

Full Length Research Paper

The performance of construction partnering projects in Malaysia

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Accepted 16 February, 2010

The construction industry in Malaysia is a competitive high-risk business as the nation strives to emerge as a developed country. The number of construction companies in the country has been skyrocketing in recent years, including the setting up of many small companies in rural areas. These small companies often face enough problems attaining a good reputation and credibility for themselves, let alone competing with their established counterparts which have mostly been in the industry for longed. The recent hike in the price of materials, such as steel and cement, also poses a threat to small companies with financial constraints. The bigger companies, on the other hand, may at times face a shortage of expertise or a sufficient workforce to perform certain tasks. The construction partnering concept appears to be an ideal solution to the predicaments mentioned, by ensuring mutual benefit to all parties involved by creating a win – win situation. This paper will examine, the performance of construction partnering projects in Malaysia, in relation to the satisfaction level of construction industry players, and the dominant benefits associated with construction partnering. This was done by first identifying the problem and objectives of the research through a thorough literature review based on reliable sources, followed by a comprehensive quantitative data collection through questionnaire surveys. The data was then processed using descriptive analysis to tie up with the objectives, followed by formulating of conclusions. The research revealed that, majority of the respondents agreed that, communication among parties and functionality are the two most dominant variables in determining the performance of a partnering project. In addition, the three dominants benefit and identified the improved culture, increased satisfaction and potential for innovation.

Key words: Partnering, construction projects, performance, Malaysia.

INTRODUCTION

According to Lim and Liu (2001), the number of international construction partnering projects is growing worldwide at an increasing pace, especially in developing countries. Meanwhile, construction partnering in Malaysia is becoming increasingly popular both in multinational construction firms and local government. There are already established partnering arrangements involving two or more indigenous contractors (local and local) and also between indigenous and foreign contractors (local and

foreign) (Mohammed, 2000). Examples include MMC-Gamuda Joint Venture Sdn. Bhd, which was awarded a Malaysian government contract to build an electrified railway track between Ipoh - Padang Besar and Seremban - Johor Bahru.

Kumaraswamy et al. (1996) suggested that, the complexities and risks associated with major construction projects have brought together organizations with diverse strengths and weaknesses to form partnerships to bid collectively and execute projects. Such as partnership, which is defined as “a combination of any two or more firms that create a new entity in a foreign market for the function of distributing product and/or controlling informational flows related to the product of service activity”

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(Tokman et al., 2007). The construction partnering concept is perhaps the most innovative development to date in delivering a project efficiently and reducing construction conflicts such as those mentioned above. It ensures mutual benefits to all parties involved by creating a win-win situation, besides creating efficient teamwork.

However, evaluation of the performance of partnering projects is still inconclusive. This study will therefore focus on three key aspects of project performance, namely, time, cost and quality. The performance of a project is considered ideal if it is completed within its initial scheduled time frame, within its budget estimate, and performed as designed. The study also takes into consideration the soft outcomes, such as the satisfaction of the client or intended user. By considering the soft outcomes, it provided more holistic view on the performance of partnering projects. Besides, this would be able to assist project's stakeholders to familiarize on the risk with regards to soft outcomes that need to be mitigated in the future. A review will be carried out of the development within Malaysia of the construction partnering concept, with the emphasis on projects carried out by contractors registered with Construction Industry Development Board Malaysia (CIDB) Grade G7 with unlimited tendering capacity, and Contractor Services Centre (PKK) Class A with project cost above RM 10 million. Observations relate to design-and-build projects completed between 2003 - 2009.

PARTNERING

The definition of project partnering

The concept of construction partnering originated in the (US) and has gained popularity and worked well in various other countries (Matthews, 1999). According to the Construction Industry Institute Australia (1996), the US Army Corps of Engineers and the Arizona Department of Transportation were the pioneers in applying this concept. It is use in other countries in the early days including the United Kingdom, South Africa (Allen, 1999) as well as Japan, where it deemed the "normal way of working in the local construction industry" (Reading Construction Forum, 1998).

According to Scott (2001), partnering "is a relationship between two or more companies or organisations which is formed with the express intent of improving performance in the delivery of projects." The term partnering is often confused with partnership". The latter is defined by Bennett and Jayes (1995) as "an arrangement involving two or more persons who have agreed to undertake a business venture as co-owners, with the intent to make a profit". The main difference between a partnering arrangement and a partnership is that the members of a joint venture have teamed together for a particular purpose or project, while the members of a partnership have joined together to run "a business in common" (Ward and

Chapman, 2003).

