SUBCONTRACTORS' PERCEPTIONS REGARDING BID SHOPPING IN AUCKLAND, NEW ZEALAND

Derek Thurnell[1] and Ivan Lee[2]
[1] *Department of Construction, Unitec, Private Bag 92025, Mt Albert, Auckland, New Zealand*
[2] *Ebert Construction Limited, PO Box 37 840, Parnell, Auckland, New Zealand*

Main contractors use bid shopping to reduce a subcontractor's quoted price. The literature suggests that this is a practice disliked by many subcontractors and that the subcontractor's loss of revenue and margin is an important consequence. The vast majority of subcontractors in New Zealand are small in size, thus bid shopping can lead to subcontractors having greater exposure to additional financial risk, arising from the reduced margins they must accept. Whilst bid shopping has been mentioned as part of research on issues such as ethics and tendering practice, few empirical studies have directly focussed on bid shopping, and specifically, sought the perceptions of subcontractors themselves on the effects of bid shopping on their business. A questionnaire-based semi-structured interview survey of subcontractors was conducted, seeking their opinions on the prevalence, and seriousness of, bid shopping, what the effects of it are, and what measures they took to prevent their quotes from being bid shopped. The results established that bid shopping takes place regularly and is a matter of much concern to subcontractors, having a negative influence on their pricing decisions and the quality of the work they do. It also places more stress on the subcontractor's staff and limits the growth of their business. Significant implications for the construction industry are associated with safety on site, the quality of the subcontracted work, and the image of the main contractor in the market place. A link was suggested between the incidence of bid shopping and the state of the construction market.

Keywords: bidding, bid shopping, ethics, sub-contracting, tendering.

INTRODUCTION

Bid shopping, an American term, refers to the practice of reducing the subcontractor's quoted price in a particular manner. May, Wilson and Skitmore (2001), in an empirical survey of Australian bid shopping practice, explain that the reduction is achieved by providing the lowest quoted price already received, as an inducement to competing subcontractors, who will then underbid the original quote if they want the work. The main contractor then either accepts the new lower price or else approaches the subcontractor that submitted the lowest initial quote with a request to match the new price.

Bid shopping first attracted construction researchers in the 1980s: Uher and Runeson (1984) conducted an interview survey of Australian subcontractors on pre- and post-tender negotiations, which included the issue of bid shopping. Hinze and Tracey (1994) highlighted the issue once more in their survey of American subcontractors, and the more recent survey of various issues in subcontracting practice by Arditi and Chotibhongs (2005) found the practice to be common in the USA, as it is in Australia, where it is perceived as being a problem (May *et al.* 2001). In a desktop review of

[1] dthurnell@unitec.ac.nz

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American bid shopping practice, Degn and Miller (2003) asserted that one of the consequential detrimental effects of bid shopping is, perhaps most significantly, that it negates the benefits of competitive tendering. They go on to assert that bid shopping exposes the subcontractor to additional financial risk, arising from the reduced margins it must accept, or risk losing the work. This is of particular significance to this present study; since subcontractors determine the main contractor's performance, it would seem logical to determine whether bid shopping has any effect on the subcontractor's business. This aspect appears not to have received much attention in the literature. This research, therefore, seeks to investigate the subcontractor's view of the impact of bid shopping on the subcontracting firm.

Crowley Hager and Garrick (2000) examined the position of small subcontractors in the Australian construction industry, and suggested that the small subcontractor's attitude to business is based upon the need to compete in a very competitive market; with low margins prolonging under-capitalisation, which in turn prevents growth, perpetuating low margins. This may be especially so in New Zealand, where small subcontracting firms play a hugely significant role; the proportion of small (i.e. 0-9 employees) firms is consistently in the region of 94% of all subcontractors (Statistics New Zealand 2008).

