

# Suitability of Construction Management as a Procurement Method for the Construction of Hotels in Sri Lanka

## Sivakumaran, S

Department of Building Economics, University of Moratuwa, Sri Lanka  
pssiva7989@gmail.com

## Perera, B.A.K.S

Department of Building Economics, University of Moratuwa, Sri Lanka  
pererabaks@yahoo.co.uk

## Perera, K.T.P.K

Department of Building Economics, University of Moratuwa, Sri Lanka  
treshani.perera102@gmail.com

### Abstract

*The Construction Industry is the backbone of the economy of any country. The procurement method chosen for its activities has a significant effect on its performance. Traditional systems practiced in the past have been subject to much criticism over the years and they therefore have now been replaced with several alternative methods. The Construction Management (CM) is one such alternative method. The literature already available on this subject indicates that the CM is suitable for fast-track projects that handle the construction of hospitals and hotels. In Sri Lanka, the demand for hotels is increasing exponentially. Therefore, this research aims at investigating the suitability of CM as a procurement method for hotel building construction in Sri Lanka and at proposing a form of CM suitable for the construction of hotels in Sri Lanka if CM itself is found suitable for this work. The research commenced with a literature survey. Subsequently, semi-structured interviews and questionnaire surveys were carried out. Content analyses and multi-attribute methods were used for the data analysis. The study reveals that CM is a 'moderately suitable' procurement method for the construction of hotels in Sri Lanka.*

**Keywords:** Construction Management, Hotel Building Construction, Procurement Systems.

## INTRODUCTION

### **Background**

The Construction Industry is considered as the backbone of the economy of any country (Kumaresan, 2010). The procurement method selected significantly influences the performance of the Construction Industry (Luu, Ng, & Chen, 2003). In the past, Traditional Procurement systems were the most preferred. (Cheung, Yiu, & Chim, 2006). However, in the recent years, these procurement methods have been subject to much criticism due to several reasons (Dali, 2013). As a means of overcoming this criticism, alternative procurement methods have now been introduced (Rameezdeen, 2007). Construction Management (CM) is one such alternative procurement method coming under the category of Management Oriented Procurement Systems (Damayanthi, 2009). Marines (2010) has suggested that CM is suitable for fast track projects involving renovation, extension and construction of hospitals and hotel buildings.

According to data made available by the Sri Lanka Tourism Development Authority (SLTDA, 2012), the construction of hotel buildings is on the increase in Sri Lanka because of the high demand that exists for hotels from tourists who arrive in the country (SLTDA, 2012). So far, in Sri Lanka there have been only a few projects that have used CM procurement approaches (Weeraman, 1992). Therefore, a study about the suitability of CM as a procurement method for the construction of hotel buildings in Sri Lanka has become necessary in order to fill the gap in the literature and to face the demands of the tourist industry which if expanded can rapidly boost the country's economy.

### **Aim and objectives**

The aim of this research is to assess the suitability of CM as a procurement method for the construction of hotel buildings in Sri Lanka having the following as its objectives;

- Identification of different types of procurement methods available in the Construction Industry

- Identification of the unique characteristics of hotel building construction to consider as procurement selection factors
- Analysis of the suitability of CM as a procurement method for the construction of hotel buildings

## LITERATURE REVIEW

### *Overview of procurement systems in the Construction Industry*

The word 'Procurement' as applicable to the Construction Industry Has been defined by several authors (Love, Skitmore, & Earl, 1998; Masterman, 2002; Rashid, Taib, Ahmad, Nasid, Ali, & Zainordin., 2006). Recently, Dewage (2009) has simply defined it as the procedure adopted to procure construction work. In the literature, Ratnasabhpathy (2006); Ashworth and Hogg (2007) and many other authors have categorized procurement systems into four comprehensive categories, viz., Separated Systems, Integrated Systems, Management Oriented Systems; and Collaborative Systems.

### **Separated procurement systems**

These systems are also recognized as 'traditional' systems (Uher & Davenport, 2002). In these systems there is a clear and rigid separation between the design and the construction stages (Oyegoke, Dickinson, Malik, McDermott, & Rowlinson, 2009). The most common variants of these Systems are the lump sum, measure and pay, prime cost (cost reimbursement) and schedule of rates contracts (Rowlinson, 1999).

### **Integrated procurement systems**

In an Integrated System the design and the construction stages integrate with each other (Wijewardana, Jayasena, & Ranadewa, 2013). According to McDermott (1999), the general variants of the system are the Design and Build, Novated Design and Build, Turnkey, Package Deal, Design and Construct and Concession Contracts.

#### 2.1.3 Collaborative procurement systems

The simple concept behind Collaborative Systems is the collaboration that exists between or among two or more parties towards attaining project objectives successfully through rational relationships, commitment, and collective investment (Bagnall, 1999). According to Wijewardana et al. (2013) partnering is the latest collaborative system that has received global attention considerably. Harris and McCaffer (2001) have specified the common variants to the Collaborative Systems as Joint Ventures, Partnering, Alliancing (Single target out-turn cost), Voluntary Arrangements and New Engineering.

