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Partnering practice and the delivery of construction projects for Housing Associations in the UK

Partnering
practice

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Abstract

Purpose - Housing Associations in the UK are being encouraged to change the way in which they procure their building projects. This work aims to provide a snapshot of current practice in relation to the use of partnering as a procurement approach.

Design/methodology/approach - Accordingly a quantitative research design was used to capture data from a sample of 100 of the largest Housing Associations involved in the commissioning of new house building projects in 2003. Two administrations of the survey generated a 43 per cent response rate.

Findings - The findings of the study revealed that two differing types of partnering alliance could be identified. The types of partnering alliance identified were considered to have either a "supply side" or "demand side" focus. The results show that partnering practice, open-book cost management, risk analysis and the use of standardised and pre-fabricated components are now widespread and believed to deliver benefits in project costs, delivery times and quality levels.

Research limitations/implications - The work is limited due to the size of the sample frame and the measuring instrument used which could not uncover reasons for the current practices that were revealed.

Practical implications - The outcomes of the work provide practice with benchmarks that can be used to evaluate organisational approach and if necessary develop alternative approaches to the delivery of partnered projects.

Originality/value - The paper contributes to the body of knowledge available on partnering practice in a client group that has been identified as being key in driving forward the post-Egan agenda in the construction industry.

Keywords Partnership, Strategic alliances, Construction industry, Housing, United kingdom

Paper type Research paper

Introduction

Amongst the recommendations advocated by Egan (1998) to effect change in the culture of the project delivery process was the use partnering agreements between supply chain organisations. Such agreements were encouraged to make use of features such as, standardised and pre-fabricated components, the use of open book costing methods and the adoption of risk management processes. Morton (2002) and Male (2002), in concurring with these recommendations, also suggested that their promotion and implementation in public sector projects was the way to encourage change across the construction industry as a whole. In the UK, one of the quasi-public sector client groups with similar needs and funding regimes are the organisations known as Housing Associations that are involved in the delivery of socially owned rented housing



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Therefore, this work was focused on assessing the general impact of partnering as an approach to the delivery of socially owned rented housing projects. The study also addressed the significance of the principal features that were recommended as being included in such organisational alliances, namely: the extent of the alliances through the project's supply chain, the use of standardised or pre-fabricated components, the use of strategic open-book cost management methods, and the use of explicit risk management procedures. The determination of the current state-of-the-art in terms of partnering practices amongst the client group identified above has been achieved by gathering quantitative data from a representative sample of UK Housing Associations involved in projects organised in this manner. The data generated allowed the work to assert that there was a division in the nature of the organisational alliances that were being established. The paper starts with a review of the available material in order to identify the critical issues that were subsequently addressed within the data collection process.

Literature review

Partnering for project delivery

The definition of partnering advanced by Bennet and Jayes (1998) was asserted by Fisher and Green (National Audit Office, 2001) as being the one that was the most widely accepted by participants involved in the delivery of construction projects. That definition clearly identified partnering as being a cultural approach to the organisation and delivery of construction projects. Bresnen and Marshall (2000) suggested that partnering was a broad concept that covered a wide spectrum of attitudes, behaviour, values, tools, techniques and practices. Black *et al.* (2000) as well as Ng *et al.* (2002) cited several studies into the key elements of successful partnering and identified issues such as commitment, trust, understanding, the development of mutual goals, use of project and strategic long-term partnering, stakeholder empowerment and a willingness to share the consequences of mistakes or risks as being features of successful partnering alliances.

However, there is a concern that there is little empirical evidence to support such sweeping assertions – see Bresnen and Marshall (2000) and Fisher and Green (National Audit Office, 2001). Indeed Fisher and Green (National Audit Office, 2001) raised the whole question of the appropriateness of its use in the public not-for-profit sector that the UK Housing Associations operate within. The Housing Associations involved in the organisation and delivery of new socially owned rented housing schemes have been lobbied indirectly through the widespread promotion of the recommendations contained within the Egan Report (Egan, 1998). In addition, bodies such as, the Housing Forum Report (2002), and The Strategic Forum, have also encouraged Housing Association clients to embrace partnering via long-term strategic supply chain alliances. Work by Burns and Coram (1999) indicated that they believed that there were barriers on the ground that would affect the take-up of such claimed advantages of partnering practice, namely the inherent lack of trust between potential partnering organisations, especially at the early stages of project development.

