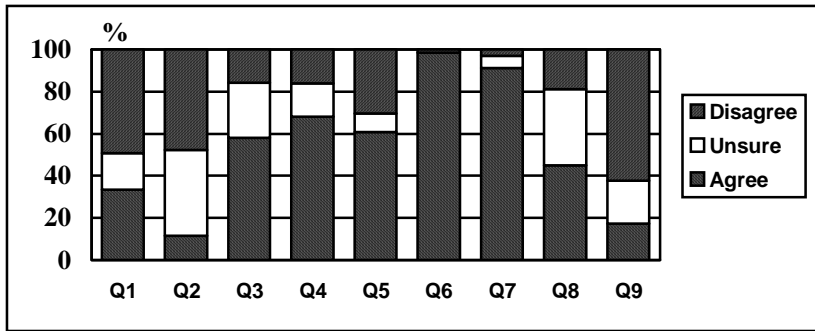


Figure 2: Summary of Section 2 responses

Q1: Construction contracts tend to be well-drafted and appropriate

Half of the respondents disagreed with this statement and of the remainder many were unsure. Only one third of the respondents agreed that contracts tend to be well drafted and appropriate. In the context of this questionnaire, this implies that they do not acknowledge that there are serious problems with the contracts that they currently use.

Q2: Construction contractors use risk analysis techniques to calculate risk premiums

Only 12% agreed with this, fewer than with any other assertion. More people were unsure about this point than about any other. It was clear from the comments added to many of the forms that those who are not contractors do not care to speculate about how contractors calculate their prices.

Q3: Only contractors with a secure market position include a risk premium in their price

Just over half of the respondents agreed that a risk premium is included only in the prices of those contractors with a secure market position. Quite a large proportion were unsure. In conjunction with the previous question, this result shows that most people believe that contractors' prices are influenced by the apportionment of risk although they have little knowledge about how prices are calculated.

Q4: Fragmentation of the construction process is likely to continue increasing

A clear majority (68%) agreed that fragmentation was likely to continue increasing. The remainder were evenly split between disagreeing or being unsure.

Q5: High information and co-ordination demands cannot be met by traditional procurement methods

A small majority agreed with this statement. Not many respondents were unsure (9%). Clearly, on this issue at least, respondents find it easy to make up their minds. The fact that 61% of respondents agree that traditional procurement methods are inadequate must raise questions as to why traditional methods prevail.

Q6: Economic muscle enables parties to force onerous contracts on to weaker partners

The result for this question is remarkable in the overwhelming agreement from all respondents. Only one person disagreed! Considering the wide spread of sizes of firms in the industry, there is clearly a problem perceived here.

Q7: The purpose of a contract is to allocate risks and to record the deal accurately

This statement also generated a resounding agreement (91%). A few respondents were unsure and some disagreed. But the strength of the agreement is difficult to reconcile with the widespread use of standard forms in the industry.

Q8: Construction lawyers can help contracting parties avoid disputes

A lot of respondents (36%) were unsure about the idea that construction lawyers could help contracting parties avoid disputes. But 45% of the respondents agreed that they have this potential.

Q9: Most people in the respondent's country's construction industry have the skill to negotiate good deals

Very few people agreed with the idea that most of their compatriots were skilled negotiators. In fact, 62% disagreed. This is a sad reflection of the perceptions that the respondents have of the people in their industry. Clearly, there is a strong feeling that those who negotiate deals and draw up contracts should become more adept at the requisite business skills.

