

SUITABILITY OF PACKAGE DEAL CONTRACTS FOR RESIDENTIAL BUILDING CONSTRUCTION

U.S.C. Bandara, H. Chandanie* and Lalith De Silva

Department of Building Economics, University of Moratuwa, Sri Lanka

ABSTRACT

Residential construction is becoming an increasingly important subdivision of construction industry, necessitating advanced procurement methods in order to accommodate changing requirements. Commonly, residential construction demand is met by the informal sector of construction industry. With the changing environments, a novel trend of package deal contracts is spreading in the context bringing in formalities to the residential construction projects. Package deal is a developed procurement method with unique characteristics. However, in selecting an appropriate procurement method for a specific housing construction project, proper understanding of characteristics of available procurement options are utmost of importance. Therefore, this research aimed to elucidate the suitability of package deal contracts for residential building construction, against time, cost and quality benefits.

Study identified 43 time, cost, and quality related expectations through a comprehensive literature survey, which residential construction clients would expect to be born of package deal contracts. The factors were ranked against industry experts' view and further, tested via a survey with a sample of clients with package deal and informal construction experience. Data were analysed for medians and standard deviations in to rank the factors considering the reliability. Consequently, experts appreciated time and cost benefits of package deal contracts over informal construction. Importantly, projects start quickly with known early commitments under package deal contracts. However, informal construction offers better quality with attractive finished products. Therefore, the package deal is suitable for the clients, who are concerned of time and cost benefits, while informal construction is suitable for the client's with prime concern of quality benefits.

Keywords: Benefits; Informal Construction; Package Deal; Procurement; Residential Construction.

1. INTRODUCTION

From the dawn of history, residential construction has been a necessity of mankind (Allen and Thaloan, 2011). Hence, residential construction has developed as a sub-division of construction industry with its unique characteristics to facilitate human needs of day today activities, leisure activities, studying, playing and relaxing, all in comfort with good level of privacy, while being with an attractive finish (Scutella and Heberel, 2005). However, increasing complexity of houses, use of innovative materials, technologies, and increasing population have created many challenges to the residential building construction industry (Turina, Radujkovic and Pusic, 2007).

Consequently, many residential construction clients face problems with delayed completions, wastage of resources, and low quality outputs, while wasting money without fulfilling the client's requirement due to poor pre-arrangements between the client and the contractor (Sambasivan and Soon, 2006). The procurement system of a project is a key determinant to successful achievement of objectives of any construction project. The choice of procurement system, therefore, severely influences the outcome of a project (Jayasena, 2009). Traditionally, majority of residential buildings were constructed by informal sector of construction industry. Yet, from the recent past a novel trend of package deal contracts for residential building construction is emerged replacing the informal approach to the residential constructions. Differently, according to Meikle (2011) formal approach to construction is more common

* Corresponding Author: E-mail - chandanieqs@yahoo.com

in urban areas, which follow a proper procurement method allowing a pre-agreed construction procedure with fixed time scale. Yet, Ashworth (1996) advises client to choose the required building package and package deal contractor carefully, if deviating from informal approach.

It is further described that, if a client makes a wrong choice, the penalty may be time and cost overruns together with quality issues leading to general dissatisfaction. Therefore, the selection of the most suitable procurement method is critical for both clients and all project participants. Such background urges the need of proper guidance for clients in selecting procurement arrangements, being laymen to the construction industry. Hence, this research addressed the problem of guiding identification of a suitable procurement method for residential building construction in terms of time, cost, and quality benefits, aiming to explain the suitability of package deal contract arrangement for the residential building construction compared to informal approached construction. Since, the objectives were established as; understand the behaviour of residential construction procurement arrangements, identify time, cost and quality related benefits of package deal contracts compared to informal construction, and to develop a guideline to improve awareness of benefits in package deal compared to informal construction in terms of time, cost and quality for residential building construction clients.

Therefore a comprehensive literature survey was conducted in to understand the related research directions and depths of existing knowledge, as presented in the next section.