Most previous empirical studies in the field have been focussed specifically on topics other than bid shopping (Arditi and Chotibhongs 2005; Hinze and Tracey 1994; Jackson 2005; Vee and Skitmore 2003; Zwick and Miller 2004). Other research did not focus specifically on the subcontractor's perceptions of bid shopping (May *et al.* 2001; Smith Mojica and Clarke 2006). There has been little research with a focus on the subcontractor's perceptions of the impact of bid shopping on their business, particularly of smaller sized subcontractors, who arguably suffer more severely the detrimental effects of bid shopping. The only empirical study found which was concerned with subcontractors' perceptions of bid shopping (Shash 1998) was a postal questionnaire survey investigating bidding practices of subcontractors in the USA. However, characteristically of postal surveys, it suffered from a very low response rate of less than 10%, and only one section of five in the questionnaire related to bid shopping, and didn't seek subcontractors' views on the impact of bid shopping on their business.

As distinct from this body of earlier work, this present study aims to canvass subcontractors to determine their perceptions of the impact of bid shopping on their own business, and what steps they take to counter the practice, if any. Due to the (self-imposed) constraint of a small sample size, a face-to-face, semi-structured interview survey approach was used, utilising a questionnaire informed by the (albeit limited) literature. The target sample population was limited to that of mechanical and electrical "specialist" subcontractors in Auckland, New Zealand. The authors felt that these trades were most likely to experience bid shopping, due to their common characteristics (in Auckland, at least) of being generally smaller firms; specialist in nature, operating in an extremely competitive market, but with a comparatively high value of subcontracts, relative to "trade" subcontractors.

BID SHOPPING

When bid shopping occurs during the tendering stage, it is known as pre-award bid shopping. When it takes place after the award of the main contract it is known as post-award bid shopping. Before examining these two types of bid shopping, it is worth briefly addressing other methods by which tender prices can be reduced. Alternatives

include reverse auctions, which are described as one sided, descending, open bids (Bieberstein 2002, cited in Horlen, Eldin and Ajinka 2005). In a reverse auction the buyer invites sellers to bid. The term 'one sided' refers to the one-to-many relationship (one buyer invites many sellers). The term 'descending' refers to the falling bid prices as the bidders compete until the auction time expires. Reynolds (2001) groups reverse auctions into 4 types: English, Dutch, Yankee and Vickrey (cited in Horlern *et al.* 2005). Bid shopping can be mistakenly referred to as a reverse auction or as a "Dutch auction". These reverse auctions are conducted according to set rules including disclosure of information. All the participating bidders know the current lowest bid and are invited to underbid it (Horlern *et al.* 2005). Bidders take part willingly and the rules are known to all, whereas in bid shopping the owner of the bid that is being shopped has no knowledge that his bid is being used to coerce other bidders into reducing their bids. Clearly, they are quite different.

Pre-award bid shopping

Some researchers consider this type of bid shopping to be more acceptable to subcontractors because it is viewed as the inevitable part of free competition, and also because they believe that the client benefits from the resulting lower prices (Degn and Miller 2003; Hinze and Tracey 1994). Furthermore, subcontractors believe they have some control over the practice during this pre-award period; they can prevent their quotes from being shopped by submitting their quotes just before the main contractor's deadline for submission (Degn and Miller 2003). This strategy of "just-in-time" quote submission does provide some protection but can cause problems later. The main contractor cannot check the subcontractors' quotes for errors and incomplete scope; this can be used to justify any post-award bid shopping by the main contractor (May *et al.* 2001; Shash 1998).

Post-award bid shopping

This is considered the more damaging type of bid shopping to both the main and subcontractor, chiefly because, as mentioned earlier, it negates the benefits of the competitive tendering process (Degn and Miller 2003). Tendering encourages competition; each subcontractor is encouraged to present their best or most economical price for doing the work. Since the main contractor carries the risk in terms of time, quality and cost, inducing subcontractors to go below their most economical price increases not only the subcontractor's, but also the main contractor's risk. Arditi and Chotibhongs (2005) consider post-award bid shopping to strain subcontractor-main contractor relationships, whereas Degn and Miller (2003) condemn it as being unethical and damaging. However, as Smith Mojica and Clarke (2006) have commented, bid shopping is not illegal.