Recommendations for changes in practice were made by the Housing Forum Report (2002) in terms of culture, design and construction and the regulatory environment. In terms of cultural change it was found that the use of one-off single project partnerships were proving to have had large “up-front” resource implications and as such were

detering the desired cultural change amongst potential partnering organisations. The Housing Forum Report (2002) also asserted that “the real gains would come from longer-term strategic partnering relationships which would allow returns to be gained from the substantial investment required to effect organisational change”.

This issue was partly addressed by Kilpatrick (2002), in a small-scale post-graduate dissertation study into the practice of Housing Association project delivery systems. This work gathered data from some 27 housing associations that were operating in the UK in 2001. The work revealed that, at that time, a clear majority of Housing Associations that were contacted had or were about to become involved in partnered projects. It also found that the case for strategic long-term strategic partnering had not then been clearly established. For instance just 9 per cent of the respondents to that survey in 2001 had entered into a long-term strategic alliance for the delivery of their housing projects. Amongst issues that were identified in 2001 as acting as barriers to a greater uptake of strategic long-term alliances were issues related to cultural change. Given the significance of the literature that lays claim to the theoretical advantages of long-term supply chain organisational alliances and the concern about the paucity of relevant empirical data available it was resolved to collect data from a larger and more representative sample of UK Housing Associations involved in delivering new housing projects.

Partnered projects and sustainability

The potential of partnering alliances to contribute to the wider debate on sustainable construction was picked up by Mathews et al. (1996, 2000). They asserted that the adoption of upstream strategic supply chain alliances could contribute to the reduction of waste in projects' downstream delivery processes. Others, such as the Construction Industry Research and Information Association (1999) and Mathews *et al.* (2000) claimed that the increased use of standardisation and prefabrication of components could add value to construction projects by delivering the called for improvement in project predictability, efficiency, and environmental friendliness. Although there was general agreement in the literature that the use of standardisation would lead to improved levels of efficiency there was a lack of consensus on the optimum extent of its use within projects and a similar lack of agreement on the potential for such measures to impact upon user satisfaction (Gann, 1996). Work by Dubois and Gadde (2000) suggested that all too often the decision on the proportion of project costs generated by the use of standardised and/or prefabricated components was determined by the potential saving their implementation could have on project costs. Therefore this study resolved to collect data on the use of standardised and/or prefabricated components in construction projects for housing association clients. The survey also sought to determine the extent, in terms of the proportion of project costs that could be attributed to their use.

Partnered projects and cost and risk management

The implementation of “open-book” costing approaches have been recommended by leading advocates of strategic partnering practice such as, the Housing Forum Report (2002), and Egan (1998). Zsidisin and Ellram (2001) identified the principal features of effective open-book costing approaches as being, namely, the establishment of the cost of ownership, the sharing of cost information, the monitoring of market prices and the

establishment of agreed target costs. The implementation of these activities called for an understanding of suppliers' costs to be shared across the supply chain from the earliest stages of any proposed partnering framework. However, the results of Kilpatrick's (2002) survey suggested that the actual use of open-book cost management measures were not yet fully embraced by the principal stakeholder organisations that were typically involved in forming strategic supply chain alliances. This finding contrasted with the claimed theoretical significance of this feature within effective supply chain alliances and called for further data to be collected to establish a more reliable benchmark of current practice.