Current procurement practice

The final section of the questionnaire asked respondents to give some details of the project with which they were most recently involved. The intention was to get an

idea about the relative frequency of each of the procurement methods. To get an idea of the scale of the project, respondents were asked for its value and duration. To understand the procurement path, they were asked whether the contractor had responsibility for design and at what point in the process the contractor had been appointed. They were also asked whether the lead designer was employed by the client or by the contractor and whether specialist trade contractors had any design responsibility. Finally, they were asked to delineate the contract structure, explaining who was contracted to whom, under what kind of standard form (if any), indicating the rough extent of amendments to the standard. This information provided sufficient data to categorize the procurement method into four types; traditional general contracting (TGC), design-build (DB), management contracting (MC) and construction management (CM). TGC is where the contractor is appointed at the beginning of the construction stage with no design responsibility and employs the specialist/trade contractors. MC is a special case of TGC, having an identical contract structure, only distinguishable in this survey by the name of the contract being used. DB is similar, except that the contractor has design responsibility and may be appointed at an earlier stage in the process (although not necessarily). CM is distinguishable by the contract structure alone in that all of the contracts, especially those of the specialist trade contractors, are held by the client. The relative proportions of each procurement method are shown in Figure 3.

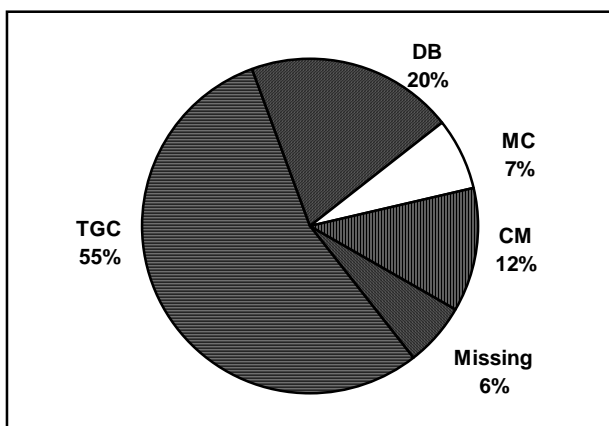


Figure 3: Distribution of procurement methods

By way of a cross-check, Bound's (1994) survey was based on data collected during the same year and showed very similar percentages for TGC and MC but a much larger proportion (36%) for DB and a much smaller proportion (4%) for CM. Since Bound's survey only draws on quantity surveyors, it may be that these differences

are due to a predisposition for quantity surveyors to work in certain kinds of projects. With only 99 returns, sample sizes are too small to be clear about this. Just how small the samples are is revealed by the JCT's sales figures. In 1993, they sold 18,500 copies of JCT 80, 24,000 copies of IFC 84 and 72,500 copies of the minor works form. These represent 115,000 TGC projects of varying sizes. By contrast, they sold around 14,000 copies of CD 81, their design and build contract.

In 61% of the responses, specialist trade contractors had design responsibility. In 83% of the cases, the lead designer was employed by the client and not the contractor. Presumably, since DB contracts only constituted 20% of the sample, this means that some DB contracts involve the contractor's designers with employers' designers in some way that is not revealed by the questionnaire survey. The wide range of practices in the relationship between client and designer accounts for the many "variants" of DB that commentators write about so extensively. The data revealed that in 57% of the cases, the contractor was appointed at the construction stage. This is a useful cross-check on the interpretation shown in Figure 3 that 55% of the projects were TGC. Coincidentally, 55% of the contracts used were standard forms published by JCT. It is doubtful that this is a direct correlation with TGC since JCT, at the time of the survey, also published contracts for both DB and MC.

DISCUSSION

The balance between the professions should be looked at in future surveys in terms of the relative proportions of the professional institutions at a national level. In this pilot survey the same numbers were despatched to each profession. This may give a distorted picture rather than a cross-section.

In terms of the appropriateness and quality of contract drafting, the majority of respondents felt that contracts were not well drafted. Their views confirm Latham's (1994) criticism of standard contracts and the comments of various judges about the notorious lack of clarity in standard forms--one judge observing that such a widely used form *should be so deviously drafted with what in parts can only be a calculated lack of forthright clarity*,¹ another referring to a standard form as a *farrago of*

¹ per Sachs, LJ in *Bickerton v. N.W. Metropolitan Hospital Board* [1977] 1 All E.R. 977.