Why bid shopping exists

Unethical behaviour

Main contractors generally bargain with subcontractors from a position of power, which May *et al.* (2001) consider can lead to unethical behaviour and exploitation of the subcontractor. Vee and Skitmore (2003), in their survey of professional ethics in the construction industry, found that post-award bid shopping is viewed as being unethical because the decision to bid shop deprives the subcontractor of work fairly won in a competitive tender. Post-award bid shopping is considered unfair and reveals commercially sensitive tendering information. Those that benefit from the practice consider it acceptable while those that suffer from it consider it to be wrong.

Bid shopping increases profit
Post-award bid shopping does not reduce the contract price; any reduction in costs would be for the main contractor's benefit and increases their profit (Shash 1998). The prevailing opinion on why bid shopping occurs is that it appears to be attributed to the main contractor's desire to increase profit (Degn and Miller 2003; Smith Mojica and Clarke 2006).

Bid shopping compensates for errors in tendering
The time between the award of the main contract and the award of the subcontracts is termed the buy-out period. During the buy-out the contractor may find that the profitability of the project decreases for reasons such as: a subcontractor's quote used in compiling the submitted tender contained an incomplete scope of work; the main contractor's estimator was too keen to obtain the project, or the main contractor's estimator did not understand the scope of the project (Zwick and Miller 2004). A realisation of decreased profitability causes the contractor to either engage in bid shopping or to re-tender the works not yet subcontracted in an effort to regain profitability. This re-tendering is in fact another form of bid shopping because competing subcontractors are now aware of what the original lowest quoted price was (Zwick and Miller 2004). Indeed, many subcontractors think that the main contractor undertakes bid shopping to compensate for underbidding (Smith Mojica and Clarke 2006).

The main research question to be addressed is: what are the perceptions of Auckland mechanical and electrical subcontractors regarding bid shopping? The sub-questions to be addressed are: how frequently does bid shopping occur? How seriously is bid shopping viewed? What measures are taken by subcontractors to prevent bid shopping? What are the consequences of bid shopping for the subcontractor? In addition, this study also aims to determine if the prevalence of bid shopping has changed over time, and what implications this may have for the construction industry. The loss of revenue and margin for the subcontractor is an important and predictable consequence of bid shopping; this research aims to determine if there are other less well-known consequences for the subcontractor's business.

RESEARCH METHODS

Bid shopping in Auckland commercial construction subcontracting was investigated using an interview survey approach. This study assumed a traditional competitive tendering situation in which the main contractor invites subcontractors to quote and the subcontracts and main contract are won through competitive tendering.

The objective was to determine the subcontractors' view on how frequently main contractors bid shop quotes during tendering as well as their feelings about the practice. To achieve these objectives required the subcontractors to report on their opinions and knowledge. The most appropriate method for collecting such data was considered to be an interview survey, which "focuses on the respondents experience regarding the situation under study" (Naoum 2007: 56). The semi-structured face-to-face interview method was chosen, in which the research instrument was a questionnaire. As no suitable questionnaire was discovered during the literature review, one was developed by the authors (contact the authors for the complete questionnaire). The advantages of the interview survey are high response rates and improved reliability. Reliability is improved because the interview conditions are known and the interviewee is the chosen respondent (Naoum, 2007).

The questionnaire collected both quantitative and qualitative data, using a mix of open and closed questions. A quantitative scale was devised to determine how often bid shopping is perceived to occur. A four category Likert type scale was developed to measure the seriousness with which bid shopping is viewed; the categories are mutually exclusive. The remaining survey questions were open-ended, requiring qualitative responses. Assurances of confidentiality and the lack of traceability helped in minimising non-responses.

Since this research is concerned with the perceptions on bid shopping, a random sample of subcontractors from all trades could not be used, because the sample size is too small and because not all trades will experience bid shopping. The use of a random sample could miss some of those trades that are more likely to experience bid shopping, viz: the mechanical and electrical services trades. Due to this stratified sample and the sample size (10 participants from 2 trades), no statistical analysis was performed, and any generalisation of the results is limited. Analysis was limited to qualitative discussions and tabulating the frequency of each response to each of the questions or variables.