The use of appropriate risk management approaches within strategic partnering alliances was seen as being a key feature of good practice that would ensure partnered projects were delivered with greater predictability in terms of anticipated time; cost and quality performance measures. Sources such as Tummala *et al.* (1997) and Baker *et al.* (1999) asserted that the implementation of an effective risk management process involved risk analysis, risk evaluation, risk response and risk monitoring. Such a risk management process would ensure the transfer of appropriate risks along the supply chain. Flanagan and Norman (1996) suggested that a risk transfer strategy should involve the placement of risk on organisations that were best able to manage the factor that gave rise to the risk. However, Baker *et al.* (1999) asserted that risks should be accepted by the party that was best able to accept the consequences of the risk occurring. The establishment of actual risk management practice on the ground between stakeholder organisations involved in the organisation and delivery of UK Housing Association projects would provide data to evaluate impact of the theoretical position set out above in terms of actual practice on the ground.

Having set out above the theoretical background related to both overall project partnering strategy, and the principal features of partnering practice that were alleged to be found in effective alliances it was now considered appropriate to collect data on current practice.

Data collection

Fellows and Liu (2002) argued that the decision to select the most appropriate research strategy should be based on the nature of the research's objectives. Creswell (1994) identified that a qualitative approach to data collection was the most appropriate when the objective of the research was to develop new theory. However, the objective of this study was to assess the use of new project delivery practices in socially owned rented housing projects and as such a quantitative approach was considered to be the most appropriate.

Of the methods of quantitative data collection available it was resolved to use the postal survey. Creswell (1994) identified the advantages of such an approach as being: the economy of its design, the rapid collection of large amounts of data, and the ability of the research to identify attributes of a population from a smaller representative sample. In terms of this study it was decided to construct a representative 50 per cent randomised sample from the population of 200 Housing Associations registered on the Housing Corporation web site. A cover letter and questionnaire were distributed in the summer of 2003. The questionnaire form contained closed questions with a fixed choice of answers that were designed to generate mainly ordinal data. The form itself was divided into the following sections:

- (1) company profile;
- (2) partnering practice in supply chains;
- (3) sustainability issues related to standardisation and pre-fabrication; and
- (4) strategic cost and risk management approaches.

The questionnaire form benefited from a thorough piloting exercise and following an initial and one follow-up administration it generated a response rate of 43 per cent. In the circumstances it was considered that this response rate was adequate for an unsolicited postal survey.

Results, analysis and discussion

Generally

The results from the initial section of the questionnaire confirmed the sample as being appropriate as they indicated that 97 per cent of the survey's respondents intended to implement a development programme over the coming 12 months. Furthermore, some 92 per cent of respondents had already established partnering agreements with other organisations involved in the design and construction of their housing projects. In terms of the nature of the partnering arrangement the survey revealed that some 76 per cent of respondents had or were intending to extend their partnering relationships into long-term relationships. This finding contrasted sharply with the results of Kilpatrick's (2002) study which found that such practices were being used by only a minority of Housing Associations just two years earlier.

Partnering and its benefits to RSL client organisations

The next section of the questionnaire addressed issues related to the perceived advantages to client organisations of entering into long-term partnering arrangements. The first question in this section asked the survey's respondents to indicate the types of organisations usually involved in their partnering relationships. The results of the survey indicated that although 100 per cent of respondents had partnering arrangements with contracting organisations only 61 per cent had similar arrangements with design and other consultant firms. Interestingly some 39 per cent of respondents indicated that they had or were intending to establish partnering arrangements with other Housing Associations in order to implement their new socially owned rented housing projects. This result provided a major division in the data generated by the survey. The survey results indicated that the principle of forming supply chain alliances was now accepted as 100 per cent of the respondents to the survey were involved in partnering arrangements with firms of construction contractors. However, the data generated also indicated a division of approach into project alliances that had differing major characteristics, namely those client organisations with partnering arrangements with contractors, design and other consultants (61 per cent) and those client organisations that had partnering arrangements with contractors and other client organisations (39 per cent). It was resolved that the dominant characteristics of respondents with a partnering profile similar to the former had a "supply focus" to their project alliances whereas respondents with a partnering profile similar to the latter had a "demand focus" to their project alliances. Accordingly the remainder of the data generated from the survey were analysed from the differing perspectives identified above.

