COLLABORATIVE TRUST IN UK FURTHER EDUCATION (FE) PROCUREMENT STRATEGIES

Jason Challender[1], Peter Farrell[2] and Fred Sherratt[3]

[1] *Leeds City College, Park Lane Campus, Park Lane, Leeds LS3 1AA, UK*

[2] *School of Engineering, University of Bolton, Deane Road, Bolton., BL3 5AB, UK*

[3] *Engineering and the Built Environment, Anglia Ruskin University, Bishop Hall Lane, Chelmsford, Essex, CM1 1SQ, UK.*

This study aims to explore the trust building mechanisms in collaborative procurement of successful UK FE projects. A review of literature identifies a framework for measuring the degree of trust through established trust-related attributes and behaviours. A mixed methods approach is adopted within a sample drawn from contracting, consulting and client organisations that have had experience of collaboratively procured FE projects. Key findings indicate that certain trust building mechanisms including workshops, financial incentives and CPD are particularly effective at developing trust. Notwithstanding this, there are barriers which include the short term nature of construction contracting which suggests strategic rather than project partnering may be more effective. Quantitative study findings have determined that there is a Pearson's Product Moment correlation coefficient of 0.87 between all trust building mechanisms and trust generated. Based on a p value of ≤ 0.05 it suggests a very strong influence between the two variables. Cronbach's Alpha test results revealed good reliability based on a coefficient of 0.79. The study gives an understanding of how effective trust building mechanisms can be implemented, possibly through an appropriately designed toolkit for improving project outcomes. In consideration of this fresh insight future research beyond the FE sector is recommended as an extension to this study.

Keywords: collaboration, integration, procurement, partnering, trust

INTRODUCTION AND BACKGROUND TO RESEARCH

Over recent years, the Further Education (FE) sector has largely focused on increasing partnering strategies for collaborative procurement of major capital projects. Such initiatives are often heralded as vehicles to obtain best value, improve levels of quality and optimise service delivery. Yet there is still evidence of low levels of client satisfaction, owing mostly to poor cost and time predictability, which have in turn been attributed to low level of trust in practice (Chow *et al*., 2012). This potential lack of trust in collaborative working practices could possibly explain the downward trend in favour of more market-based approaches to construction procurement (Ross, 2011).

In previous studies of collaborative working, very little attention has been focused on the trust building process, the main emphasis of research focusing on the trustworthiness of science rather than interpersonal collaborative trust (Harris and Lyon, 2013). Thorgren *et al*., (2011) also argued that "scant attention has been paid to

[1] jason.challender@leedscitycollege.ac.uk

Challender, J, Farrell, P and Sherratt, F (2016) Collaborative Trust In UK Further Education (FE) Procurement Strategies. *In*: P W Chan and C J Neilson (Eds.) *Proceedings of the 32nd Annual ARCOM Conference,* 5-7 September 2016, Manchester, UK, Association of Researchers in Construction Management, Vol 2, 893-902.

the role and development of trust in partner alliances". The study therefore seeks to fill this gap in knowledge by examining trust building attributes and mechanisms, and exploring the influence of these on generating trust in construction partnering. It has also been designed to address calls for greater insight into how trust is created, mobilised and developed (Huemer, 2004) and for more understanding of the effects and impact of other factors interacting with trust (Huang and Wilkinson, 2013).

Much has been written on trust as a collaborative necessity (Chan *et al*., 2004, 230) and this has largely focused on the advantages and merits of collaborative working and practice. However, very little has been written on the trust building process and how to create the trust within partnering relationships through trust building mechanisms. This gap in knowledge is important given that "trust appears to be a stranger in construction contracting where confrontation remains the prevalent environment" (Wong *et al*., 2008). To address the aforementioned deficiency and dilemma, this study seeks to focus 'upstream' on those constructs, attributes, factors, mechanisms and initiatives which could build trust in the context of partnering practices. It identifies and evaluates trust 'generators', which the study refers to as 'trust building mechanisms', and 'inhibitors' or barriers in this respect. This is designed to facilitate greater understanding of how trust building initiatives can be designed and implemented in developing a framework for improving public sector procurement strategies, specifically in the FE sector. The research question focuses on whether trust building mechanisms influence the quality of trust in partnering arrangements. This is a particularly important question as generating addition trust could have a positive effect on increasing collaboration and therein improving overall project outcomes.