2. LITERATURE REVIEW

The literature survey of the study revealed many theories illuminating the significance of the research problem and assisted identifying number of benefits, which are expected by the residential construction clients to be arise via a procurement arrangement.

Accordingly, residential building construction is a major sub-division in the construction industry owing 30-35% construction output (Rhodes, 2015). Since, shelter has been recognized as a basic need, evolving human kind has created residential construction needs continuously complex. Consequently, residential construction demand urge for developed materials, and designs, for better time, cost, and quality advantages (Sherwood, 1996). In meeting such demands, proper management of construction process through an appropriate construction procurement arrangement is utmost importance (Ojo, Adeyemi and Fagbenle, 2006). If a client makes a wrong procurement choice, the penalty may be time and cost overruns, together with quality dissatisfaction (Jayasena, 2009).

Hence, the study suggests a proper procurement arrangement should able to offer a higher quality at a lower cost within a minimum period of construction time (Jayasena, 2009). However, in developing countries large portion of construction activity is executed by the informal sector (Hewage, 2009). According to Meikle (2011) informal building construction is narrow in scope and mostly, concerned about small scale buildings like houses, shops and storages. Normally, the informal approach to construction does not involve various professions and parties in the industry neither follow a proper procurement system. However, the informal sector involves with almost all construction projects in rural areas of developing countries and 50% of housing in urban areas (Hewage, 2009). Yet, it may have similarities with one or many of other procurement methods. According to Mitullah and Wachira (2003), informal sector operates unregistered according to the regulations of national or local governments, as a small proportion of the contractor body of a country, and operating with little capital, simple technology, using mostly local resources, and involved with buying and selling in unregulated and competitive markets. Yet, most of the residential clients seek the service of the informal sector of construction industry due to constraints aroused basically, due to unawareness (Silva, 2009). However, there are many negative impacts brought by the informal sector to the residential construction industry in terms of time, cost, and quality (Silva, 2009).

Recently, package deal is another popular procurement option available for residential construction contracts, which indicates the characteristics of a properly organized procurement system. 'In practice, the terms 'package deal' and 'design and build' are interchangeable. But, the package deal is strictly a special type of design and build project, where the employer chooses a suitable building, often from a catalogue' (Ashworth, 1996, p.112). Further, the option allows clients to view similar completed

buildings from elsewhere, that he/she wishes to build. Package deal contractors regularly advertise of the services/products, they wish to offer in terms of building time and prices, rather than designs, and the clients may most probably required to find a site. Yet, the package deal contractors offer many other benefits starting from planning permissions, building regulation approval and many more (Franks, 1998).

Aftermath of the synthesis of the literature, in terms of expected benefits from a procurement option by residential construction clients, 43 factors were identified, as presented in Table 1, which were field tested for scrutiny in the practical context.