### **Management oriented procurement systems**

The crucial feature of these systems is the addition of a separate management layer into the design and construction (Rameezdeen & De Silva, 2002). Hence, under these arrangements, the client enters into a Contract Agreement with an organization, which will be held responsible for the management and the coordination of both the design and the construction of the work for a fee (Ratnasabhpathy, 2006). In the literature, Kovacs (2004); Ferry and Brandon (2007); Ashworth and Hogg (2007); and Rameezdeen and Ratnasabhpathy (2007) have defined the Management Oriented Procurement System with CM and Management Contracting as variants.

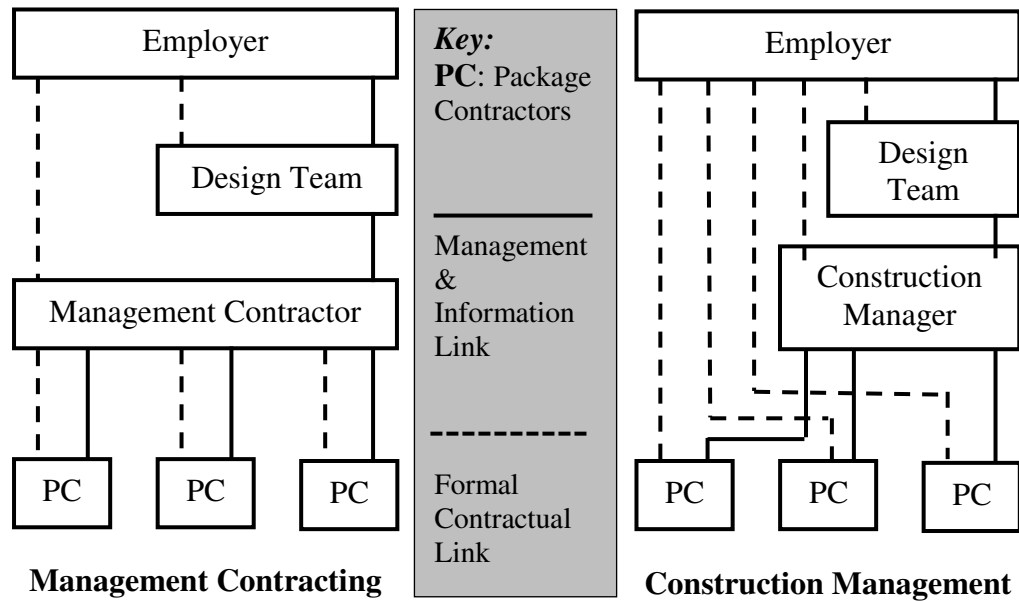
### ***Construction management procurement method***

CM is a project delivery system that was introduced in the 1960's in the UK (Oyegoke, 2001). In the literature, several authors have proved the success of the system which, although practiced to a limited extent in the 1930's had gained popularity in the 1980's and 1990's (Oyegoke, 2001).

### **Contractual arrangement of construction management**

Although Management Contracts and CM contracts are very similar to each other in many respects, there is one fundamental distinction, as shown in Figure 1, between the two Systems (Hackett, Robinson, & Statham, 2007) with regard to the contractual arrangements between the parties.

According to the explanation given by Hackett et al. (2007), in Management Contracting, the Works Contractors or the Package Contractors are in contract with the Management Contractor whereas in CM, none of the Work Contractors or the Package Contractors will enter into a Contract with the Construction Manager with all their contracts being with the Employer.



**Figure 1: Differing contractual arrangements**  
 (Source: Hackett, Robinson, & Statham, 2007)

**Construction management procurement methods practiced in Sri Lanka**

A recent study by Joseph and Jayasena (2008) reveals that Management Contracting has recorded a usage rate of only 1% during the period 1977-2003, and that only a few complex and large projects have been procured using this method.

**Table 1: Trend of the use of construction procurement systems in Sri Lanka**

Procurement System	% Use (average)					
	1977 - 81	1982 - 86	1987 - 91	1992 - 96	1997 - 00	2001 - 03
Measure and Pay	55	50	58	50	64	72
Lump Sum	12	10	8	7	10	5
Prime Cost	10	8	5	4	3	1
Design and Build	22	31	28	35	21	22
Management Contracting	1	1	1	1	1	0
Joint venture	0	0	0	3	1	0
<b>Total</b>	100	100	100	100	100	100

(Source: Joseph & Jayasena, 2008)

According to the same study, CM has not been used for very long and thus it as a such CM Procurement Method could be considered as quite new to Sri Lanka. Therefore, knowledge on the CM Procurement Method becomes necessary if one is to analyse the suitability of CM to hotel building construction in Sri Lanka.

**Overview of the hotel sector**

Facilities offering hospitality to travelers have always been a feature of the ancient civilizations (Bonvin, 2003). Gallop (2003) explains that for a period of about 200 years in the mid-17<sup>th</sup> century, coaching inns provided lodging for coach travelers. Gross (2012) states that the accommodation provided by hotels those days consisted only of a room with a bed, a cupboard, a small table and a washstand. However, nowadays hotels provide rooms with modern facilities which include en-suite bathrooms, air conditioning or climate control, telecommunications and messaging facilities etc. (Gupta & Maurya, 2014).