The research questions are two-fold; to examine which trust-building mechanisms can be used in construction (specifically in FE), and thereafter, which are more successful than others when implementing trust building strategies.

Review of Literature

Trust building mechanisms

This study has identified previous research relating to the influence of key critical factors on improving trust in UK collaborative procurement strategies, and refers to these as 'trust building mechanisms'. Despite this, very little has been written on how these same factors and mechanisms can influence trust, especially in partnering arrangements. Such success factors for influencing construction performance have included motivational measures by way of financial pain-share, gain-share initiatives (Tyler and Blader, 2003). Furthermore Beach *et al*., (2005, 611-621) advocated regular motivational based performance reviews through workshops to promote corrective action. These could form part of innovative motivational initiatives which seek to pool ideas, transfer knowledge, allow open communication and capture feedback. Lessons learnt as part of this process could ensure alignment to aims, visions and the spirit of the partnering arrangement. The permeability and conduct of organisations have been found to be an important ethical factor and these include fairness, equality, governance and regulation (Wong *et al*., 2008). Organisational-based factors are also considered important through alignment of corporate strategies and relationships designed to achieve mutual objectives and benefits between contracting organisations (Silva *et al*., 2012). Other organisational factors on a practical level could include jointly compatible management systems and process for sharing information (Beach *et al*., 2005, 611-621). These factors have been framed

into trust building mechanisms which formed the basis of the study and these are included in Table 1, with references included. They have influenced the basket of questions used as part of the data collection tool in identifying the underlying factors that influence trust generation and development, and framing these into a partnering context.

Table 1: Trust building mechanisms identified from literature review

Trust Building Mechanisms	Literature Source	Observation, Proposition or Explanation
Workshops and review meetings	Beach *et al*., 2005	Partnering workshops designed to reduce conflicts and problems
Social functions	Cheung *et al*., 2011	Promotes right environment for bonding and aids relational development between teams
Incentive pain/share schemes	Tyler and Blader 2003	Rewarding performance can raise morale
Open communication strategies	Beach *et al*., 2005	Promotes alternative forms of engagement
Styles of leadership	Pinto *et al*., 2009	Democratic styles can increase morale
Partnering charters	Chan *et al*., 2004	Aligns partnering visions
Fair and equitable contract terms	Wong *et al*., 2008	Promotes sense of fairness and avoids mismatch of effort and reward
CPD, teaching and learning	Chow *et al*., 2012	Can improve cooperative behaviours
Professional recognition	RICS 2003	Can enhance reputations and confidence
Transparent joint accounting policies	Wong *et al*., 2008	Open book accounting can increase sense of fairness
Senior management commitment to decision making	Cheung *et al*., 2011	Can lead to decision making
Compatibility/complimentary management systems	Silva *et al*., 2012	Can facilitate improved ways of sharing and processing information between firms
Issue resolution processes	Pinto *et al*., 2009	Avoids disputes arising and facilitates escalation procedures

RESEARCH METHODS

Research design; procedure and design of data collection tool

As referred to in the introduction, the research questions are to examine which trust-building mechanisms can be used in construction (specifically in FE), and thereafter, which are more successful than other as part of trust building strategies. These underpin the study aim to explore trust building mechanisms in collaborative procurement of successful UK FE projects. A mixed method approach using both quantitative and qualitative methodologies was adopted for the study to triangulate data collection with the aim of increasing validity of its findings (Amaratunga *et al*., 2002, 19-21). Initial qualitative enquires were conducted to refine the research problem through consultation with experienced practitioners. For the quantitative approach, previous studies were adapted in the research design to provide an authoritative tool and evaluation framework for the measurement of trust using survey questionnaires. A pilot study was undertaken which highlighted some potentially unreliable questions which were modified accordingly for the main study. The main quantitative survey was administered electronically with 79 replies received which represented an overall response rate of 63.20%. Data sourced in this way was from four different group categories of participants, namely construction clients,

consultants, main contractors and subcontractors. Samples of participants have been selected from individuals and organisations that have gained sufficient knowledge and experience of collaboratively procured construction projects in the FE sector.