Some of the key benefits of entering into partnering arrangements were identified in the literature reviewed above, namely, the potential to obtain greater predictability in terms of time and cost, the potential to reduce construction costs, the potential to eliminate waste and the potential to introduce innovation into project designs. The respondents to the survey were asked to rank each of the potential benefits from 1 (most)-4 (least) important. The data generated the results shown in Figure 1 and it can be seen that the respondents considered the most significant benefit to be gained from using partnering as an approach to the organisation and implementation of their projects was greater predictability the approach provided in terms of project costs and time. The least significant factors were the potential to reduce construction costs and the potential to introduce innovation into the design of their projects.

The respondents were then asked to consider the theoretical benefits that have been asserted as being available to client organisations that have established long-term relationships with other organisations. Respondents were asked to rank for significance 1 = most significant – 7 = least significant) the following seven factors, namely:

- (1) long-term cost savings;
- (2) improved quality;
- (3) improved work environments;
- (4) improved relationships;
- (5) increased productivity;
- (6) improved life-cycle cash flow; and
- (7) improved planning for future workloads.

The results shown in Figure 2 indicated that both groups of respondents ranked the potential benefit of greater levels of quality as the most significant benefit of long-term

Figure 1.
Partnering and its most significant benefit for the client

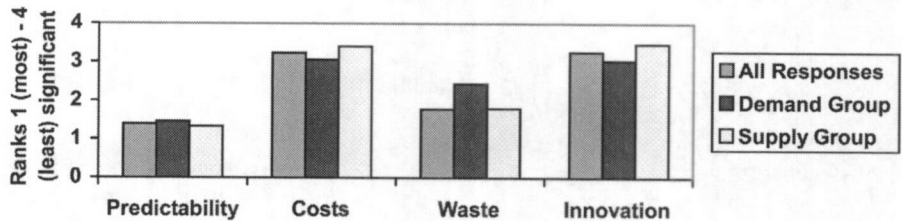
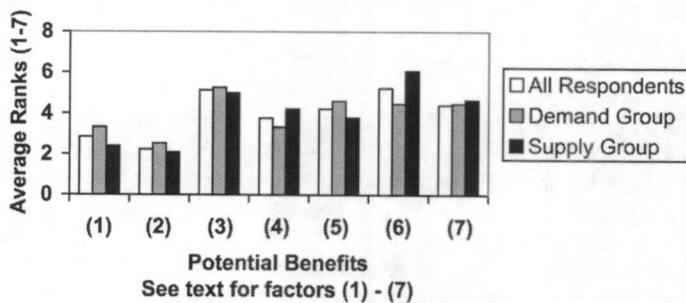


Figure 2.
Long-term partnering benefits from the client's perspective



partnering arrangements. Similarly both groups of respondents identified the potential for long-term cost savings as the second most significant of the potential benefits listed on the questionnaire form.

However, the results also showed that there was no agreement between the demand and supply focus groups of respondents on which factors were ranked as being least significant. It can be seen from Figure 2 that potential benefits in working environment, and improved life-cycle cash-flow were generally considered to be the least significant by all respondents. The different ranking of factors by the two distinct groups of respondents was then examined for statistical significance. According to Naoum (1998) the most appropriate of the non-parametric statistical tests available when assessing ordinal data that were related to more than one attribute was the Spearman (ρ) rank correlation test and so a critical value for seven subjects (see 1-7 above) was set at 0.786 at the level of $p < 0.005$ for the one-tailed test. The null hypothesis was set as "there was no significant difference in the ranking of the potential benefits of long-term partnering between respondents from the demand focus group and respondents from the supply focus group". The results applied to this data set revealed a ρ of 0.905. As this result exceeded the critical value of 0.786 and it was concluded that the null hypothesis should be rejected. This result indicated that there were significant differences in the ranking of the potential benefits of long-term partnering between the differing groups of respondents.

