

IMPACT OF USING MINIMUM PRELIMINARY ITEMS FOR BUILDING WORKS IN SRI LANKAN CONSTRUCTION INDUSTRY

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ABSTRACT

Preliminary items section is one of the critical sections in a bill of quantities, though they are not direct parts of the permanent work. There are some preliminary items which are not included in the preliminary bill. In Sri Lankan construction industry employers are willing to pay for the preliminary items which mostly impact to the work items while ignoring the other items. Further, corporate consultants do not instigate employers to include preliminary items. There is a research gap in identifying the impact of minimum usage of preliminary items for building works. Hence, this research was aimed at investigating the impact of using non-detailed preliminary bill for building projects in Sri Lanka. Initially, a literature synthesis was carried out to identify the preliminary items commonly included in the preliminary bill for the building projects in locally and in global context. Furthermore, factors to be considered when pricing the preliminary bill and the importance of preliminary items were identified. Subsequently, the relationship between preliminary amount and the total contract amount was recognized. Data was collected through the semi structured expert interviews and a work study. Thirty building projects were selected for the work study. The collected data was analysed using content analysis with the use of Nvivo 11 software. The analysis revealed that there are negative impacts due to minimum usage of preliminary items in the preliminary bill such as; deterioration of standard and quality of the construction industry, lack of investments toward construction industry, impact to the employer and subsidence of involvement of labours in the construction industry name to few. Furthermore, the paper discussed the factors to be considered when preparing the preliminary bill. Among those factors size of the project is a critical factor when preparing the preliminary bill. Moreover, findings disclosed that average preliminary percentage of building projects is 4.98% and the percentage is increasing with the accretion of the contract amount in Sri Lankan construction industry.

Keywords: Building Projects; CIDA Standard Bill; Construction Industry; Preliminary Bill.

1. INTRODUCTION

The most difficult items to price in a Bill of Quantity (BOQ) are often termed as Preliminaries Bill or Bill No 1. This section is not confined to any particular work section, and the contractor is thereby given the opportunity to price those (Jimoh & Adama, 2011). According to Perera et al. (2009), insufficient estimation is a risk mainly because price escalation had not been considered for recurrent preliminary items. Habitually companies will use typical preliminaries as the basis of preparing the preliminary bill to reduce the drafting time and force the quantity surveyor to continually question the need of a particular item (Lee et al., 2014). As mentioned by Inyang-Udoh (2013), the percentage varies from 4.5% for a specialist organization tendering for a large new project to 9.5% for a new housing project. Many disputes concerning the valuation of variation and the final account could be resolved more easily if an accurate and consistent set of comprehensive preliminaries is available (Ostrowski, 2013).

Thus, this paper aims at reviewing the impact of using minimum preliminary items for building works in Sri Lankan construction industry. The first few sections of the paper present the comprehensive literature review findings while the last sections present the findings of semi structured interviews conducted with construction industry professionals and the work study.

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2. LITERATURE REVIEW

2.1. PRELIMINARIES

The preliminaries section in a BOQ is generally priced by the tenderers independently from trade or elemental bills (The Entrusty Group, 2009). The bill of quantities rate cannot reasonably cover all costs required for the implementation of a construction project due to the general nature of the items; these items are covered under the concept of preliminaries (Odusami & Oni, 2007). Preliminaries are vital for reaching project objectives (Jimoh & Adama, 2011). “Preliminaries are the cost of administering a project and providing plant, site staff, facilities site-based services, and other items not included in the rates for measured works” (RICS, 2012). According to Ghani (2006) insurance, workmen’s compensation, performance bond, setting out, Construction Industry Development Board (payment for levy), as-built drawing, work programmes, hoarding and fencing, Client/Employer’s requirements such as vehicles for the site office and equipment and facilities are mandatory preliminary items.