Survey questionnaires were designed to measure participants' levels of agreement and disagreement with a basket of statements, as advocated by Hoxley (2008), and utilising a six point Likert multi-item scale of 0 to 5. Such statements were based on lists of attributes which were developed for each respective group of the measured independent and dependent variables (Chow *et al*., 2012; Cheung *et al*., 2011, 184-196). These measured the extent of trust building mechanisms employed on partnering projects as the independent variable (IV) and the quality and extent of trust as the dependent variable (DV). The foundations for such trust building mechanisms were previously referred to in the review of literature. Participants were asked to relate these statements to their last partnering project in terms of the level of their agreement/disagreement. Unfortunately, owing to the restrictions of this paper it was not possible to include all statements but examples for measuring the IV and DV are given in Table 2 and Table 3 respectively. There were 18 statements for measuring the IV and 31 statements for measuring the DV, in this regard, and these were adapted from several previous similar studies (Pinto *et al*., 2009; Cheung *et al*., 2011; Wong *et al*., 2008; Chow *et al*., 2012). This was a concerted effort to improve the validity and reliability of the study by providing an authoritative measurement tool and evaluation framework for trust. Statistical treatment of the data was then carried out to take account to substitute unsure for the mean of the participants' scores of the variable being measured, as advocated by Kalla (2009). Data was then subjecting to correlation analysis, with the significance or 'p' value set at ≤ 0.05, to determine the Pearson's Product coefficient and whether trust building strategies have an influence on the quality of trust in partnering arrangements. Survey questions also were designed to obtain subject variable data from the participants relating to their last partnering project alongside demographic information and profiles of participants and their organisations.

The qualitative approach consisted of eight interviews, with data sourced from construction clients, consultants, main contractors and subcontractors. Samples of participants were, like those of the quantitative approach, purposively selected from individuals and organisations that have gained sufficient knowledge and experience of collaboratively procured construction projects in the FE sector. Codes were developed from word count as part of content analysis from the raw data transcripts. These were formulated from frequently occurring words and then grouped under theme headings. Questions revolved around whether trust building mechanisms do actually influence the quality of trust in partnering. By way of examples, one question specifically asked participants which trust building mechanisms they believed were most and least effective, whilst another asked participants for their views around the quantitative analysis findings.

A manual system of coding attaching key words or tags to segments of text and content analysis counting frequencies, sequences or locations of words or phrases was utilised. These were sourced from the raw data interview transcripts and summarized in tables with codes and themes listed. In total there were a total of 31 main qualitative codes and examples included 'teamwork', 'availability of resources' and 'working to common goals'. Examples of themes included 'best practice', 'factors that instil trust' and 'potential barriers'.

Table 2: Examples of statements/ indicators to measure trust building mechanisms (independent variable) (adapted from Pinto et al., 2009; Cheung et al., 2011; Wong et al., 2008; Chow et al., 2012). Likert scale of 0-5

Question no.	ID	Attributes of motivational, organisational and ethical-based trust building mechanisms	Statements / Indicators
Q1	Mechanism1	Workshops and review meetings	Partners fulfilled their obligations without frequent reminders
Q2	Mechanism2	Social functions/network events	Partners performed and behaved in a consistent way towards their counterparts at all times
Q3	Mechanism3	Introduction of incentivisation scheme	Performance related 'gain share/pain share' partnering initiatives were exercised
Q4	Mechanism4	Open communications strategies	There were frequent newsletters and e-mail updates designed to keep all staff fully informed of project status

Table 3: Examples of statements/ indicators to measure attributes of trust behaviours/expectations (dependent variable) (adapted from Chow et al., 2012; Lu and Hao, 2013; Construction Institute, 2013; Silva et al., 2012; Black et al., 2000). Likert scale of 0-5.

Question no.	ID	Attributes of trust expectations	Statements / Indicators; behaviours and expectations
Q1	Expectation1	Reliability	Partnering workshops designed to resolve conflicts and problems were well attended at both executive and project team levels
Q2	Expectation2	Consistency	There were frequent social functions and network events arranged between the project teams
Q3	Expectation3	Respect	Project teams had faith and respect in their counterparts
Q4	Expectation4	Intuition/ Foresight	Partners created solutions to overcome potential future unforeseen problems, risks and contingencies

The table became a plan to develop a narrative for the research finding, discussion and conclusion chapters of this study. Findings of the study were developed by comparing the qualitative data from the interviews with the arguments and theories derived from the literature review. In this way, data similarities and inconsistencies were recorded between primary and secondary data sources and propositions made. It prompted interesting discussions to be developed especially where conflicting opinions were apparent. Conclusions were developed through personal reflections of the study findings and recommendations were included in areas where further research was deemed to be required.