Table 1: Expected Benefits from a Procurement Arrangement

Time Benefits	Cost Benefits	Quality Benefits
▪ Less construction time duration (Meikle, 2011) ▪ Handed over at the expected time (Meikle, 2011) ▪ Less time spent on project management (Ojo et al., 2006) ▪ Construction can start quickly (Ashworth, 1996) ▪ Less conflicts between contractor and client's representatives (Ashworth, 1996) ▪ Time taken to finding a builder is less (Franks, 1998) ▪ Single point responsibility (Franks, 1998) ▪ Good communication among construction team (Jayasena, 2009) ▪ Time taken for authority approvals is less (Meikle, 2011) ▪ Simultaneous design and construction (Ashworth, 1996) ▪ Direct contact with the contractor (Ashworth, 1996) ▪ Quick response to the client's needs (Scutella and Heberel, 2005)	▪ Cost of the service is worthy (Franks, 1998) ▪ Applicability irrespective of the location of the site (Franks, 1998) ▪ Model house can see before buying (Jayasena, 2009) ▪ Less cost overruns (Jayasena, 2009) ▪ Satisfaction on finished product in terms of investment (Ashworth, 1996) ▪ Disputes with the contractor is less (Hewage, 2009) ▪ Ease of payments (Jayasena, 2009) ▪ Availability of workmen's compensation and insurance (Silva, 2009) ▪ Cost of procurement is less (Jayasena, 2009) ▪ Low contractor profit levels (Ojo et al., 2006) ▪ Commitment known early (Sherwood, 1996) ▪ No tendering cost (Sambasivan and Soon, 2006) ▪ No fraudulent acts (Rhodes, 2015)	▪ Flexibility for design alterations (Ashworth, 1996) ▪ Properly functioning building services (Franks, 1998) ▪ Minimized wastage (Sambasivan and Soon, 2006) ▪ Assurance of quality on the materials used (Sherwood, 1996) ▪ Adequacy of the builder's technical knowledge (Jayasena, 2009) ▪ Attractiveness of the finished product (Franks, 1998) ▪ Work reviewed by experienced professionals (Jayasena, 2009) ▪ Availability of range of designs with the contractor (Franks, 1998) ▪ Involvement of construction professionals (Sherwood, 1996) ▪ Efficiency in contract management (Ojo et al., 2006) ▪ Durability of fixtures (Turina et al., 2007) ▪ Authorized construction (Scutella and Heberel, 2005) ▪ No structural defects (Allen and Thaloan, 2011) ▪ Final output is well-known from the beginning (Franks, 1998) ▪ Proper documentation (Ashworth, 1996) ▪ Contractor planning the work properly (Franks, 1998) ▪ Availability of required materials and plant (Silva, 2009) ▪ Concerned of safety regulations (Silva, 2009)

Hence, it was required to scientifically investigate the availability of time, cost, and quality related expected benefits with each package deal contracts and informal contracts. The next section presents the method followed in filling the identified knowledge gap scientifically.

3. THE RESEARCH METHOD

Research method section outlines the working plan of the study initiating from the research question development to arriving into scientific conclusions. Hence, the study has established the research questions as;

1. How different available procurement options behave in the context of residential construction?
2. What are the benefits of package deal contracts compared to informal construction?

Therefore, the initial literature review suggested many prepositions, which needed further analysis in order to develop context specific solutions for the research questions.

The research was conducted with a positivist philosophical stance accompanied by a quantitative approach since the methodology allows the end product to be generalised with higher degree of freedom (Remenyi *et al.*, 1998). Further, the research was conducted as a cross-sectional study. Survey is considered to be the most appropriate strategy for this research study since a survey is a systematic way of primary data collection based on a sample, and assess information about the population. Therefore, it is not a method considering a specific case in depth, yet, captures main characteristics of a population. Moreover, survey is a quick and efficient strategy in collecting data comparative to other strategies such as; action research, grounded theory, experiments, ethnography and archival research (Tan, 2002). Hence, data were collected via two (02) questionnaires devised based on the literature findings separately, for experts and clients following a mono method (Saunders, Lewis and Thornhill, 2009). The questionnaires requested for demographic data of the respondents in order to evaluate the capacity of the respondents in contributing to knowledge creation via the study. Further, core data were collected from the industry experts based on their opinions on the importance of the benefits to be evaluated based on a 1-5 Likert scale, where; 1 represents strongly important, 2 - important, 3 - averagely important, 4 - less important, and 5 represents very less important. Similarly, the questionnaire designed for the residential building clients were inquired for satisfaction with their construction experience in terms of the suggested benefits, which were ranked using a similar scale.

Hence, two (02) different samples were used as sources in data collection process within the study, where the sources being industry experts and residential construction clients as mentioned above. The sample derived for the survey is representative portion of the population and the sample was selected as an unbiased and sufficient in size. The non-purposive quota sampling was used to select the samples. Table 2 presented the cross-section of the survey samples.