RESULTS

All participants indicated that bid shopping in the electrical and mechanical services trades occurred in at least 30% of all tenders for which quotations were submitted. Interestingly, the responses were split into two clear groups. The group of five participants who perceived bid shopping to occur in 30% or less of tenders were also the group with less direct experience of bid shopping, whilst the other group of five participants (with more direct bid shopping experience) perceived bid shopping to occur in 50% or more of tenders quoted on. All the participants thought that the practice of bid shopping was a serious matter and only two of the ten participants distinguished between pre- and post-award bid shopping. These two participants viewed pre-award bid shopping as ‘not serious’ but viewed post-award bid shopping as ‘serious’. The other 8 participants condemned both forms as either ‘serious’ or ‘very serious’.

This study distinguished between two types of effects of bid shopping on the subcontractor: Type 1 effects are the result of having the firm's quote distributed to other competing subcontractors, while Type 2 effects result from complying with a main contractor's request to underbid a competitor (see Table 1).

Two of the participants stated that nothing could be done to prevent their quotes from being bid shopped; the other eight participants tried to prevent bid shopping. They could only prevent their quotes from being shopped in the pre-award period. "Just-in-time" bid shopping was found to be the most common method of preventing pre-award bid shopping .Two other methods were also used: lump sum pricing, and emailing the quote directly to the relevant person.

Six of the ten participants submitted the same price to all main contractors, regardless of whether the contractor practised bid shopping or not. Four participants did not submit the same price to all main contractors; they submitted higher quotes to those main contractors known to bid shop.

Eight participants indicated that bid shopping caused them to distrust the main contractor; these eight participants also added comments to their responses. The most noteworthy concerned future inflated pricing and more aggressive claims for variations.

Table 1: Effects of bid shopping on the subcontractor

Type 1 Effects of subcontractor's quote being bid-shopped	Responses
Loss of work and revenue which they had a fair chance of winning	6 out of 10
Loss of competitive advantage due to quote details being revealed to competitors	2 out of 10
Causes frustration to the staff because of unjustified loss of work	2 out of 10
No effect because the company is diversified	1 out of 10
Causes a reduction in margins due to the need to secure replacement work	4 out of 10
Affects the quality of other subcontracted work done	1 out of 10
Causes fluctuation in the workload which must be managed	1 out of 10
Type 2 Effects of complying with contractor's request to underquote competitors	**Responses**
Loss of margin	7 out of 10
Additional work and pressure on the project managers to recover margin	3 out of 10
Keeps wages for trades people down thereby limiting the number of skilled staff that can be hired	1 out of 10
Affects the quality of the work done due to the need to recover margin	3 out of 10
Relationships with their own suppliers and subcontractors get strained	1 out of 10
Budget contingencies get used to lower the quoted price causing more pressure on staff since there is no longer any room for error	1 out of 10
Opens the door for future problems such as repeated requests to lower prices	1 out of 10