*obscurities.*² In one case which did not even concern a JCT contract (then known as the RIBA form) it was observed that *if a prize were to be offered for the form of building contract which contained the most one-sided, obscurely and ineptly drafted clauses in the United Kingdom, the claim of this contract could hardly be ignored, even if the RIBA form of contract was among the competitors.*³ Such harsh words are less common these days, perhaps because the courts now recognize the importance of the construction industry as a customer of the courts (Anderson *et al.*, 1995: I-175).

Many people feel instinctively that contractors ought to include a premium in their prices to cover for high levels of risk. This would be straightforward business sense. However, there is no evidence that they do so. The responses to this questionnaire indicate that respondents are generally unsure, perhaps confirming that although contractors ought to include a risk premium, in practice they do not. This unsureness is disappointing. While it may seem, on the face of it, that consultants should not be expected to know the ins and outs of contractors' pricing policies, it is the consultants who typically have the strongest influence over the choice of risk apportionment. Therefore, perhaps it is not unreasonable to expect them to understand the consequences of their decisions. The survey has suggested that contractors who need work cannot afford to price for risk. Moreover, if a bidding competition includes contractors who do not have the acumen to identify, analyse and price risks, then such inept contractors will always win the bidding unless the more adept bidders also disregard the risks in their calculations. Finally, contractors' pricing policies are far more complex and subjective than a simple calculation of costs plus mark-up plus risk premium. The use of risk analysis techniques has been investigated by Simister (1994). While his work focused on project managers, rather than contractors, it did reveal that although project managers were clearly aware of a wide range of techniques, they used only the more traditional techniques. The use of risk analysis and management techniques was shown by Simister to be largely a response to client demand. Presumably, contractors would also respond to such demand, if it were there.

² *per* Davies, LJ in *English Industrial Estates Corporation v. George Wimpey & Co Ltd* [1973] 1 Lloyd's Rep 118 at 126.

³ *per* Salmon LJ in *Peak Construction (Liverpool) Ltd v McKinney Foundations Ltd*. (1971) 69 LGR 1, CA.

Questions 4 and 5 pursued a slightly different theme. Organizational theory predicts that specialized skills proliferate as technology becomes more complex (Lawrence and Lorsch 1967). There is plenty of evidence of a general increase in complexity and so it is to be expected that fragmentation will increase in line with this. The survey confirms that most respondents share this view. The corollary of an increase in fragmentation is a higher demand for integration and co-ordination (Lawrence and Lorsch 1967). The survey shows that a clear majority are worried about the unsuitability of traditional procurement methods in dealing with high information and co-ordination demands. These results indicate that modern, complex projects demand a move away from traditional organizational and contractual methods.

Question 6 revealed that nearly all of the respondents perceive the consequences of a mis-match of economic strength. Such consequences led to consumer protection legislation, among others. But when contracting parties are firms, free to choose the terms of their own contracts, the law assumes that they are at liberty to draw up whatever bargains they choose, in their own commercial interests. It is interesting to speculate on the equitability of this traditional approach. Such speculation has led to recent recommendations for a contract code for the construction industry to curb the excesses of some contracting parties (Latham 1994). There seems to have been little real debate on the extent to which this flies in the face of free market philosophies.

The strong support for the notion that contracts record business deals and allocate risks is odd. Presumably, these people use standard construction contracts because they happen to be an accurate reflection of what they negotiate. Alternatively, there may be a mis-match between what is printed in a standard form and what the parties have agreed. This latter interpretation is borne out by a variety of court cases where the parties to a contract have quite clearly agreed between themselves some of the terms but have not ensured that the standard form gives effect to their agreement. In such cases, the courts will hold the parties to the terms that were actually signed.⁴ To do otherwise would be to open the floodgates to those who wish to be relieved of a bad bargain by claiming that the contract as signed was not an accurate reflection of their intent.

⁴ See, for example, *MJ Gleeson (Contractors) Ltd v Hillingdon London Borough* (1970) 215 EG 165.

The result for question 8 is interesting as it is difficult to involve lawyers in the negotiations leading to a contract. Too much overt attention to contractual details at an early stage in a business relationship can create a poor impression, implying an over-reliance on sanctions rather than a willingness to co-operated freely and fully.