Table 2: Cross-Sectional View of the Survey Sample

Survey description	Quota(s)	Response proportion	Response rate
Pilot survey with industry experts	Architects		20%
	Engineers		40%
	Quantity Surveyors		40%
Context survey with residential building construction clients	Clients with package deal experience		40%
	Clients with informal construction experience		53%

Moreover, as per Stutely (2003) suggestion, a minimum number of 30 from each quota within overall sample as a rule of thumb for statistical analyses has been followed in this study. Hence, the sample for the pilot survey with industry experts comprised 30 units and the residential client sample comprised of 60 units. The overall response rate was 46.67%.

Data collected were analysed for median values since median represents the middle value of a data set (Glosser, 2014). Further to obtain better ranking process 3rd and 1st quartiles of the sample were calculated and standard deviations were calculated to check the consistency of data. Less standard deviation values indicate that the data have spread closely showing high consistency.

Therefore, the data analysis of the pilot survey allowed ranking time, cost and quality benefits in terms of importance. The data collected from the context survey allowed ranking the factors according to the availability with each of the procurement arrangements. Each benefit ranked in time, cost, and quality categories arose from expert survey analysis were weighted based on the rankings obtained. A total score for each of the procurement arrangement in front of top five (05) time, cost and quality benefits were calculated to compare the percentage achievement against the maximum score achievable to derive the final decisions on comparative performance between the considered two (02) procurement arrangements.

4. DATA ANALYSIS, FINDINGS AND DISCUSSIONS

From the 43 benefits identified at the literature review, twelve (12) were time related benefits, 13 were cost related benefits and 18 were quality related benefits. The factors were subjected to the initial expert survey and the data analysis allowed to rank the time, cost and quality benefits in terms of importance. Further, the context survey uncovered the presence of such benefits with each of the procurement arrangement concerned by this study.

According to the demographic data analysis, 100% of the selected industry experts sample was experienced more than five (05) years in the residential building construction industry. Specially, 90% of the sample is charter qualified. On the other hand, 95% of the clients selected for data collection were having recent experience [not over five (05) years from completion] in housing construction and occupied at the same buildings at the moment. Therefore, the samples showed calibre in contributing comprehensive data into the study.

This paper presents the analysis upon the top five (05) time, cost and quality benefits as per to views of experts and relevant clientele views of availability with each procurement arrangement considering the length limits of the paper submission.

4.1. ANALYSIS OF TIME RELATED BENEFITS

Time related benefits in the order of importance and availability according to each survey strata are present in the Table 4.1. Consequently, the two (02) benefits, less time spent on project management and handed over at the expected time, out of the top five (05) 'time' related benefits as identified by the experts, are highly available with the package deal contracts, yet, which are not highly available with the informal arrangements. In accordance with literature review, package deal contracts being a sub division of design and build procurement arrangement, designs and costing are already finished, when a client chooses his appropriate design (Ashworth, 1996).

However, less construction time duration is the most important 'time' related benefit, as per experts, yet, which is not offered highly at any of the two (02) procurement arrangements. However, the two (02) procurements arrangements commonly offer the benefits; construction can start quickly and less conflicts between contractor and client's representatives to the clients, where the first mentioned benefit is the only 'time' related benefit offered by the informal contract arrangements in addition to the benefit, quick response to the client's needs, out of the major time related benefits. In addition, package deal contracts offer clients, the benefit, time taken to finding a builder is less, whereas informal contracts offer the benefits; direct contact with the contractor and good communication among construction team.

Moreover, considering the weighted scores, package deal is capable of offering 54.67% of the total achievable score in offering time related benefits considering the top five (05) expected benefits whereas, informal contracts offer only 41.33%.