RESEARCH FINDINGS AND DISCUSSION

Quantitative analysis: Questionnaire data

The number of participants and their varying profiles and demographic details demonstrated a diverse and wide sample representation for construction professional employed in the education sector. The majority of the subject variable data showed that most of the participants (65 out of 79) were over 35 years old. The majority held membership of professional bodies (71), possessed qualifications of degree or above

(55), gained more than 15 years' working experience (61) and were mostly employed by relatively large organisations.

The mean level of all 18 trust building mechanisms (IV), based on the six point Likert multi-item scale of 0 to 5 for participants responses, was recorded as 2.60. It represented a percentage score of 52.09%, relative to minimum (0%) and maximum levels (100%) of trust building mechanisms adopted and calculated from the questionnaire scores. This could reflect a general lack of attention or focus on introducing trust building initiatives, mechanisms or strategies into FE partnering strategies. Furthermore the mean level of all 31 trust expectations and behaviours (DV), based on the six point Likert multi-item scale of 0 to 5 for participants responses, was recorded as 2.54. It represented a percentage score of 50.83%, relative to minimum (0%) and maximum levels (100%), of overall levels of trust prevalent in college partnering arrangements and could reflect a general lack of trust in the FE sector. Although these mean scores for both the IV and DV questionnaire results were concentrated around the 50% mark and initially considered being 'middle of the road', there was in fact a reasonable spread of results across most responses and participants. Extremities of scores in this way ranged from 0 (very strongly disagree) to 5 (very strongly agree).

The measured data relating individually to the IV and the DV was of a parametric nature, based on a normal distribution. Accordingly, Pearson's Product Moment test was used to determine correlation coefficients between the IV and the DV. This revealed a correlation coefficient of 0.87 with significance set at (p) $\leq$0.05, which according to Higgins (2003) can be interpreted as representing a very strong relationship between the two variables. Cronbach's Alpha for the data was calculated at 0.79, which according to the George and Mallery (2003) is acceptable and therein supports the internal reliability of the data collection instrument. Based on the correlation coefficient of 0.87 and significance set at (p) $\leq$0.05 this has led to the null hypothesis relating to this study being rejected; there is a relationship between trust building strategies and the quality of trust in partnering arrangements. This effectively means that the employment of trust building mechanisms are determined by this study to be an influencing factor on levels of trust generated in partnering. Furthermore the quantitative analysis undertaken on subject variables reveals that both the complexity of projects and qualifications of construction professionals could have a small positive influence on trust between partners with Spearman correlation coefficients of 0.24 and 0.31 recorded respectively.

Qualitative analysis: Interview data

The main purpose of the qualitative analysis was to establish which trust building mechanisms are more important than others. Interviews with eight participants revealed contrasting opinions on most of the trust building mechanisms when examined against the literature. On reflection of the research findings, when analysed for similarities and inconsistencies, it became apparent that there were several disagreements with existing thinking. Table 4 outlines one such example and contrary to the literature identifies the importance of previous relationships and inherent lack of knowledge and commitment to trust building mechanisms.

When reflecting on which trust building mechanisms are more effective than others the qualitative analysis reveals that the following initiatives are considered to have greater influence on generating trust in partnering arrangements:

6. Facilitation of regular workshops and review meetings at both executive and project team levels, specifically designed to resolve conflicts and problems.
7. Formulation of strategies to develop mutually aligned corporate and strategic objectives between partnering organisations and to ensure that senior management are committed and involved in key decision making at various stages of projects.
8. Implementation of performance related 'gain share/pain share' partnering initiatives that are considered fair and equitable to partners alongside transparent joint 'open book' financial accounting policies for all contractor/subcontractor valuations.
9. Formulation of good internal and external communication strategies with frequent newsletters and e-mail updates designed to keep all staff fully informed of project status.
10. Strategies related to CPD of project teams, specifically linked to partnering.