The United Kingdom Construction Industry Board's (CIB) Fact Sheet on Partnering (1998), provides a more authoritative definition of the term "partnering", which reads "a structured management approach to facilitate team working across contractual boundaries". The CIB went on to explain that the fundamental components in a partnering arrangement are formalized with mutual objectives, agreed resolution methods to problems, and an active search for continuous measurable improvements. In other words, a partnering arrangement sets off with the parties involved having common objectives, which encompass the agreement and a commitment to the project. Whenever, a problem crops up, a systematic approach should be adopted to resolve the problem by having more and better discussions taking into consideration the equality of rights between parties, hence creating a win-win situation. In addition, an effective partnering arrangement should always bring about continuous improvement throughout the relationship (Abdul-Rashid, 2000).

The development of partnering efforts in the construction industry

Construction organizations have extensively used partnering or joint ventures (JVs) as a means of transforming hostile, adversarial owner-contractor relationships into more collaborative teams (Larson, 1997). This may be due to the fact that, the construction industry involves too many parties, including suppliers, clients, contractors, consultants and so on. Due to the complexity of the relationship, more often than not, the clients' requirements get lost in the supply chain, as most parties are only interested in their own performances. As a result, the profit is generated through conflict, not value; performance is generated by threat, not co-operation; the delivery of the contract becomes a competition between clients and contractors instead of a joint venture with mutual benefits (Construction Industry Training Board, 2005). Partnering is also receiving a positive response in the construction industry because it understands the necessity of subcontracting and the difficulties of joining the historical division.

By creating a new relationship between all the parties involved, it allows the requirements of the clients to be understood throughout the supply chain, it enables all the parties to participate in its expertise and with new ways of remuneration, and also brings about innovation and a reduction in costs and time (Pau, 2005)

Larson and Drexler (1997) noted that, partnering benefits all parties involved, including the contractors, subcontractors, the owner and the management, as well as on-site employees.

More generally, partnering brings with it benefits in various forms, and to several parties. The advantages over traditional approaches identified by Bresnen and Marshall

(2000) include increased productivity, reduced costs, reduced project duration, improved product quality and improved client satisfaction. The common benefits of partnering come into the following thirteen (13) categories (Chan et al., 2002):

Reduced litigation

In partnering arrangements, the problems of disputes, claims or litigations are reduced to a minimum as a result of open communication and improved working relationships (Cook and Hancher, 1990). Li et al. (2001) also highlighted the fact that, cost arising from disputes and claims are relatively low in the case of partnering projects.

Improved cost control

Partnering arrangements promise better cost control, which subsequently reduces the risk of budget overruns (Construction Industry Institute Australia, 1996; Li et al., 2001). Albanese (1994) suggested several reasons, for better cost performance including alleviating, re-working, reducing scheduled times, heightening the involvement of team members, improving trust, reducing scope definition problems, open communication, lowering change order rates, improving problem solving, eliminating blame shifting, improving the understanding of project objectives and decreasing adversarial relations.

Improved time control

Partnering helps to reduce delay in construction projects in many ways, including better schedule performance, timely decisions, and reliable programming (Li et al., 2001; Albanese, 1994). With the early involvement of contractors, in particular at the design stage, it assists in "constructability input and maximizing value engineering, thus improving both cost and schedule" (Construction Industry Institute, 1991).

Improved product quality

Albanese (1994) suggested that, this is possible as the partnering enables the parties not only to communicate more effectively regarding quality issues, leading to the earlier recognition of potential problems, but also helps to develop a quality consciousness amongst all concerned. A partnering effort also creates a focus on learning and continuous improvement and the raises the quality of products and processes (Lorraine, 1996).

Efficient problem solving

In the partnering approach, the partners will anticipate

potential problems and subsequently develop an action plan focusing on methods as well as solutions (Chan et al., 2002). In a partnering arrangement involving several parties, opinions and ideas are shared and exchanged. Thus, enables one party to learn from another to improve the available problem-solving methods and get maximum results.