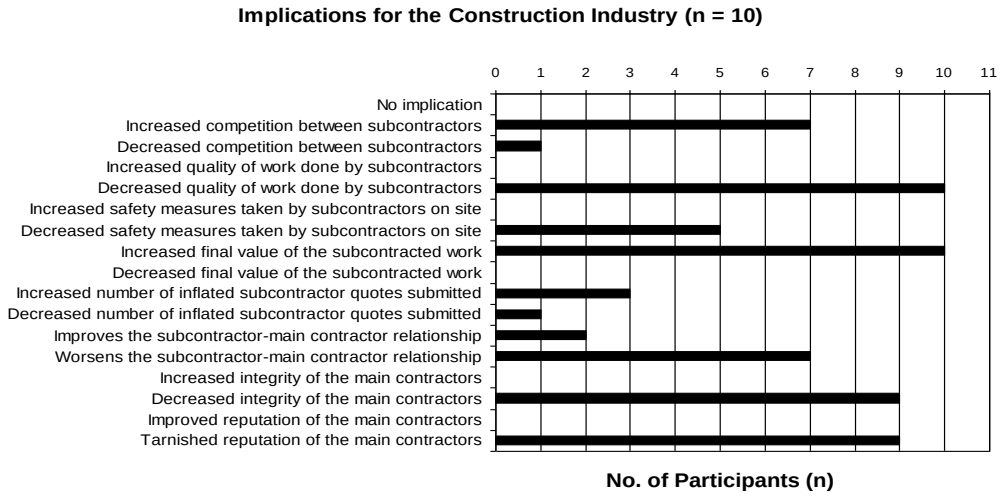
Six of the ten participants thought that the incidence of bid shopping had remained the same over the period 2006 to 2008. Four participants thought that it had become more common.

Participants had to consider the implications of bid shopping for the construction industry, and were given fixed responses and ticked all that applied (see Figure 1).

DISCUSSION

To determine the reliability of the responses regarding the frequency of occurrence of bid shopping, the basis for the participants' perception had to be related to their perceived frequency. A participant's perception based merely on hearsay alone is less reliable than one based on direct experience. The relationship revealed that the perception of frequency increased if bid shopping was encountered in a variety of forms. The responses appeared to be reliable because 8 out of 10 participants had direct experience with bid shopping by the main contractor. Only one participant based his opinion on hearsay and on unsuccessful tendering despite submitting the lowest conforming quote. This finding shows that bid shopping in the mechanical and electrical trades takes place often, which is significant because prior to this study the views on the incidence of bid shopping in Auckland were based solely on unconfirmed reports.

Figure 1: Implications of bid shopping



Only two participants distinguished between pre-and post-award bid shopping. This small number is contrary to the finding reported in the literature: that most American subcontractors hold different views about pre- and post-award bid shopping and accept pre-award bid shopping as normal (Hinze and Tracey 1994). All ten participants viewed the general issue of bid shopping in tendering as either ‘Serious’ or ‘Very Serious’, which indicates that Auckland subcontractors’ views on bid shopping are similar to subcontractors in other parts of the world, viz. that bid shopping by the main contractor is a serious issue for subcontractors. This result is not unexpected, and finds support in the literature (Arditi and Chotibhongs 2005; Hinze and Tracey 1994; Jackson 2005; Uher and Runeson 1984).

Once the subcontractor has submitted a quote to the main contractor there is nothing they can do to prevent their quotes from being shopped. The only effective action mentioned in the literature is to delay the quote submission to the main contractor for as long as possible, and is referred to as just-in-time submission (May *et al.* 2001). In this present study, just-in-time bid shopping was found to be the most common method of preventing pre-award bid shopping, and this result confirms its use as the chief preventative measure. Two other methods were also used which are not mentioned in the literature: lump sum pricing, and emailing the quote directly to the relevant person. Lump sum pricing was considered a preventative measure because the mechanical and electrical services trades are complex and quotes cannot be shopped without comparing details. Emailing the quote directly to the relevant person in the main contractor's office was seen as a preventative measure because if the quote were then distributed to other competitors, it would be concluded that it came from the email recipient.

Inflating the price of quotes submitted to main contractors with a reputation for bid shopping is alternatively seen either as a measure to counter bid shopping, or as the end result of bid shopping. Its use, however, is uncommon (Hinze and Tracey 1984; May *et al.* 2001), although subcontractors inflating their quoted prices in anticipation of later being forced to reduce prices through bid shopping is an acknowledged strategy (Degn and Miller 2003).