Table 3: Importance and Availability of Time Related Benefits

Score	Industry experts' view	Score	Package deal clients' view	Score	Informal clients' view
12	Less construction time duration	10	Construction can start quickly	8	<i>Quick response to the client's needs</i>
10	Handed over at the expected time (10)	8	Less time spent on project management	2	<i>Direct contact with the contractor</i>
10	Construction can start quickly	7	Time taken to finding a builder is less	5	<i>Good communication among construction team</i>
8	Less time spent on project management	10	Handed over in the expected time period	10	Construction can start quickly
8	<i>Quick response to the client's needs</i>	6	Less conflicts between contractor and client's representatives	6	Less conflicts between contractor and client's representatives
7	Time taken to finding a builder is less				
6	Less conflicts between contractor and client's representatives				
5	<i>Good communication among construction team</i>				
4	Single point responsibility				
2	Time taken for authority approvals is less				
2	<i>Direct contact with the contractor</i>				
1	Simultaneous design and construction				
75	Total Score	41	(54.67%)	31	(41.33%)

Hence, the analysis suggests higher capability in offering time related benefits to be with package deal procurements over informal construction arrangements.

4.2. ANALYSIS OF COST RELATED BENEFITS

Top five (05) 'cost' related benefits according to each survey strata are present in Table 4. Thus, none of the most important cost related benefits are present with the informal approach to residential construction. However, the 2nd important benefit; commitment known early is highly available with the package deal contracts. This is suggested as a top benefit in package deal construction as per literature as well. Clients favour to know their commitment before starting the construction. They normally check, whether the budget of the construction is suitable with his budgetary allocation (Sherwood, 1996).

However, the four (04) top benefits; cost of the service is worthy, satisfaction on finished product in terms of investment, less cost overruns, and model house can see before buying, are not highly offered by any of the two (02) prominent procurement arrangements for residential construction. Literature also suggests "client's satisfaction" as one of the most important concerns in the residential building construction (Jayasena, 2009). However, the two (02) procurements arrangements commonly offer the benefits; no tendering cost, no fraudulent acts, and applicability irrespective of the location of the site, to the clients. In addition, the package deal contracts offer the clients, the benefit, ease of payments, while informal construction arrangement offers clients the benefits of; disputes with the contractor is less and cost of procurement process is less.

Moreover, considering the weighted scores, package deal is capable of offering 31.58% of the total achievable score in offering cost related benefits considering the top five (05) factors, whereas informal contracts offer 24.21% of the top benefits expected. Hence, the analysis suggests higher capability in

offering cost related benefits to be with package deal procurements over informal construction arrangements.

Table 4: Importance and Availability of Cost Related Benefits

Score	Industry experts' view	Score	Package deal clients' view	Score	Informal clients' view
13	Cost of the service is worthy	2	<i>No tendering cost</i>	2	<i>No tendering cost</i>
13	Commitment known early	13	Commitment known early	1	<i>Applicability irrespective of the location of the site</i>
13	Satisfaction on finished product in terms of investment	8	<i>No fraudulent acts</i>	8	<i>No fraudulent acts</i>
10	Less cost overruns	1	<i>Applicability irrespective of the location of the site</i>	7	<i>Disputes with the contractor is less</i>
10	Model house can see before buying	6	Ease of payments	5	<i>Cost of procurement process is less</i>
8	No fraudulent acts				
7	<i>Disputes with the contractor is less</i>				
6	Ease of payments				
5	<i>Cost of procurement is less</i>				
4	Low contractor profit levels				
3	Availability of workmen's compensation and insurance				
2	No tendering cost				
1	<i>Applicability irrespective of the location of the site</i>				
95	Total Score	30	(31.58%)	23	(24.21%)

However, the both the procurement arrangements offers lesser cost related benefits compared to time related benefits, whereas the metaphor occurs with a considerable margins.

4.3. ANALYSIS OF QUALITY RELATED BENEFITS

Top five (05) 'quality' related benefits according to each survey strata are present in Table 5. Therefore, out of the five (05) most important quality related benefits, adequacy of the builder's technical knowledge is present with both the approaches. Informal construction offer the most important quality benefit, attractiveness of the finished product. It is important, as finished house should be attractive for people. Clients always try to construct a unique house, which is exceptional and attractive (Franks, 1998).