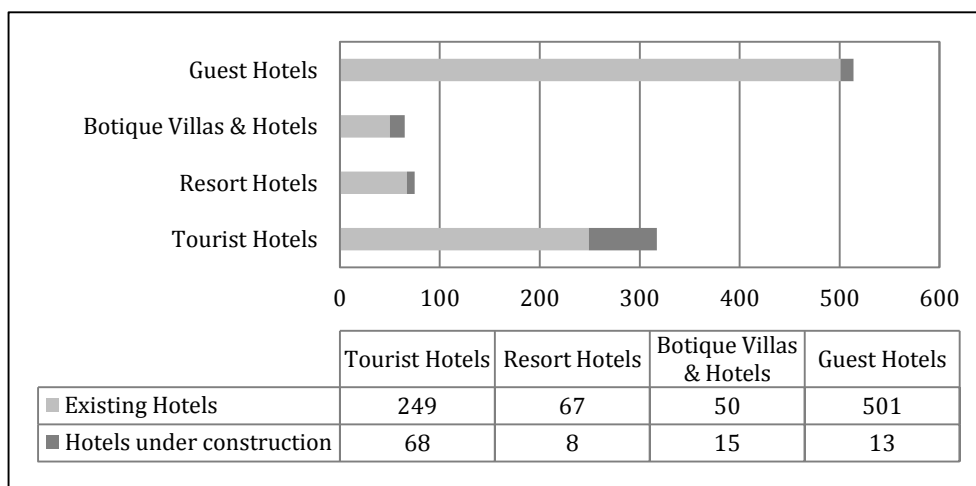
**Uniqueness and specialty of hotel building construction**

Hotel buildings are unique as compared to other types of commercial buildings (Priyadarsini, Xuchao, & Eang, 2009) in that they have different operating schedules for different functional facilities (Deng & Burnett, 2000). Venter and

Cloete (2007) have also found that there are only a few similarities between hotels and other commercial buildings. Hotel development has some unique characteristics and would therefore require management expertise of a specific nature. They further stated that a combination of extreme uncertainty, an extensive and ever-shifting array of market segments and high expectations of the parties concerned frequently make hotel development more exciting and challenging than any other kind of real estate development (Venter & Cloete, 2007). Therefore, it is evident that hotel construction involves very complex and high risk projects often requiring huge amounts of time, energy and capital investment. Moreover, Venter and Cloete (2007) have suggested that the physical implementation of such a project requires good co-ordination among architects, engineers and contractors and its success would depend on a combination of factors such as marketing, economics, location, enterprise, professionalism of the project team and planning and design.

**Present demand for hotel construction in Sri Lanka**

In a recent survey, International Finance Corporation (IFC, 2013) has mapped all types of existing hotels and those that are currently under construction in Sri Lanka. Figure 2 shows the number of existing hotels and the number under construction.



**Figure 2: Existing and under construction hotels in Sri Lanka**  
 (Source: International Finance Corporation [IFC], 2013)

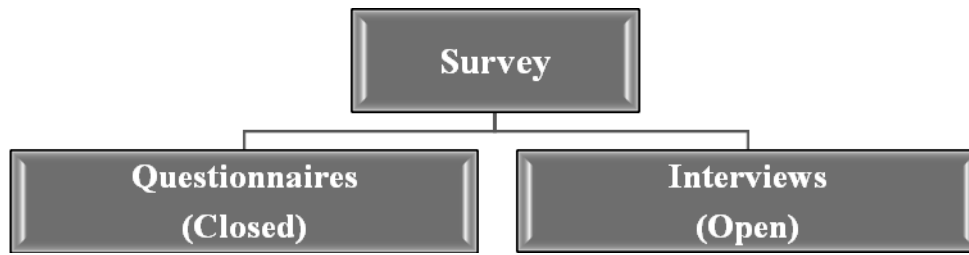
From Figure 2, it is evident that accommodation facilities for domestic tourists need to be increased significantly although the ongoing projects in the hotel sector can be expected to cater to the anticipated increase in the tourist arrivals (CBSL, 2013) from overseas. Timely completion of these projects giving due consideration for costs and quality of work would be vital.

**Suitability of construction management to hotels**

Several reviewed literature has indicated some of the key features of the CM procurement method. Certain characteristics unique to hotel building construction have been identified as procurement selection factors. Appropriate correlation between these factors will indicate CM as a procurement method suitable for the construction of hotel buildings.

**METHODOLOGY**

This research is designed as a survey study to analyse the suitability of CM as a procurement method for the construction of hotel buildings in Sri Lanka. A mixed approach is supplemented with both a qualitative and a quantitative analysis of the survey data. The foremost two objectives were merely attained with qualitative analysis of interviews. Since the final objective targeted to identify the suitability of CM as a procurement method for construction of hotel buildings in a quantitative manner, the outcome of research technique should be easy to analyse and quantify. Therefore, an appropriate questionnaire survey with close ended questions was prepared by merging the qualitative results of the semi-structured interviews. Figure 3 shows the techniques of survey approach of this study.