Standardisation and pre-fabrication

The next section of the questionnaire asked respondents to consider the theoretical benefits of incorporating standardised and pre-fabricated components into their partnered projects. It was found that 71 per cent of the respondents to the survey acknowledged that they did make use of standardised and/or prefabricated components in their partnered projects. The survey revealed that respondents perceived that they were typically using between 0-25 per cent in terms of the proportion of project costs that were related to the standardised and/or pre-fabricated components. Similarly a majority (62 per cent) of the survey's respondents anticipated that the increased performance efficiency of the construction process would lead to a reduction in project costs and construction implementation times. The survey also sought data on the issues that were thought to affect the proportion of the project delivered via the use of standardised and/or pre-fabricated components. Respondents were asked to rank for importance (1 = high, 3 = low) the following three factors, namely:

- (1) reduction in construction times due to greater efficiency of site performance;
- (2) the potential to achieve cost reductions through the establishment of supply chain partnering relationships; and
- (3) the potential to customise the project's design to achieve greater user satisfaction.

Figure 3 shows the results obtained from the data collected on this issue. The results showed that respondents ranked the first factor above, the potential to reduce construction times, as the most significant of the potential benefits to be gained from using standardised and/or pre-fabricated components. However there seemed to be greater emphasis on this potential benefit from those respondents who were classified

as belonging to the group of “demand” based partnering alliances. The results showed that both groups of respondents agreed that the least significant of the potential factors was the potential to customise the project’s design to achieve greater user satisfaction. It can be seen that the respondents who were classified as belonging to the group of “supply” focused partnering alliances viewed the potential benefit of customising the design for enhanced user satisfaction than the respondents classified as belonging to the group of demand focused alliances. Given the differences in perspective between the two groups of respondents it was resolved to investigate whether the differences encountered were statistically significant. Accordingly the Spearman (ρ) rank correlation test was used with a critical value set at 1.00 at the level of $p < 0.005$ for the one-tailed test. The null hypothesis was set as “there was no significant difference in the ranking of factors which influence the amount of components to be or not to be standardised from the demand focus group and respondents from the supply focus group”. The results applied to this data set revealed a ρ of 0.865. This result was less than the critical value of 1.00 and it was concluded that the null hypothesis should be accepted. This result indicated that there were no statistically significant differences in the ranking of factors that influence the amount of components to be or not to be standardised in projects delivered via long-term partnering alliances between the differing groups of respondents.

Strategic cost management

This section of the questionnaire addressed matters related to the effectiveness of supply chain alliances and the implementation of open book strategic cost management for the benefit of partner organisations. The first issue to be considered was the nature of the current types of strategic cost management that was being used on the respondents’ partnered projects. The literature reviewed above indicated that of the potential systems available the following were the most likely to be used, namely:

- (1) target cost ownership (TCO);
- (2) open-book costing;
- (3) target costing;
- (4) market monitoring adjustments (MMA); and
- (5) others.

Figure 4 shows the results from the data collected on this issue.

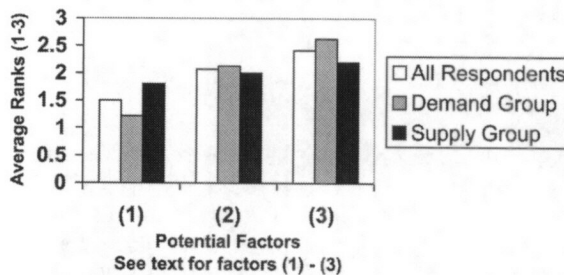


Figure 3.
Factors affecting the percentage of projects that are from standardised/prefabricated components

The results indicated that 98 per cent of the respondents made use of open-book cost management methods in their partnering alliances. In addition it was noticeable that the demand focused group of respondents made greater use of target cost methods than the respondents who were classified as being more supply focused. Other bespoke systems such as shared risk, maximum and minimum payment, guaranteed maximum price, key performance indicators and negotiated fixed cost methods were used in a minority of situations and tended to be more used by the supply focused group of respondents.