However, the benefits; properly functioning building services, assurance of quality on the materials used, and minimized wastage are not highly offered by any of the arrangements. Yet, both the arrangements offer the benefits; authorized construction and no structural defects to residential construction clients. In addition, package deal contracts offer clients, the benefits of; final output is well-known from the beginning and availability of required materials and plant, whereas informal arrangements offer the benefit of flexibility for design alterations. Hence, according to Jayasena (2009), if client did not find the correct contractor, finally he will be dissatisfied with the construction. Selecting a suitable package deal contractor is more important in package deal construction.

Therefore, considering the weighted scores, package deal is only capable of offering 21.02% of the total achievable score in offering quality related benefits considering the top five (05) factors, whereas informal contracts offer 31.79%. Hence, the analysis suggests higher capability in offering quality related benefits to be with informal construction arrangements over package deal procurements.

Table 5: Importance and Availability of Quality Related Benefits

Score	Industry experts' view	Score	Package deal clients' view	Score	Informal clients' view
18	<i>Attractiveness of the finished product</i>	5	Authorized construction	14	<i>Flexibility for design alterations</i>
17	Adequacy of the builder's technical knowledge	6	Final output is well-known from the beginning	18	<i>Attractiveness of the finished product</i>
17	Properly functioning building services	8	<i>No structural defects</i>	5	Authorized construction
17	Assurance of quality on the materials used	17	Adequacy of the builder's technical knowledge	17	Adequacy of the builder's technical knowledge
14	Minimized wastage	5	Availability of required materials and plant	8	<i>No structural defects</i>
14	<i>Flexibility for design alterations</i>				
14	Durability of fixtures				
14	Work reviewed by experienced professionals				
14	Availability of range of designs with the contractor				
14	Involvement of construction professionals				
8	No structural defects				
7	Efficiency in contract management				
6	Final output is well-known from the beginning				
5	Availability of required materials and plant				
5	Proper documentation				
5	Contractor planning the work properly				
5	Authorized construction				
1	Concerned of safety regulations				
195	Total Score	41	(21.02%)	62	(31.79%)

Considering all facts discussed and identified, residential construction clients should consider their time, cost, and quality benefits requirements individually. When selecting a procurement system, requirements of an individual client should be matched with the characteristics of each construction method. Therefore, a guideline was developed to demonstrate the capacity of offering important time, cost and quality related benefits by the package deal and informal construction procurement arrangements. The developed guideline for residential building construction clients for procurement selection is presented as Table 6.

Hence, Table 6 illustrates the most important time, cost, and quality benefits available with package deal and informal construction, whereas the top expected benefits, as per experts are given in bold letters and common benefits are italicized. The factors are presented in the order of availability and font sizes are proportionate with the importance given by the industry experts. Hence, by referring the guideline, residential clients can decide the most suitable contract type for their construction according to their requirements.

Table 6: Guideline for Residential Building Construction Clients for Procurement Selection

	Package deal	Informal construction
Time	Construction can start quickly Less time spent on project management Time taken to finding a builder is less Handed over in the expected time period Less conflicts between contractor and client's representatives	Quick response to the client's needs Direct contact with the contractor Good communication among construction team Construction can start quickly Less conflicts between contractor and client's representatives
Cost	No tendering cost Commitment known early No fraudulent acts Applicability irrespective of the location of the site Ease of payments	No tendering cost Applicability irrespective of the location of the site No fraudulent acts Disputes with the contractor is less Cost of procurement process is less
Quality	Authorized construction Final output is well-known from the beginning No structural defects Adequacy of the builder's technical knowledge Availability of required materials and plant	Flexibility for design alterations Attractiveness of the finished product Authorized construction Adequacy of the builder's technical knowledge No structural defects

Therefore, if a client is interested in more of time and cost benefits over quality, the suitable procurement arrangement is package deal. Although informal construction has more quality benefits, package deal construction is a trustworthy contract type.

5. SUMMARY

The study revealed the availability of more of highly important time, and cost benefits in package deal construction over informal construction, whereas informal construction offers more of highly important quality related benefits. Further, package deal offers least of quality benefits compared to its time and cost benefits, yet, informal contract offer least cost related benefits compared to its time and quality related benefits.