**Figure 3: Techniques of survey approach**

(Source: Kumaresan, 2010)

**Interviews**

The key objectives of the interviews were to identify different types of procurement methods available in the Construction Industry and also the unique characteristics of hotel building construction that can be considered as procurement selection factors. Therefore in order to identify additional factors to those provided in literature review, semi-structured interviews were conducted among three experts who were purposely selected from the Construction Industry each of whom has had more than 20 years of experience working in well-reputed organizations. Interview data was analysed using code based content analysis.

**Questionnaire survey**

The questionnaire survey was aimed at accomplishing the primary objective of the research which is to analyse the suitability of CM as a procurement method for the construction of hotel buildings in Sri Lanka. Thus, as a quantitative component of the study, the detailed questionnaire survey was conducted among purposely selected professionals in the Construction Industry who are having experience and knowledge in the area of both hotel buildings construction and CM procurement method. The respondents came from different types of organisations viz., clients, consultants and contractors and had varying educational and professional qualifications and experience. All had a minimum of five years' experience in the Construction Industry. There were fifty (50) responses to the eighty five (85) questionnaires that were distributed among the respondents which resulted in a rate of response of 58.82%. Multi-attribute analytical technique with the aid of SPSS statistical software was used to analyse the respondents' rankings to CM as a procurement method that can be adopted in the construction of hotel buildings.

**TYPES OF PROCUREMENT METHODS AVAILABLE IN THE CONSTRUCTION INDUSTRY**

The available types of procurement methods were identified through literature review and through the use of semi-structured interviews and these methods were modified to suit the conditions in Sri Lanka. The procurement systems presently practiced can be categorized into four comprehensive categories, i.e. Separated Systems, Integrated Systems, Management Oriented Systems; and Collaborative Systems. In Table 2, procurement methods identified through interviews are highlighted in **bold** text. In Separated Procurement Systems, 'Provisional Quantities' and 'Variation Provisions' can be treated as alternative procurement methods. Furthermore, 'Development Agreement' is a flexible means of implementing a property development project. Public-Private Partnerships (PPP) and Production Sharing Agreements (PSA) are two alternatives under Concession Contracts in Integrated Procurement Systems. Early Contractor Involvement (ECI) is another procurement method coming under the category of Collaborative Procurement Systems.

**Table 2: Identified alternative construction procurement methods**

<i>Separated Procurement Systems</i>	
<ul style="list-style-type: none"> <li>• Lump sum</li> <li>• Measure and pay (Re-measurement)</li> <li>• Prime cost (Cost reimbursement)</li> <li>• Schedule of rates</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Provisional quantities</b></li> <li>• <b>Variation provisions</b></li> <li>• <b>Development agreement</b></li> </ul>
<i>Integrated procurement systems</i>	
<ul style="list-style-type: none"> <li>• Design and build</li> <li>• Novated design and build</li> <li>• Turnkey</li> </ul>	<ul style="list-style-type: none"> <li>• Concession contracts               <ul style="list-style-type: none"> <li>- Private finance initiatives (PFI) [BO; BOO; BOT &amp; BOOT]</li> <li>- <b>Production sharing agreement (PSA)</b></li> <li>- <b>Public-private partnerships (PPP)</b> [DBOM; DBM; DBF &amp; DBFM]</li> </ul> </li> <li>• Package deal</li> <li>• <b>Long term maintenance and infrastructure services contracts</b></li> </ul>

<i>Collaborative Procurement Systems</i>	
<ul style="list-style-type: none"> <li>• Join ventures</li> <li>• Partnering</li> <li>• Alliancing (Single TOC)</li> </ul>	<ul style="list-style-type: none"> <li>• Voluntary arrangements</li> <li>• New engineering</li> <li>• <b>Early Contractor Involvement (ECI)</b></li> </ul>
<i>Management Oriented Procurement Systems</i>	
<ul style="list-style-type: none"> <li>• Construction management</li> <li>• Management contracting</li> </ul>	<ul style="list-style-type: none"> <li>• Design and Manage</li> </ul>

### **UNIQUE CHARACTERISTICS OF HOTEL BUILDING CONSTRUCTION THAT CAN BE CONSIDERED AS PROCUREMENT SELECTION FACTORS**

In Section 2.3.1, the unique characteristics of hotel building construction have been identified through literature review. Several other characteristics unique to hotel building construction have been identified as procurement selection factors through semi-structured interviews (Refer the second column in each of the Tables 3, 4 and 5). In each of the Tables given in Sections 6.1, 6.2 and 6.3, the characteristics that were identified through interviews are highlighted in **bold** text. Some characteristics have been identified as clients' requirement related procurement selection factors, viz., price competition (prequalification, tendering cost and value for money), fastness of response to clients' new requirements (variations and extra work), reliability and innovativeness in the design and configuration of facilities (workmanship, functionality, efficiency and comfort), sustainability, payment method, usage of long lead items and time constraints were identified as project related procurement selection factors. The influence of foreign countries and the economic and political conditions of the country were identified as external environment related procurement selection factors. The characteristics unique to hotel building construction that come under each of the three types of procurement selection factors individually contribute to the selection of the most suitable procurement method. Therefore, these procurement selection factors based on the characteristics that are unique to hotel building construction can be used as a basis to analyse the suitability of CM as a procurement method for hotel building construction in Sri Lanka.