This present study wanted to investigate whether the subcontractors quoted the same price to all main contractors. The results were unexpected: four out of the ten

participants do not provide the same price to all main contractors. This is surprising because all ten participants also stated that the market for electrical and mechanical subcontractors was very competitive. Since this unequal pricing may have other explanations, the participants were presented with 4 fixed responses and asked to tick all that applied. The interesting aspect of this is that all four participants that did not provide the same price to all main contractors did so because the main contractor had a history of bid shopping. This finding is supported by the literature, which suggests that refusal to quote is a policy often used (Arditi and Chotibhongs 2005; Degn and Miller 2003; May *et al.* 2001; Uher and Runeson 1984).The six participants that provided the same price to all main contractors regardless of whether they were bid shopped or not, did so either because it was a good business strategy, or else because they were selective in which main contractor they wanted to work with, and indeed, would not quote to those they did not want to work with. These findings are surprising given the competitive nature of subcontracting in these trades, and suggest that bid shopping is a significant factor in subcontractors' pricing decisions.

The major Type 1 and Type 2 effect (see Table 1) is the loss of work and revenue which the participants had a fair chance or winning were it not for the bid shopping. The second most significant Type 1 effect is the frustration due to unjustified loss of work. The effect on staff is again the second most significant Type 2 effect; staff are under pressure to improve profitability sacrificed in under-quoting.

Participants reported that another consequence of bid shopping is the effect on the quality of the subcontracted work. This is due to their need to recoup revenue and margin lost as a result of reducing their quoted prices when bid shopped. The quality of work declines not only on the project on which bid shopping occurred, but also on other unrelated projects. The production of "substandard works" (Ng, Skitmore and Chung 2003: 5) on the quality of the bid shopped project was expected; the knock-on effect to other unrelated projects however, was an unexpected finding, not previously reported in the literature.

Eight of the ten participants stated that bid shopping caused them to distrust the main contractor, a finding supported by Degn and Miller (2003). Two participants also stated that bid shopping caused them to try and claim variations to make up any loss through having been bid shopped. This finding is significant as this issue has not hitherto been addressed by the literature.

All ten participants would not consider recovering tendering costs associated with work lost through bid shopping. This result is significant because the increased overheads must be recouped in some way, and this may explain the detrimental effect on quality of work on projects unrelated to the one on which bid shopping occurred.

Eight of the ten participants considered that financial reasons were behind any decision by the main contractor to re-tender the work during the buy-out period. Three of these eight attributed it to profit maximisation. Main contractors are therefore viewed as motivated largely by financial considerations; and as Shash asserted, "some contractors include given subcontractors' quotations in their bids and, in an effort to increase profit, they squeeze subcontractors to reduce their prices" (1998: 223).

Four of the ten participants thought that bid shopping had increased compared with the same period two years earlier. This result suggests a link between the incidence of bid shopping and the state of the construction market. A weak market with less work causes prices for construction work to be reduced. Maintaining margins in such a market becomes a major concern for main contractors [The New Zealand economy

showed a downturn at the start of 2008 and the economic outlook was revised downwards during 2008, and the start of a recession was confirmed (New Zealand Institute of Economic Research, 2008)].

The participants' views on the implications of bid shopping on the construction industry are summarised in Figure 1. Nine of the ten participants considered that bid shopping damaged the reputation and image of the main contractor. This is significant since the reputation and image of main contractors are criteria used by clients and consultants in the contractor selection process. All participants also thought that bid shopping decreased the quality of work done and led to an increase in the final value of the subcontracted work due to claims for variations. The other major implication of bid shopping was reported to be the decrease in safety measures that would be taken in order to reduce the subcontractor's costs. Seven of the ten participants thought that bid shopping increased competition between subcontractors.

CONCLUSIONS

Whilst bid shopping has been mentioned as part of research on issues such as ethics and tendering practice, few empirical studies have directly focussed on bid shopping, and specifically, sought the perceptions of subcontractors themselves on the effects of bid shopping on their business. Consequently, this research aimed to explore subcontractors' views on the impact of bid shopping on their own business, and what steps they take to counter the practice. The findings indicate that bid shopping in the mechanical and electrical services trades surveyed appears to takes place regularly in Auckland, and demonstrate that bid shopping is of concern to subcontractors and has a negative influence on their pricing, the quality of the work they do, and their safety measures taken when on site. The Auckland results are significant because they suggest that apart from the obvious loss in revenue to the subcontractor, bid shopping has less obvious effects on the subcontractor's business: frustration and stress on staff; fluctuating workloads that must be managed; loss of competitive advantage if the written quote is distributed; and it affects the quality of work done both on the project where bid shopping occurred and on other unrelated projects. It seems that the incidence of bid shopping increases during economic downturns, and the practice in general damages the image and reputation of the main contractor.