Table 4: Qualitative themes and data analysis

Qualitative Themes	Literature Source	Observation, Proposition or Explanation	Data Inconsistencies	Data Similarities
Factors that instil trust in partnering arrangements. Trust building mechanisms.	Cheung *et al*., (2003). Briscoe and Dainty (2005) Thurairajah *et al*., (2006) Wong *et al*., (2007)	Shared ethos based on trust, equity and fairness between partners is essential. Levels of trust can grow if trust reciprocated between partners. Social interaction, power, identities and expectations influence the degree and quality of trust.	Trust generated from previous relationships especially at senior levels. Lack of knowledge and commitment to initiatives in some cases.	Equitable working relationships coupled dispute resolution process. Importance of communications and commitment. Sharing of information. Use of workshops for facilitating teamwork.

Notwithstanding the above measures, workshops were regarded as being particularly effective when 'end-users' from client organisations are involved and where there is open and free flowing dialogue around risk management. Findings from literature have previously focused on project sponsors from client organisations as opposed to front of staff end-users in this regard (Chow *et al*., 2012). This represents a potentially important finding and departure from the literature. Furthermore performance related 'gain share/pain share' incentives are seen by participants as requiring robust and transparent key performance indicators. These should be easily and objectively measured against established agreed benchmarks to avoid disputes arising. An example might include financial incentives being based on savings achieved against target cost plans. Other forms of incentives could be effective through staff recognition schemes and as part of 'Investors in People' initiatives. One participant commented that "...we build recognition through our Investors in People goal and this empowers our project teams to understand the desired ways of working whilst embedding collaborative trust in others."

Although securing the commitment of senior management is regarded as a highly effective trust building mechanism from the interviews, the study found that this is predicated on college executives embracing partnering philosophies. Where such senior decision makers advocate lowest price tendering in the guise of obtaining best value for governance adherence, it can have a negative effect on trust and represents a major barrier for FE partnering strategies in such cases. The study found this to be an interesting new insight to existing thinking. Furthermore there were other trust

building mechanisms including social functions and facilitating networking events which are considered less effective at generating trust in partnering arrangements.

In light of these considerations, it can be suggested that organisations should focus more on strategic initiatives linked with the aforementioned top five influencing trust building mechanisms. These could include improvements to communication strategies as one example. Such mechanisms could become part of a 'partnering toolkit', geared to raising trust levels between project partners. Conversely the findings also suggest that there should be less emphasis on arranging social functions and events (of a non-workshop nature), preparing partnering charters and adopting restrictive recruitment policies around membership of professional bodies. Strategic partnering was felt to offer more beneficial outcomes and be more conducive to procuring successful collaborative outcomes than project-specific partnering. This was explained by the perceived willingness to invest more in resources and based on the expected longevity of future relationships and work streams in the former case.

The overarching consensus emanating from this study supports the notion that trust building mechanisms play an extremely important role in influencing the levels and quality of trust in partnering. However the level of influence is dependent on the suitability and adaptability of different project types to partnering. Complex projects of longer duration are found to give more scope and opportunities for trust development within project teams. Perhaps these findings present a further new insight into the nature of such projects, with those complex projects which place more demand on integration and communications between teams, creating more trust.

CONCLUSIONS

The study has acknowledged through the literature and research findings that there is an apparent lack of trust in partnering procurement strategies and responded to the lack of attention paid to the role and development of trust building mechanisms in the past. This certainly appears to be a major obstacle for realising the potential benefits of partnering strategies, here explored within the FE sector. In addressing this challenging dilemma the study has focused 'upstream' on those constructs, attributes and factors which could influence trust and offered a greater understanding of those trust building mechanisms that are potentially effective in 'turning the tide' and embedding more trust in partnering. Trust building mechanisms have been established by this study as having a very strong influence on raising trust levels on partnering projects in the FE sector. Examples of successful initiatives and measures previously adopted by participants have been identified for contemplation. These include strategies around incentive provisions, workshops, CPD, collaboration management systems, senior management commitment, open and joint evaluation policies and improved communications. Such measures or mechanisms are designed to increase the low levels of trust that exist on projects in pursuit of more successful project outcomes. They are, however, heavily reliant on establishing mutually aligned corporate objectives between partnering organisations. Furthermore they may provide the catalyst that 'keeps the partnering trust flag flying' in this regard, especially in the FE sector which has seen a reduction in this procurement approach for construction projects in recent years.