### **SUITABILITY OF CM AS A PROCUREMENT METHOD FOR THE CONSTRUCTION OF HOTEL BUILDINGS**

This Section attempts to accomplish through a questionnaire survey the key objective of the research, which is to analyse the suitability of CM as a procurement method for the construction of hotel buildings. The respondents were requested to rank the suitability of CM as a procurement method for a given scenario in hotel building construction based on a five point Likert scale. Finally, the Mean Rating Value (MR) was used to analyse the level of suitability of CM towards meeting a given characteristic of hotel construction and the Overall Suitability Score (OSS) has been used to indicate the overall suitability of CM as a procurement method for the construction of hotel buildings. Suitability was analysed under three categories viz., 1. Clients' requirement related 2. Project related and 3. External environment related after which the overall suitability was analysed.

#### ***Suitability of CM to hotel construction in relation to clients' requirement related procurement selection factors***

Throughout the interviews, eleven (11) clients' requirement related procurement selection factors were identified in relation to hotel building construction and in the questionnaire survey respondents were requested to rank the suitability of CM as a procurement method against each selection factor.

Table 3 given below presents these procurement selection factors in the order of their significance based on the mean value of the ranks given by the respondents.

The results of the survey clearly indicate that the 'Aesthetics of the building' (C6) is collectively identified as the most significant clients' requirement related procurement selection factor. This was evident from its Mean Rating (MR) value of 4.43. Moreover, 'Reliable and innovative design' (C10) was identified as the second most significant clients' requirement related procurement selection factor in assessing the suitability level of CM to hotel buildings construction. It had a Mean Rating (MR) value of 4.34. Each of the clients' requirement related factors C11, C1, C9, C7 and C4 has obtained a Mean Rating (MR) value of more than 4.00 in the suitability ranking of CM to hotel building construction. Therefore, all these clients' requirement related procurement selection factors indicate CM as a 'highly suitable' procurement method for the construction of hotel buildings in Sri Lanka. Each of the clients' requirement related factors C2, C3 and C5 has obtained a Mean Rating (MR) value of more than 3.00 in the suitability ranking of CM to hotel building construction and all these clients' requirement related procurement selection factors indicate CM as a "moderately suitable" procurement method for the construction of hotel buildings in Sri Lanka.

**Table 3: Suitability of CM to hotel construction in relation to clients' requirement related procurement selection factors**

NO	Client related procurement selection factors	Suitability level					MR	RII	CSS	Rank
		VHS 5	HS 4	MS 3	SS 2	NS 1				
C6	Aesthetic of building	53%	38%	9%	0%	0%	4.43	0.887	0.357	1
C10	<b>Reliable &amp; innovative design</b>	51%	32%	17%	0%	0%	4.34	0.781	0.315	2
C11	<b>Configuration of facilities (Workmanship, Functionality, Efficiency &amp; Comfort)</b>	38%	55%	2%	6%	0%	4.25	0.800	0.309	3
C1	Cost related short term objectives (Capital cost & Completion within budget)	43%	32%	15%	9%	0%	4.09	0.819	0.305	4
C9	<b>Quick response to clients new requirements (Variations &amp; Extra work)</b>	34%	47%	9%	9%	0%	4.06	0.811	0.299	5
C7	Team performance	36%	36%	23%	6%	0%	4.02	0.804	0.294	6
C4	Time related factors (Planning, Designing, Tendering, Evaluation, Construction time, Early start, Speed of construction)	42%	26%	23%	9%	0%	4.00	0.849	0.309	7
C2	Cost related long term objectives (Maintenance cost & Operational cost)	28%	40%	26%	6%	0%	3.91	0.868	0.309	8
C3	Financial risk factors	34%	43%	8%	9%	6%	3.91	0.781	0.277	8
C5	Stage completion	21%	25%	21%	30%	4%	3.28	0.558	0.166	10
C8	<b>Price competition (Prequalification and tendering cost &amp; Value for money)</b>	13%	13%	32%	23%	19%	2.79	0.657	0.167	11
Overall suitability score									<b>3.107</b>	
Very Highly Suitable (VHS) = 5, Highly Suitable (HS) = 4, Moderately Suitable (MS) = 3, Somewhat Suitable (SS) = 2, Not Suitable (NS) = 1										

**Suitability of CM to hotel construction in relation to project related procurement selection factors**

There were nine (9) project related procurement selection factors that were considered in relation to hotel building construction. Table 4 below indicates these project related procurement selection factors in the order of their significance which is based on the mean value of the ranks given to them by the respondents.