Closer relationships

A closer relationship is formed among the partners through enhanced communication, the identification of shared goals and objectives, the recognition of problems arising, and an agreement to identify those problems using a customized procedure (Construction Industry Institute, 1991). These improved relationships provide a better environment in which to carry out the project.

Enhanced communication

In non-partnered projects, that is, conventional ones, communication among the parties essentially hierarchical, so that most working instructions are conveyed indirectly to those carrying out the work. This is where the partnering approach makes a difference by promoting openness trust and efficient communication through common and alleviative language (Li et al., 2001; Construction Industry Institute, 1991). The improved communication results in fewer surprises in terms of schedule delays and increased costs, which might otherwise lead to disputes and litigations (Li et al., 2001).

Continuous improvement

Partnering provides the opportunity for all parties to bring out continuous improvement (Chan et al., 2002). Black et al. (2000) and further explained that it is a joint effort with a long-term focus on eliminating wasteful barriers to improvement.

Potential for innovation

Cook and Hancher (1990) and Hellard (1996) both agreed that an effective partnering relationship encourages the parties to evaluate advanced technology for its applicability in a partnered project. Bourn (2001) pointed out that with the proper use of innovation through open communication, design and construction processes can be greatly improved.

Lower administrative costs

Partnering arrangement provides a way to reduce administrative cost by eliminating defensive case building

(Construction Industry Institute, 1991; Black, 2000). In partnered projects, partners are made aware of the other's legal and litigation concerns, so that, the cost of negotiating and administering contracts is also reduced (Construction Industry Institute, 1991).

Improved safety performance

This can be achieved as the parties involved in a partnered project which are taking on a joint responsibility to ensure a safe working environment. This will subsequently reduce the risk of hazardous working conditions and avoid workplace accidents (Chan et al., 2002).

Increased satisfaction

Matthews et al. (1996) suggested that, partnering provides a more conducive environment for achieving project objectives than non-partnered projects, as all parties involved will generally benefit from the arrangement. For instance, the customers will gain higher level of satisfaction as the arrangement enables them to be closer to the construction process while being better informed (Nielsen, 1996).

Improved culture

According to Fellows (1997), partnering provides a good cooperative framework, which encourages forbearance and yields an output of enhanced trust between participants. Bloom (1997) argued that, evaluations of army partnering contracts had revealed improvements in the working culture among the parties involved.

MEASURING PROJECT PERFORMANCE

Partnering projects in Malaysia have been increasing rapidly from 1994, with an increase of 69% from 1995 - 2000 (Hamimah and Morledge, 2003). This may be due to the many advantages that follow this new approach in the construction industry. However, it is realized that, some partnering efforts have been performing below par and have failed to achieve the anticipated results or potentials (Madhok and Tallman, 1998). It is therefore, vital to measure the performance of a construction partnering project in order to ensure that, it delivers the benefits desired and anticipated. A review of the research literature has revealed five dominant variables which seem to have a significant influence on partnering projects.

Time schedule performance

Keeping schedule is one factor in determining a project's

success (Songer and Molenaar, 1997) which is consistent with the measurement of time overrun. In order to achieve this, proper planning is vital on early stage, including a realistic schedule and reasonable time constraint for each activity, as well as schedule float management for unforeseeable circumstances (Doloi and Lim, 2007). Time should also be closely monitored during construction in order to avoid subsequent delays (Chan et al., 2002).

Cost – budget performance

Keeping to budget is seen as a success criterion in projects (Songer and Molenaar, 1997), which is consistent with the measurement of cost overrun. It can be controlled by monitoring cost budget, the accuracy and practicality of initial cost estimates, progress payment from clients, the revision of cost planning, and the allocation of appropriate budget contingencies for unforeseeable and unexpected circumstances (Doloi and Lim, 2007).

Quality performance

The quality of a project can be measured through the quality of workmanship, which is consistent with overall quality measurement (Songer and Molenaar, 1997). Molenaar et al. (1999) also highlighted three criteria for quality measurement, namely, conformity with expectations, administrative burden, and overall owner satisfaction. This highlights the importance of establishing project quality control, e.g. through the utilization of Quality Assurance or Control processes (Doloi and Lim, 2007).

Functionality – technical performance

Technical performance can be measured by the degree of variations from the specification originally listed, which are associated with expectations of project participants and can be measured by the degree of conformance to technical performance specifications (Lam et al., 2007). In other words, meeting specifications, which include the "fitness for purpose" objective, is one success criterion for construction projects, which is consistent with the measurement of technical performance (Songer and Molenaar, 1997).