2.2. PRICING PRELIMINARIES

Estimators and those who are involving in pricing of BOQs should properly educated and exposed in the pricing of preliminaries with a view to pricing all the relevant components and items in the preliminaries bills (Inyang-Udoh, 2013). According to Ghani (2006), all preliminary items are not required to be priced, some items can remain without pricing. It is seen by the majority of clients as being fair and likely to produce the lowest possible commercially viable tender price in the prevailing market conditions (Harris & Mc Caffer, 1989). It is a common practice for appointed technical professionals advising their clients to assign the responsibility for providing the preliminaries components to the Contractors (Singh, 2008).

Preliminaries are crucial and constitute part of the contractor’s profit margin consideration (Abas et al., 2017). Further to them, under limited time frame, some contractors refer back to a previously priced set of preliminaries of similar project and then extract the price for use in the current project for tender. The preliminaries section needs utmost care in pricing as it is the section which covers the cost of operating the site under specified conditions and in accordance with the contractor’s plan for the progress of the work and for storage and movement of materials, plants and site establishment in contractor’s estimate (Ross et al., 1991). Willis (2005) identified that, when pricing preliminaries, there should be a clear understanding to determine the extent of this allowance when tendering preliminaries and general items of its scope and broad definition, as it can easily contribute to huge losses if not correctly understood or determined at the tender stage. Brook (2008) identified preliminaries are usually unique to a particular job and should be calculated whenever there is deviation from an identical scheme and it is a problem which need to be recognized when advising clients. Most of the contractors priced the bill of preliminaries rather than insert lump sum or percentage of the cost of the project (Inyang-Udoh, 2013) even though all the preliminaries items listed in the tender are deemed to be priced by the contractor in accordance with the principle of standard method of measurement of building works (Morledge & Kings, 2006). According to Morledge and Kings (2006), the way contractor pricing the preliminaries imitate the contractor’s tendering strategy.

2.3. PRICING PRELIMINARIES

The items in the preliminaries section of the bills of quantities are usually the most difficult and arbitrary of all to price (Bello & Adetayo, 2013). Pricing of the preliminaries section will usually be one of the last operations before adjudication of the tender price, and will require that decisions relating to working methods, major plant, gang strengths, subcontractors, and temporary work (Ghani, 2006). It is important to discover the extent to which preliminary items are priced (Ashworth, 2010). Haruna et al. (n.d.), identified methods of pricing project’s preliminaries as contractors used percentage ratio, contractors employed fixed charge (lump sum) and estimation methods, contract sum as amount of preliminary cost of a project. According to Inyang-Udoh (2013) percentage approach can be disposed to risk for inexperience contractors who lack an understanding of the cost involved. The lump sum pricing in preliminaries is awkward to estimate because some of the items under preliminaries are time related and others are work related. Therefore, if they are not separately priced, consultant could not be to carry out realistic estimation of preliminaries (Jagboro, 1989). Provisional sums inserted in the preliminaries bill cause a great deal of confusion (Brook, 2008). Preliminaries

are part of overhead, other than contractors head office overhead, therefore mark-up included in the rates of measured works in BOQ shall not include expenses in relation to items include under preliminary items (Institute for Construction Training and development, 2009). According to the methods identified by Trevor Sadd Associates (2005), in most cases the analysis proposed in methods one to three can be simply achieved by setting pricing out in added columns on the check list while using percentage approach requires a significant amount of judgement.

2.4. COST OF PRELIMINARIES

The cost of preliminaries varies between contractors depending on the complexity of projects (Abas et al., 2017). There is an impact on the resources required for the project, they affect the pricing of preliminaries including site overheads and general overheads (Akintoye, 2000). Cost of preliminaries is between five and fifteen percentage of the overall cost of contract value in respect of building construction costs (Jimoh & Adama, 2011). According to the study of Abas et al. (2017) the preliminaries of civil infrastructure works are between 3.26% and 6.38% as compared to that of building works between 3.60% and 7.94%. Consequently, the preliminaries of civil infrastructure work are lower up to 16.5% as compared to the building work. Further to the author typical preliminaries are higher than 3% but not exceeding 10% of the tender sum for both types of construction works. The cost of 'Preliminaries' has been detected to be between 5%-15% of the overall cost of 'Contract' value in respect of building construction costs while for infrastructure the percentage could be between 2%-5% (Singh, 2008). Brook (2008) identified range of preliminaries suitable for market sectors as shown in Table 1.