**Table 4: Suitability of CM to hotel construction in relation to project related procurement selection factors**

NO	Project related procurement selection factors	Suitability level					MR	RII	CSS	Rank
		VHS 5	HS 4	MS 3	SS 2	NS 1				
P2	Project complexity (Cost, Technique & construction method)	66%	26%	8%	0%	0%	4.58	0.917	0.467	1
P9	<b>Usage of long lead items</b>	47%	47%	6%	0%	0%	4.42	0.883	0.433	2
P6	<b>Time constrains</b>	49%	25%	26%	0%	0%	4.23	0.845	0.397	3
P4	Project site location	51%	21%	9%	19%	0%	4.04	0.736	0.330	4
P1	Project physical characteristics (Type, Size)	42%	19%	17%	19%	4%	3.75	0.751	0.313	5
P5	Site risk factors	17%	42%	34%	8%	0%	3.68	0.808	0.330	6
P8	<b>Sustainability</b>	19%	36%	32%	13%	0%	3.60	0.721	0.289	7
P7	<b>Payment method</b>	25%	30%	23%	23%	0%	3.57	0.672	0.267	8
P3	Project funding method	23%	23%	28%	21%	6%	3.36	0.713	0.266	9
Overall suitability score									<b>3.092</b>	
Very Highly Suitable (VHS) = 5, Highly Suitable (HS) = 4, Moderately Suitable (MS) = 3, Somewhat Suitable (SS) = 2, Not Suitable (NS) = 1										

The results of the survey clearly indicate that 'Project Complexity (Cost, Technique and construction method)' (P2) is the most significant project related procurement selection factor having a Mean Rating (MR) value of 4.58. The 'Usage of long lead items'(P9) which was placed as the second most significant project related procurement selection factor had a Mean Rating (MR) value of 4.42. Each of the project related factors P6 and P4 has obtained a Mean Rating (MR) value of more than 4.00. Thus, these project related procurement selection factors indicate CM as a 'highly suitable' procurement method for the construction of hotel buildings in Sri Lanka. Each of the project related factors P1, P5,

P8, P7 and P3 has obtained a Mean Rating (MR) value of more than 3.00 and all these project related procurement selection factors also indicate CM as a ‘moderately suitable’ procurement method for the construction of hotel buildings in Sri Lanka.

**Suitability of CM to hotel construction in relation to external environment related procurement selection factors**

There were six (6) procurement selection factors identified under the category of external environment related procurement selection factors. Table 5 below indicates these six procurement selection factors in the order of their significance based on the mean value of the ranks given to them by the respondents.

**Table 5: Suitability of CM to hotel construction in relation to external environment related procurement selection factors**

NO	External environment related procurement selection factors	Suitability level					M R	RII	CSS	Rank
		VHS 5	HS 4	MS 3	SS 2	NS 1				
E2	Experienced, Educated contractors availability	43%	43%	13%	0%	0%	4.30	0.860	0.617	1
E3	Material availability	38%	38%	17%	8%	0%	4.06	0.811	0.549	2
E1	Government policy	21%	40%	15%	25%	0%	3.57	0.702	0.418	3
E4	External risk factors (Industrial actions, Environmental issues, disasters & etc.)	23%	26%	30%	21%	0%	3.51	0.713	0.417	4
E6	<b>Influence of Foreign countries</b>	17%	21%	47%	15%	0%	3.40	0.653	0.370	5
E5	<b>Economic &amp; political condition of country</b>	21%	17%	30%	32%	0%	3.26	0.679	0.369	6
Overall suitability score									<b>2.740</b>	
Very Highly Suitable (VHS) = 5, Highly Suitable (HS) = 4, Moderately Suitable (MS) = 3, Somewhat Suitable (SS) = 2, Not Suitable (NS) = 1										

The results of the survey reveal that ‘Experienced, Educated Contractors availability’ (E2) was perceived as the most significant external environment related procurement selection factor obtaining a Mean Rating (MR) value of 4.30. Meanwhile, ‘Material availability’(E3) placed as the second most significant external environment related procurement selection factor had a Mean Rating (MR) value of 4.06. Each of the external environment related factors E1, E4, E6, and E5 has obtained a Mean Rating (MR) value of more than 3. Thus all these project related procurement selection factors indicate CM as a ‘moderately suitable’ procurement method for the construction of hotel buildings in Sri Lanka.

**Overall suitability of CM procurement method for the construction of hotel buildings**

The survey analysis is reveals that all three procurement selection criteria (clients’ requirement related, project related and external environment related) indicate CM as a ‘moderately suitable’ procurement method for the construction of hotel buildings in Sri Lanka.

**Table 6: Suitability of CM procurement method for construction of hotel buildings in relation to procurement selection factors**

Suitability level	Project procurement selection factors		
	<i>Clients’ requirement related</i>	<i>Project related</i>	<i>External environment related</i>
Very Highly Suitable	N/A	N/A	N/A
Highly Suitable	C6, C10, C11, C1, C9, C7, C4	P2, P9, P6, P4	E2, E3
Moderately Suitable	C2, C3, C5	P1, P5, P8, P7, P3	E1, E4, E6, E5
Somewhat Suitable	C8	N/A	N/A
Not Suitable	N/A	N/A	N/A
Overall suitability score (OSS)	<b>3.107</b>	<b>3.092</b>	<b>2.740</b>
OSS value: < 1.51: Not suitable, 1.51 – 2.49: Somewhat suitable, 2.50 – 3.49: Moderately suitable, 3.50 – 4.49: Highly suitable, > 4.49: Very highly suitable			



This was evident from Table 6 which illustrates an Overall Suitability Score (OSS) of 3.107 to the CM procurement method in relation to clients' requirement related, an Overall Suitability Score (OSS) of 3.092 in relation to project related and an Overall Suitability Score (OSS) of 2.740 in relation to external environment related procurement selection factors.