The questionnaire then explored what were claimed to be the main benefits of implementing effective cost management systems for client organisations operating as partners in strategic alliances to deliver construction projects. The literature reviewed indicated that the following six factors were the potential benefits, namely:

- (1) reduced grounds for conflicts;
- (2) greater certainty over final costs;
- (3) improved profit margins;
- (4) long-term cost savings;
- (5) improved project quality; and
- (6) stronger relationships with the supply chain.

Accordingly respondents to the survey were asked to rank each of the factors listed for achievability (1 = most achievable to 6 = least achievable) to their organisation. Figure 5 shows the results from the data collected on this matter.

The results showed that most respondents considered the potential of (2), greater certainty of final costs and (5), improved project quality, as being the most achievable as a result of using recognised cost management systems in their partnered projects.

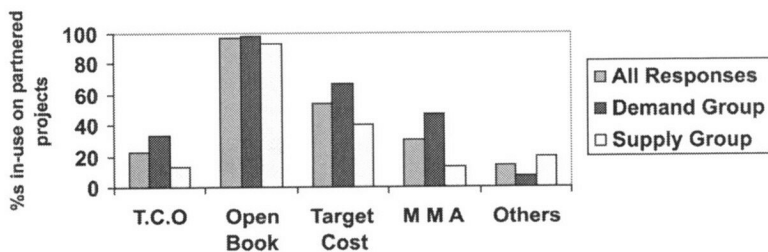


Figure 4. Partnering and the current systems of cost management in use

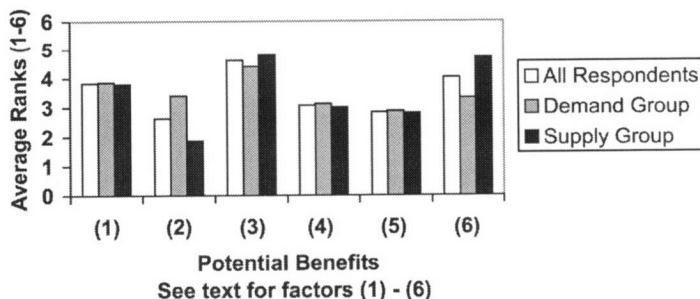


Figure 5. Long-term partnering and the benefits of cost management systems from the client's perspective

Interestingly (3), the potential for improved profit levels, was ranked the lowest of the potential benefits of using recognised cost management systems on partnered projects that were listed on the questionnaire form. The Spearman (ρ) correlation test was used to investigate whether any statistically significant differences existed between the “demand” and the “supply” focused organisations that responded to the questionnaire. The test revealed a ρ of 0.872 which was less than the critical value of 0.886 for $p < 0.05$ set for six subjects. This result indicated that there were no significant statistical differences in the ranking of benefits achieved between the demand side and the supply side groups of respondents when using cost management systems.

Risk management

A total of 100 per cent of the demand focus group of respondents and 93 per cent of the supply side focused respondents agreed that risk analysis was the most important activity within a comprehensive risk management system. Other activities, such as risk estimation, risk evaluation, risk response and risk monitoring were accepted as contributing to the implement of effective risk management processes but were not considered to be the most important feature. Risk transfer was identified as a core element of effective risk management processes within strategic partnering frameworks. Accordingly respondents were asked to indicate the proportions of project risk they transferred along the supply chains that make up their strategic alliances. Figure 6 shows the data collected on this issue.

It can be seen that there was a difference in the approach adopted by respondents from the demand focused and the supply focused partnering alliances. A higher proportion of respondents that were within supply focused partnering alliances sought to transfer a greater proportion of project risks to other supply chain stakeholder organisations than did respondents that were situated in demand focused partnering alliances.

The questionnaire then explored what were claimed to be the main considerations taken into account when transferring risks to other members of the supply chain namely:

- (1) the ability of the party to manage the factor that gives rise to a particular risk;
- (2) the extent to which the risk can be controlled;
- (3) the ability of the party to accept the consequences of the transferred risk;
- (4) the ability of the party to reduce the transferred risk; and
- (5) the ability of the party to accept the transferred risk.