Communication among parties

For partnering projects involving several but inter-related and inter-dependant participants, effective open communication becomes an essential element in leadership and integrating the workforce, as well as taking decisions to ensure the success of a project (Laufer et al., 1996).

Table 1. Respondents' degree of satisfaction for partnering project performance.

Criterion	Mean (n=33)	Standard Deviation	Ranking
Communication among parties	3.91	0.805	1
Functionality	3.88	0.820	2
Time performance	3.85	1.228	3
Cost performance	3.79	1.139	4
Quality performance	3.64	0.895	5

Clarke (1999) suggested that, when people are better informed and more aware of what is happening in the project they are working on, they will tend to be more involved and committed to its progress.

RESEARCH METHODOLOGY

The literature search brought to light, on a list of critical variables affecting the performance of construction partnering. A statistical analysis was then conducted in order to understand the impacts of each variable on project performance, and for this purpose, a questionnaire was used. The questionnaire method enables the researcher to collect data from large number of potential respondents within a short period and makes a possible quantitative analysis. A questionnaire survey also reduces biasing errors resulting from the personal characteristics of interviewers and the variability in their skills. A questionnaire was developed to elicit opinions on the performance and benefits of construction partnering and distributed to a large number of respondents to achieve convincing results for the quantitative part of the research.

A Simple Random Sampling method was adopted to identify potential respondents who are currently involved or who have been involved in construction partnering in Malaysia. The respondents were required to answer the questionnaire based on construction projects fulfilling the predetermined criteria mentioned above. Questionnaires were distributed to selected technical professionals by mail, fax or by hand. The target population consisted of three types of construction practitioners, including the clients, the designers and the builders in order to reflect a balanced and unbiased point of view to ensure the validity of the research. Clients included commercial developers as well as government authorities; designers were represented by architects and consultants; and builders included contractors as well as sub-contractors. The questionnaire was divided into three sections:-

- i) Section A: The respondent's background in the construction industry;
- ii) Section B: Information relating to a selected partnering project which the respondent is currently involved in or has been involved in; and
- iii) Section C: The respondent's experience and opinions on the performance of constructing partnering.

The data received was subsequently analysed using the Statistics Package for Social Sciences (SPSS) software Version 16, using the particular measures of central tendency (mode and mean values). Conclusion were drawn from the findings of the research and linked to the objectives originally formulated. Recommendations for improvement and suggestions for further research were also drawn up to aid and inform future research projects in related fields.

DATA ANALYSES AND DISCUSSION

Thirty eight responses were received to the 100 ques-

tionnaires sent out to clients, designers and builders. However, only 33 of the 38 responses were valid as the remaining five were incomplete and/ or invalid as the respondents had not participated in any construction partnering projects. This sampling percentage of 38%, meet the suggested benchmark of 30% (Gillham, 2000). The demographic profiles of the respondents who took part in the final survey are set out in Figure 1.

The pie chart in Figure 1 indicates that, majority of respondents comprised clients (63%) followed by designers and builders 25 and 12%, respectively. The designation implies that, the respondents were important project stakeholder handling the partnering project. Therefore, it is believed that, the data could produce reliable findings. In order to indicate the differences in level of importance among the criteria for performance measurement, the Mean Score was used to rank them using the method supported by Kumaraswamy and Chan (1996).

Table 1 shows the ranking of priority based on means for the degree of satisfaction for partnering project performance. The results indicate that, the communication among parties was considered as the most satisfactory criterion in terms of project performance. This finding reconfirms the statement that, effective open communication is an essential element in leading and integrating teams of people, and subsequently affecting the decision-making process to ensure success (Laufer et al., 1996). Criterion ranked second was functionality, which involves conforming the technical requirements of a partnering project. This supports the idea that, if the end-product of a project does not meet the pre-determined requirements, it reflects the poor implementation and coordination of works as well as an incompetent workforce. The lowest ranking criterion of the five was quality performance, which contradicts the view of Dolo and Lim (2007) who pointed out the importance of establishing project quality control in an effort to ensure the success of a project. The result also implies that, the local construction industry still lacks a means of measuring quality performance in construction projects. However, the mean value for the criterion is almost 4, which is near a satisfactory level.