Table 6 provides a summary of the suitability level of the CM procurement method for the construction of hotel buildings based on procurement selection factors related to clients' expectations, project requirements and environmental aspects by considering the mean rating (MR) value obtained by each factor.

## CONCLUSIONS AND RECOMMENDATIONS

With the increasing pace of economic development taking place in the country, more and more hotels are being constructed in Sri Lanka. In order to achieve the desired objectives of economic development with a highly efficient Construction Industry, it is necessary to consider different options available for procurement of hotel buildings. This study therefore aimed analysing the suitability of CM as a procurement method for the construction of hotels and at the same time at identifying different types of procurement methods practiced in the construction of hotel buildings and the characteristics that are unique to such methods.

There are two major procurement systems practiced in the Construction Industry, viz., the traditional system and the non-traditional system. A traditional system is separated procurement system and a non-traditional system has integrated, collaborative and management oriented procurement systems coming under it. There were eleven (11) clients' requirement related, nine (9) project related and six (6) external environment related characteristics that were identified as procurement selection factors unique to hotel building construction. The results of the analysed questionnaire survey indicated that CM satisfies all three procurement selection factors with an Overall Suitability Scores (OSS) of 3.109, 3.092 and 2.740 respectively. Therefore, all these three procurement selection factors have proved the CM to be a 'moderately suitable' procurement method for the construction of hotel buildings in Sri Lanka. According to research findings, it is revealed that the current hotel building capacity in the country needs to be increased in a very short time span if the increasing number of tourist arrivals is to be accommodated. This is however considered to be impracticable given the long lead time that hotel development requires and the poor performance of the Construction Industry. Furthermore, it has to be noted that the type of procurement method chosen significantly affects the performance of the Construction Industry. Therefore, it is strongly recommended that those who intend to invest in the hotel industry and those who practice in the Construction Industry select a form of CM that is suitable to their particular project. Finally, it has to be mentioned that although in our country, there are organizations that undertake contracts or provide consultancy services or even function as clients there is not a single organization that undertakes. Therefore, it is recommended that the Construction Industry seriously considers establishing organizations to promote CM in the Construction Industry to make CM popular within the Industry as an effective procurement method suitable for that industry.

## References

- Ashworth, A., & Hogg, K. (2007). *Will's practice and procedure for the quantity surveyor* (12th ed.). Oxford, UK: Blackwell Publishing Ltd.
- Bagnall. (1999). *Tenders and contracts for building* (3rd ed.). United Kingdom: Blackwell science Ltd.
- Bonvin, J. L. (2003, December 15). *Hotel industry news*. Retrieved March 5, 2014, from Hospitality Net: <http://www.hospitalitynet.org/news/4017990.html>
- Central Bank of Sri Lanka. (2013). *Central Bank Annual Report*. Colombo: Central Bank of Sri Lanka.
- Cheung, S., Yiu, K., & Chim, P. (2006). How relational are construction contracts? *Journal of Professional Issues in Engineering Education and Practice*, 132(1), 48–56. doi:10.1061/(ASCE)1052-3928(2006)132:1(48)
- Damayanthi, K. D. (2009). *Potential of adapt management oriented procurement methods for Sri Lanka*. (Unpublished B.Sc. in Quantity Surveying Dissertation). University of Moratuwa: Sri Lanka.
- Deng, S.-M., & Burnett, J. (2000). A study of energy performance of hotel buildings in Hong Kong. *Energy and Buildings*, 31(1), 7-12. doi:10.1016/S0378-7788(98)00067-X