Hence, the study is important, as it sheds the light on the strength of package deal construction in the context of Sri Lankan construction industry towards better residential construction procuring. It will be helpful for residential construction clients to select the most suitable procurement types, as well as to understand the novel systems of package deal construction. The clients, therefore, can select a suitable procurement system by comparing the benefits from each construction method. Further, the study will assist improved awareness upon key theories, characteristics and benefits of package deal construction and informal construction of the interested people in residential construction industry. In addition, the study lays the foundation for construction companies to direct their business towards package deal construction and to promote their business in residential construction sector. However, it is important for the package deal contractors to increase their attention upon the expected quality aspects of the building output.

6. REFERENCES

- Allen, E. and Thaloan, R., 2011. *Fundamentals of residential construction*. 3rd ed. New Jersey: John Wiley & Sons.
- Ashworth, A., 1996. *Contractual procedures in the construction industry*. 3rd ed. England: Wesley Longman Ltd.
- Franks, J., 1998. *Building procurement systems*. 3rd ed. England: Longman.
- Glosser, G., 2014. *Math Goodies* [online]. Colchester, Math goodies. Available from: <http://www.mathgoodies.com/contact/contact.asp>
- Hewage, M.S., 2009. *Informal construction sector and its effect on the construction industry of Sri Lanka*. (Unpublished dissertation). University of Moratuwa.

- Jayasena, H.A.E.C., 2009. *Factors affecting construction procurement selection private sector Vs public sector* (Unpublished dissertation). University of Moratuwa.
- Meikle, J., 2011. *Informal construction* [online]. Washington, International Comparison Program. Retrieved from http://siteresources.worldbank.org/ICPINT/Resources/270056-1255977007108/6483550-1257349667891/01.02_ICP-TAG04_ConstructionNote.pdf
- Mitullah, W.V., and Wachira, I.N., 2003. *Informal labour in the construction industry in kenya: a case study of Nairobi* [Online]. Geneva, International Labour Office. Retrieved from http://www.ilo.org/wcmsp5/groups/public/@ed_emp/@emp_policy/@invest/documents/publication/wcms_asist_8175.pdf
- Ojo, S.O., Adeyemi, A.Y., and Fagbenle, O.I., 2006. The performance of traditional contract procurement on housing projects in Nigeria. *Civil Engineering Dimension*, 81(2), 81-86.
- Remenyi, D., Williams, B., Money, A., and Swartz, E., 1998. *Research in business and management*. London: Sage.
- Rhodes, C., 2015. *Construction industry: Statistics and policy*. UK: The House of Commons Library.
- Sambasivan, M., and Soon, Y.W., 2006. Causes and effects of delay in Malaysian construction industry. *International Journal of Project Management*, 21(25), 517-526.
- Saunders, M., Lewis, P., and Thornhill, A., 2009. *Research methods for business students*. 5th ed. Italy: Rotolito Lombarda.
- Scutella, R.M., and Heberel, D., 2005. *How to plan contract and build your own home*. 4th ed. USA: McGraw hill companies.
- Sherwood, R.F., 1996. *Homes today and tomorrow*. USA: McGraw hill.
- Silva, M.L.D., 2009. *Informal construction sector and its effect on the construction industry of Sri Lanka*. 65th Annual Session of the Sri Lanka Association for the Advancement of Science. Colombo 7th-11th December 2009, University of Colombo: The Sri Lanka Association for the Advancement of Science .
- Stutely, R., 2003. *Numbers guide*. 5th ed. Princeton: Bloomberg Press.
- Tan, W., 2002. *Practical research method*. Singapore: Person Education Asia (Pvt) Ltd.
- Turina, N., Radujkovic, M., and Pusic, D.C., (2007). *Design and build in comparison with the traditional procurement method and the possibility of its application in the Croatian construction industry* [Online]. Croatia: publication of Rijeka Faculty of civil engineering. Retrieved from <https://bib.irb.hr/datoteka/TurinaRadujkovicCar-Pusic.pdf>