From the analysis presented in Table 2, it can be seen that, majority of respondents regarded an improved culture as the main benefit of construction partnering. This is in line with the findings of Bloom (1997) on army

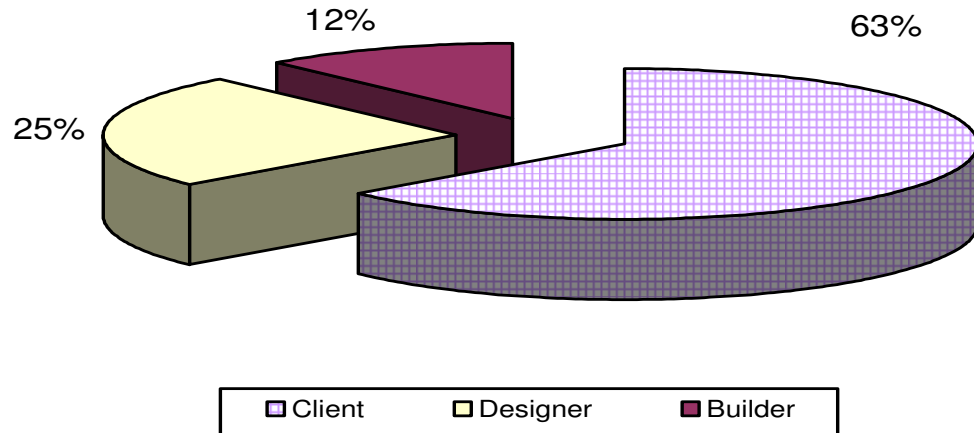


Figure 1. Job designation of the respondents.

Table 2. Respondents' opinion on benefits of partnering projects.

Benefit	Mean (n=33)	Standard Deviation	Ranking
Improved culture	4.06	0.659	1
Increased satisfaction	4.00	0.612	2
Potential for innovation	4.00	0.500	2
Reduced litigation	3.97	0.770	4
Improved safety performance	3.94	0.659	5
Closer relationship	3.91	0.805	6
Efficient problem solving	3.91	0.678	6
Continuous improvement	3.88	0.600	8
Enhanced communication	3.88	0.600	8
Improved cost control	3.88	1.053	8
Lower administrative cost	3.85	0.755	11
Improved product quality	3.85	0.566	11
Improved time control	3.82	1.044	13

partnering contracts, which observed improvements in the working culture among the parties involved in the contract. Second in rank ordering were increased satisfaction and the potential for innovation. The former refers to the satisfaction of all participants involved in the partnering contract. This is possible as in a partnering contract, when all parties are better informed of each other's condition and progress. A better informed workforce ensures a greater level of commitment and involvement in the project (Clarke, 1999). As for the potential for innovation, a partnering approach enables open communication with proper use of innovation, which in turn allows for improvements in design and construction processes (Bourn, 2001). Time control is ranked last, despite a high mean value of 3.82. This has to take into consideration other affecting factors such as design variance. In all, the benefits listed in Table 2 are considered justified, as they have a combined mean value of almost 4, which is close to the satisfactory level.

Conclusion

From the research, the conclusion can be drawn that, the majority of players in the Malaysian construction industry find that communication among parties and functionality are the two dominant factors in determining the performance of a partnering project. The partnering approach also brings local benefits, since its application in the local context generates benefits for all project participants, whether contractors, consultants or clients, and these benefits are to be found in particular a areas of time, cost, quality and other soft outcomes. Drawing on the immense hands-on experience of the respondents in the industry, three dominant benefits from construction partnering and were identified, namely, improved culture, increased satisfaction and potential for innovation. Project partnering is not new to the construction industry, especially in western countries. However, the concept is still not fully developed in Malaysia and is only common among

projects carried out by government or by multi-national organizations. The application has also yet to achieve the establishment as seen in countries like the United Kingdom, in the sense that, the benefits and potentials have not been fully utilized. Despite the shortcomings, the overall findings from the study revealed that the majority of the respondents from the construction industry reckoned that the performance of construction partnering in Malaysia was satisfactory. Therefore, to ensure continuous improvement and development of the partnering concept, and also to enable all parties involved to benefit from the concept, stakeholders should ensure that, construction partnering projects are carefully planned, monitored and implemented.

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