- Dewage, D. (2009, May). Criterion in choosing a procurement method. *SLQS Journal*, 2(1), 18-22.
- Doloi, H. (2013). Empirical analysis of traditional contracting and relationship agreements for procuring partners in construction projects. *Journal of Management in Engineering*, 29(3), 224-235. doi:10.1061/(asce)me.1943-5479.0000141
- Ferry, D., & Brandon, P. (2007). *Cost planning of buildings* (8th ed.). Great Britain: Blackwell Publishing Ltd.
- Gallop, R. (2003). *The coaching era: Stage and mail coach travel in and around bath, Bristol and Somerset - Coachmen and Travellers, Inns and Journeys, Highlights and Hazards*. Fiducia: Fiducia Press.
- Gross, M. (2012, January 5). *Hotel Bel-Air's Modern New Look*. Retrieved March 5, 2014, from Travel and Leisure: <http://www.travelandleisure.com/articles/hotel-bel-airs-modern-new-look>
- Gupta, S. P., & Maurya, M. (2014). Integration of hotel management system by ASP.NET. *International Journal of Scientific Engineering and Research*, 2(3), 178-179. Retrieved from <http://www.academia.edu/6649438>
- Hackett, M., Robinson, I., & Statham, G. (2007). *The Aqua group guide to procurement, tendering and contract administration* (4th ed.). London, United Kingdom: Blackwell Publishing Ltd.
- Harris, F., & McCaffer, R. (2001). *Modern construction management* (5th ed.). United Kingdom: Blackwell science Ltd.
- International Finance Corporation. (2013). *Ensuring Sustainability in Sri Lanka's Growing Hotel Industry*. Sri Lanka: IFC - World Bank Group.
- Joseph, A., & Jayasena, H. (2008). Impediments to the development of design and build procurement system in Sri Lanka. *CIB International Conference on Building Education and Research*, (pp. 286-287). Heritage Kandalama, Sri Lanka.
- Kovacs, A. (2004). *Enhancing procurement practices: Comprehensive approach to acquiring complex facilities and projects*. New York, London: Kluwer Academic Publishers.
- Kumaresan, S. (2010). *Importance of trade unions to construction workers in Sri Lanka*. (Unpublished B.Sc. in Quantity Surveying Dissertation). University of Moratuwa: Sri Lanka.
- Love, P., Skitmore, M., & Earl, G. (1998). Selecting a suitable procurement method for a building project. *Construction Management and Economics*, 16(2), 221-233. doi:10.1080/014461998372501
- Luu, D., Ng, S., & Chen, S. (2003). Parameters governing the selection of procurement system – an empirical survey. *Engineering, Construction and Architectural Management*, 10(3), 209-218. doi:10.1108/09699980310478458
- Marines, A. (2010). *Best procurement system for fast track construction projects*. (Unpublished B.Sc. in Quantity Surveying Dissertation). University of Moratuwa: Sri Lanka.
- Masterman, J. W. (2002). *An Introduction to building procurement* (2nd ed.). New York, London: Spon Press.
- McDermott, P. (1999). Strategic and emergent issues in construction procurement. In P. McDermott, & S. Rowlinson, *Procurement Systems : A Guide to Best Practice in Construction* (pp. 3-26). E & FN Spon.
- Oyegoke, A. (2001). UK and US Construction management contracting procedures and practices: A comparative study. *Engineering construction and architectural management*, 8(5/6), 403-417. doi:10.1108/eb021200
- Oyegoke, A., Dickinson, M., Malik, M., McDermott, P., & Rowlinson, S. (2009). Managing projects in construction project procurement routes: An in-depth critique. *International Journal of Business*, 2(3), 338-354. doi:10.1108/17538370910971018
- Priyadarsini, R., Xuchao, W., & Eang, L. S. (2009). A study on energy performance of hotel buildings in Singapore. *Energy and Buildings*, 40(1), 1319–1324.

- Rameezdeen, R. (2007). Construction procurement selection: Study of trends in Sri Lanka. *Commonwealth Association of Surveying and Land Economy Conference.22*. Colombo: CASLE.
- Rameezdeen, R., & De Silva, S. (2002). Trend of Construction Procurement Systems in Sri Lanka. *Journal of Built Environment Sri Lanka*, 2(2), 2-9.
- Rameezdeen, R., & Ratnasabapathy, S. (2007). A decision support system for the selection of best procurement system in construction. *Built Environment Sri Lanka*, 7(2), 43-53.
- Rashid, R., Taib, I., Ahmad, W., Nasid, M., Ali, W., & Zainordin, Z. (2006). *Effect of procurement systems on the performance of construction projects*. Malaysia: Department of Quantity Surveying, University of Teknologi.
- Ratnasabapathy, S. (2006). *Construction procurement system and its selection*. (Mphil Thesis). University of Moratuwa: Sri Lanka.
- Rowlinson, S. (1999). Definition of procurement systems. In S. Rowlinson, & S. McDermott, *Procurement systems: A guide to best practice in construction* (pp. 27-53). London: E & FN Spon.
- Sri Lanka Tourism Development Authority. (2012). *Annual statistical report*. Colombo, Sri Lanka: Sri Lanka Tourism Development Authority.
- Uher, T., & Davenport, P. (2002). *Fundamentals of building contract management*. Sydney, Australia: University of New South Wales Press Ltd.
- Venter, I., & Cloete, C. (2007). A framework for successful hotel developments. *SAJEMS NS*, 10(2), 223-237.
- Weeraman, N. (1992). *Management contracting as procurement system with special emphasis on the time involve in construction*. (Unpublished B.Sc. in Quantity Surveying Dissertation). University of Moratuwa: Sri Lanka.
- Wijewardana, C., Jayasena, H. S., & Ranadewa, K. (2013). Impact of government policies and regulations when adopting alternative procurement methods. *The Second World Construction Symposium 2013: Socio-Economic Sustainability in Construction* (pp. 253-260). Colombo, Sri Lanka : Department of Building Economics, University of Moratuwa, Sri Lanka.