The work presented here is limited; it relies heavily on only ten interviews, and the analysis is brief. The findings suggest that subcontractors cut corners on quality and safety and are more inclined to pursue variation claims on projects that have been bid shopped. Further research would serve to investigate these issues in more depth. The study did not distinguish between the size of subcontractors and the size of the main contractor firm referred to in the questions. The size of firm may provide different findings, as large subcontractors may be more (or less) inclined to comply with a request to reduce a quoted price, whereas smaller firms may not (or may) be as willing. The study did not distinguish between types of project the subcontractor quoted for. Design and build tenders may for example be more prone to bid shopping, particularly for the mechanical services trade, because main contractors would want to reassure themselves they were obtaining value for money and would supply the design to competing subcontractors.

REFERENCES

Arditi, D and Chotibhongs, R (2005) Issues in subcontracting practice. *Construction Engineering and Management*, **131**, 866-876.

Crowley, S, Hager, P, and Garrick, J (2000) Subcontractors in the Australian construction industry: No small business. In proceedings of the *Working Knowledge Conference*, Dec 2000, University of Technology, Sydney.

Degn, E and Miller, K (2003) Bid shopping. *Journal of Construction Education*, **8**, 47-55.

Hinze, J and Tracey, A (1994) The contractor-subcontractor relationship: The subcontractor's view. *Construction Engineering and Management*, **120**, 274-287.

Horlen, J, Eldin, N, and Ajinkya, Y (2005) Reverse auctions: Controversial bidding practice. *Professional Issues in Engineering Education and Practice*, **131**(1), 76-81.

Jackson, B (2005) The perceptions of experienced construction practitioners regarding ethical transgressions in the construction industry. *Construction Education and Research*, **1**, 112-128.

May, D, Wilson, O D and Skitmore, M (2001) Bid cutting: an empirical study of practice in South-East Queensland. *Engineering Construction and Architectural Management*, **8**, 250-256.

Naoum, S. G. (2007). Dissertation research and writing for construction students (2nd ed.). Oxford, UK: Butterworth-Heinemann.

New Zealand Institute of Economic Research (2008) *Quarterly Predictions September 2008*. Retrieved from October 13, 2008 from http://www.nzier.org.nz/Site/Publications/about_quarterly_predictions.aspx

Ng, S T, Skitmore, M and Chung, W F (2003) Ten basic factors to identify suitable subcontractors for construction projects. *CIB TG 23 International Conference*, October 2003, Hong Kong.

Shash, A A (1998) Bidding practices of subcontractors in Colorado. *Construction Engineering and Management*, **124**, 219-225.

Smith Mojica, B A and Clarke, S N (2006) The impact of Bid Shopping on the private sector of the construction industry. *International Proceedings of the Associated Schools of Construction Annual Conference*, 2007. Retrieved March 14, 2008, from http://www.asceditor.usm.edu/archives/

Statistics New Zealand(2008) *Business demographic statistics*: Retrieved August 28, 2008 from http://www.stats.govt.nz/datasets/business/business-demographic-statistics.htm

Uher, T E and Runeson, G (1984) Pre-tender and post-tender negotiations in Australia. *Construction Management and Economics*, **2**, 185-192.

Vee, C and Skitmore, M (2003) Professional ethics in the construction industry. *Engineering, Construction and Architectural Management*, **10**(2), 117-127.

Zwick, D C and Miller, K R (2004) Project buyout. *Construction Engineering and Management*, **130**, 245-248.