The final question about attitudes was related to the skills required for negotiating good deals. The majority of respondents feel that their compatriots are unable to strike good deals. This perceived lack of skill may be one reason why standard forms proliferate. As each professional institution feels that its survival is threatened by developments in the industry, one way in which they seek to control the construction market is to ensure a role for their members in projects by producing standard contracts which are based upon the assumption that certain practitioners will be involved. Thus, when a JCT 80 contract is selected, this will inevitably require the appointment of architect and quantity surveyor. Similarly, ICE 6 requires that a chartered engineer is involved in the project. Perhaps such practices are successful simply because most people perceive that the only alternative to standard forms is some kind of anarchic chaos.

ANALYSIS

The results have been analysed for inferences using cross-tabulations and chi-square correlation coefficients to look for relationships between various aspects of the data. This analysis has revealed some interesting and useful information about procurement practices and attitudes.

In looking for relationships between professional background and the nine questions related to attitude, only one correlation was significant--lawyers all felt that construction lawyers can help parties to avoid disputes. When the other professions were cross-tabulated with the responses to this statement, just over half of the architects and surveyors agreed but very few contractors or engineers agreed.

Relationship between practitioners' attitudes and their profession

There is a very strong relationship between attitudes and profession. While it is difficult to be clear about the attitudes which typify each profession, it is clear from the chi-square tests in Table 1 that the relationship is strong. This result is disturbing

because it demonstrates a lack of consensus between the professions, coupled with a strong consensus within professions. The indication is that the adversarial instincts which are so widespread in the construction industry (Latham 1994) are deeply ingrained in the institutional infrastructure of the industry.

Table 1: χ^2 results for relationships between attitudes and professions

Variable	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
χ^2	10.52	15.21	19.91	35.57	28.43	65.06	104.43	7.30	26.17
p	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00

Relationship between practitioners' attitudes and project value

This relationship generated two surprising correlations. There were two attitudes closely related to project value. First, there was a very high significance ($p=0.00$) in its relationship with the idea that construction contracts are well-drafted. Second, there was also a strong relationship ($p=0.01$) with the idea that traditional methods cannot meet high information and co-ordination demands. These findings indicate that practitioners working on low-value projects tend to see construction contracts as well-drafted and traditional procurement methods as being adequate. Therefore, it would seem that discontent with traditional procurement methods is mostly likely to arise in large, high-value projects.

Relationship between practitioners' attitudes and percentage of amendments

Another interesting correlation is that respondents who worked on projects with highly amended contracts felt strongly that economic muscle was a factor in getting weaker parties to accept onerous contracts. This correlation ($p=0.01$) indicates that they speak from experience, i.e. those who agree with the proposition are typically involved with projects where contracts are either heavily amended or bespoke.

Indicators of procurement method

Several variables have strong associations with the procurement method. First, the association between procurement method and contractors' design responsibility is very significant ($p=0.00$). Second, the stage at which the contractor is appointed is very strongly associated with the procurement method. Third, the employer of the

designer is strongly associated with procurement method ($p=0.02$). Fourth, sub-contractors' design responsibility seems unrelated ($p=0.21$) to procurement method. These relationships confirm the key distinguishing features of procurement method.

Some of the literature discussed earlier suggests that certain procurement methods (CM, MC) are better suited to large and complex projects. To test this, one-way analysis of variance was used to look for differences between procurement methods in terms of project duration or project value. Table 2 shows the results of this test. The F Probability for both variables is greater than 0.05, therefore, it is clear that there is no significant differences among procurement methods with regard to duration or value.

Table 2: Analysis of variance for procurement method vs duration and value

Variable	D.F.	F Ratio	F Probability
Project duration	3	3.35	0.30
Project value	3	2.99	0.18

Further exploration of the data was undertaken using Duncan's multiple range test to seek differences between the procurement methods. This showed that no two methods differed from each other at the 0.05 level. However, Duncan's test did show that TGC and CM differed with regard to the value of the project as shown in Table 3. This indicates that, in this sample, TGC is used for cheaper projects than CM.