Figure 7 shows the results from the data collected on this matter.

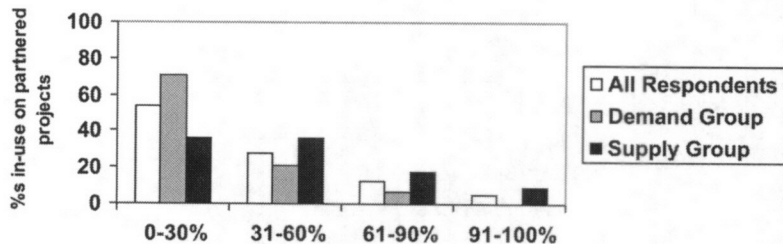


Figure 6.
Partnering and the proportions of risk transfer to the supply chain

Respondents to the survey rated the ability to reduce the risk as well as the capacity to manage the factor causing risk as the most important considerations when transferring risks along project supply chains. It can be seen that there was a difference in emphasis between respondents from the demand focused group and the supply focused group and such differences were then examined for statistical significance. Accordingly the Spearman (ρ) rank correlation test was used with a critical value set at 1.00 at the level of $p < 0.005$ for the one-tailed test. The null hypothesis was set as "there was no significant in the considerations taken into account when transferring risks to other parties" from respondents from the demand focus group and respondents from the supply focus group. The results applied to this data set revealed a ρ of 0.962. As this result was less than the critical value of 1.00 it was concluded that the null hypothesis should be accepted. This result indicated that there were no statistically significant differences in the ranking of factors that affect the transfer of risks between parties involved in projects delivered via long term partnering alliances between the differing groups of respondents.

Conclusions and recommendations

The findings from this study show that there is the potential to achieve significant contributions to the actual delivery of a cultural change towards non-adversarial longer-term strategic alliances between supply chain organisations involved in the delivery of socially owned housing schemes. The survey has gathered data on the extent of partnered project practice amongst project stakeholders involved with this client group as well as factors thought to affect such decisions on projects being delivered as a result of long-term strategic alliances between stakeholder organisations.

The survey has revealed that the use of long-term partnering arrangements with principal contracting organisations, standardised and pre-fabricated components, strategic open-book cost management methods and risk analysis procedures by Housing Association clients are now widespread. Organisations involved in long-term partnering alliances for the delivery of housing association projects in the UK can be classified as belonging to either alliances that are either demand side or supply side in focus. Following statistical analysis it was found that organisations involved in project alliances with such differing foci place differing emphasis on the potential benefits of long-term partnering for such projects. The study identified other differences between the two organisational types in terms of emphasis on their approach to the use of pre-fabricated and standardised components cost management and risk management

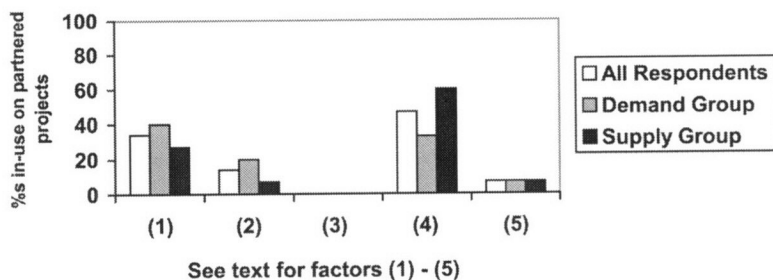


Figure 7.
Factors to consider when transferring risk to the supply chain

processes. However, further analysis revealed such differences could not be considered to be statistically significant.

In conclusion, it can be seen that this study has investigated current practices that have been identified as being at the core of effecting change in the culture of the UK construction industry to achieve better levels of quality and value for money. However, the work has focused exclusively on the perceptions of client organisations and so it is recommended that subsequent work in this topic area collects data from contractors, sub-contractors and suppliers who would also be involved in such supply chain alliances.

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