The study identifies barriers and obstacles to trust generation within partnering strategies. These mostly revolve around commercial issues and traditional attitudes of client senior managers still favouring lowest price tendering. Perhaps the biggest challenges remain around culture change within the UK construction industry and

seeking longer term collaborative relationships between partnering organisations. Finally action research is recommended to further explore some of the trust building mechanisms and initiatives that this study has identified when applied in practice. Such research could form part of case studies for future FE construction projects and assist in developing a framework or 'toolkit' for increasing trust in FE College partnering strategies.

REFERENCES

Amaratunga, D, Baldrey, D, Sarshar, M and Newton, R (2002) Quantitative and qualitative research in the built environment: Application of a mixed research approach. *Work Study*, **51**(1), 17-31.

Beach, R, Webster, M and Campbell, KM (2005) An evaluation of partnership development in the construction industry. *International Journal of Project Management*, **23**(8), 611-621.

Chan, A P C, Chan, D W M, Chiang, Y, Tang, B, Chan, E H W and Ho, K S K (2004) Exploring critical success factors for partnering in construction projects. *Journal of Construction Engineering and Management*, **130**(2), 188-89.

Cheung, S O, Wong, W K, Yiu, T W and Pang, H Y (2011) Developing a trust inventory for construction contracting. *International Journal of Project Management*, **29**(2), 184-196.

Chow, P T, Cheung, S O and Chan, K Y (2012) Trust-building in construction contracting: Mechanism and expectation. *International Journal of Project Management*, **30**(8), 927-937.

George, D and Mallery, P (2003) *SPSS for Windows Step by Step: A Simple Guide and Reference. 11.0 update 4th edition*. Boston: Allyn and Bacon.

Harris, F and Lyon, F (2013) Trans-disciplinary environmental research: Building trust across professional cultures. *Environmental Science and Policy*, **31**, 109-119.

Higgins, J (2003) *Introduction to Modern Nonparametric Statistics 1st Edition*. Cengauge. Duxbury Advanced Series.

Hoxley, M (2008) Questionnaire design and factor analysis. *In*: A Knight and L Ruddock (Eds.) *Advanced Research Methods in the Built Environment*. Chichester, West Sussex: Wiley-Blackwell, 123-126.

Huang, Y and Wilkinson, I F (2013) The dynamics and evolution of trust in business relationships. *Industrial Marketing Management*, **42**(3), 455-465.

Huemer, L (2004) Activating trust: the redefinition of roles and relationships in an international construction project. *International Marketing Review*, **21**(2), 187-201.

Kalla, S (2009) *Statistical Treatment of Data*. Available from https://explorable.com/statistical-treatment-of-data [Accessed 7th September 2015].

Pinto, J K, Slevin, D P and English, B (2009) Trust in projects: an empirical assessment of owner/contractor relationships. *International Journal of Project Management*, **27**(6), 638-648.

RICS (2003) *Proceedings of the RICS Foundation Construction and Building Research Conference (COBRA 2003), University of Wolverhampton. 1st -2nd September 2003*. RICS.

Ross, A (2011) Supply chain management in an uncertain economic climate: A UK perspective. *Construction Innovation*, **11**(1), 5-13.

Silva, S C, Bradley, F and Sousa, C M P (2012) Empirical test of the trust performance link in an international alliances context. *International Business Review*, **21**(2), 293-306.

Thorgren, S, Wincent, J and Eriksson, J (2011) Too small or too large to trust your partners in multi-partner alliances? The role of effort in initiating generalized exchanges. *Scandinavian Journal of Management*, **27**(1), 99-112.

Tyler, T R and Blader, S L (2003) The group engagement model: Procedural justice, social identity and cooperative behaviour. *Personality and Social Psychology Review*, 7(4), 349-361.

Wong, W K, Cheung, S O, Yiu, T W and Pang, H Y (2008) A framework for trust in construction contracting. *International Journal of Project Management*, **26**(8), 821-829.