Table 3: Duncan's test for differences between procurement methods

Procurement method	TGC	MC	DB	CM	Mean
TGC					12.40
MC					20.00
DB					20.37
CM	*				64.86

Satisfaction with status quo

Several questions relate to the perceptions of the respondents to the adequacy of traditional approaches. Broadly speaking, someone who is satisfied with the status quo would score low on questions 1 and 9, high on questions 4, 5 and 6. To test

this, the five variables were combined into one and correlated with project value. This gave a very strong relationship ($p=0.002$) indicating that those who worked on big projects sought a move away from traditional methods whereas those who worked on small projects were generally satisfied with the way things were and perceived few fundamental problems.

CONCLUSIONS

This pilot study has shown that the lack of data about procurement practices is not due to any inherent difficulty with the nature of the problem. By targeting data subjects and designing a questionnaire to elicit simple information a variety of statistical tests can be applied to infer a rich variety of useful conclusions from a very small amount of data.

Future surveys should be distributed to a mix of professions that reflects the relative proportions of their numbers at a national level.

The survey has revealed a basic breakdown between the major procurement methods, but this is at a coarse level of detail. For example, the data on design and build projects does not reveal whether the contractor has any choice in the designer, or the extent to which the design is completed before the contractor is appointed. Similarly, the construction management data does not reveal whether the construction manager had an input into the role of the designer, or *vice versa*. These distinctions are useful in learning more about the way in which projects are procured and can be included in an improved future run of the survey.

This small sample shows that there are clear indicators of procurement method. It would be interesting in future to ask the respondents how they described the procurement method. This would provide a useful indication of the consistency with which terminology was used.

This work paves the way for a larger study which can be repeated at regular intervals to augment the data with longitudinal studies. Further, by undertaking similar surveys in other countries, based on the same set of questions, comparisons between different countries' construction industries can be carried out.

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APPENDIX: QUESTIONNAIRE

Name Profession

Organization

Address

After reading the attached article, please circle the appropriate number indicating the extent to which you agree with each statement.

	Strongly disagree			Not sure		Strongly agree
1. Construction contracts tend to be well-drafted and appropriate	1	2	3	4	5	
2. Construction contractors use risk analysis techniques to calculate risk premiums	1	2	3	4	5	
3. Only contractors with a secure market position include a risk premium in their price	1	2	3	4	5	
4. Fragmentation of the construction process is likely to continue increasing	1	2	3	4	5	
5. High information and co-ordination demands cannot be met by traditional procurement methods	1	2	3	4	5	
6. Economic muscle enables parties to force onerous contracts on to weaker partners	1	2	3	4	5	
7. The purpose of a contract is to allocate risks and to record the deal accurately	1	2	3	4	5	
8. Construction lawyers can help contracting parties avoid disputes	1	2	3	4	5	
9. Most people in my country's construction industry have the skill to negotiate good deals	1	2	3	4	5	

The remaining questions are aimed at deriving a 'snapshot' of the way in which construction work is typically procured. Please use as an example the project with which you were most recently involved.

10. What is the approximate value of the project?
11. What is the approximate duration of the project?
12. Does the main contractor have responsibility for design?
13. At what stage in the process was the main contractor (or construction manager) appointed? (e.g. sketch design, detail design or construction)
14. Is the lead designer employed by the client or the contractor?
15. Do the specialist/trade contractors have any design responsibility?

List the most important six firms involved in this project (e.g. architect, contractor etc.). Next to each, identify to whom they are contracted, the name of the terms of engagement or the form of contract between them and an indication of the extent to which it has been modified (to the nearest 10%). One-off forms should be signalled by entering 100%. In the final column indicate the nature of the work for which this firm has been employed (e.g. design, fabrication).

	Type of firm? (e.g. architect)	To whom are they contracted? (e.g. client)	What is the name of the agreement between them? (e.g. SFA/92)	How much has it been amended? (%)	For what type of work is this person/firm engaged? (e.g. design)
a					
b					
c					
d					
e					
f					