Table 1: Preliminary Percentage by Sector

Sector	Preliminaries cost out of net build cost
PFI Hospitals	17-19%
BsF Schools	14-17%
MOD prime contracts	16-22%
Large warehouse	8-11%

Source: (Brook, 2008)

2.5. BENEFITS OF HAVING A GUIDELINES FOR PREPARING PRELIMINARY BILL

As a result of the subjective nature of preliminaries pricing, its pattern of pricing varies considerably between different contractors (Peurifoy & Oberlender, 2002). Ghani (2006) stated that if all the tenderers' priced BOQ for any project could be observed, this preliminaries section would produce the highest variation in prices with each estimator having his own idea as to the scale and extent of the costs involved. Haruna et al. (n.d) mentioned that if the actual project's preliminaries are below the estimation stated in Bill of Quantities, then it will become the contractor's profit and if the actual project's preliminaries are higher than the estimation, then it will become the contractor's loss. There is a guideline which was published by CIDA for preparing preliminary bill to the employer or consultant in Sri Lanka. If there is a guideline for preparing preliminary bill it is easy to identify the items need to be include in the preliminary. According to Normah, (as cited in Haruna et al., n.d) clients has to face many challenges during the tender evaluation especially on cost comparison for preliminaries of each tenderer. Further to the author distinguishing and understanding items needed to be priced for a given project, contractor to effectively calculate and evaluate the preliminaries of bill of quantities of building projects and achieve effective price for the project preliminaries.

3. RESEARCH METHOD

A comprehensive literature survey was carried out to identify the research gap and theoretical condition on impact of not including relevant preliminary items in preliminary bill according to the CIDA standard bill of preparing preliminary bill referring journals, books, articles, conference proceedings and reports. Mixed method approach was adopted in this study to full fill the research objectives. Preliminary interviews with two experts with more than 10 years experiences in consultant quantity surveying were conducted to validate the findings in literature survey. Further seven (07) semi structured interviews with quantity surveying experts who have involved in preparing preliminary bills were conducted to identify the preliminary items which are

not included in preliminary bill and reasons for not including them. Furthermore, a work study was conducted in 40 projects to identify the commonly used preliminary items in the building construction projects in Sri Lanka and contribution of preliminary bill to the total cost of the building. The qualitative data gathered were analysed using content analysis technique and the quantitative data gathered were analysed through Microsoft Excel 2016. Mean value and standard deviation were calculated for finding the preliminary percentage for the government and private projects with contract sum over 300 million and contract sum below 300 million. Further percentage of preliminary items included in preliminary bill comparing to the CIDA standard bill was analysed using Microsoft Excel 2016.

4. RESEARCH FINDINGS

4.1. REASONS FOR MINIMUM USE OF PRELIMINARY ITEMS

The current practice of Sri Lankan construction industry is providing a minimum enumerated preliminary bill for building projects. Most of the times consultants advice to include a preliminary bill with the lesser number of preliminary items as an individual client does not like to accept a huge preliminary bill as it is an indirect cost. Clients' idea is that preliminaries are an unnecessary and extra cost for them. They questioned why they should pay for those items since those are indirect costs. Further contractors price the preliminary bill, and the main bill without considering the preliminary bill. All the costs relating to the preliminary items are included in the preliminary bill. This practice is mainly identified with the lower level contractors. They do not itemise the preliminary bill and do not break down the rates. Therefore, whether a detailed preliminary bill included or not, the rates of main trade works are equal. Therefore, consultants are alluded to use minimum preliminary itemised bill.

4.2. INCLUSION OF PRELIMINARY ITEMS

In Sri Lanka CIDA standard bill can be considered as the base of a preliminary bill. The inclusion of preliminary items mentioned in CIDA bill was compared within 40 projects selected. There are forty preliminary items in CIDA standard preliminary bill as depicted in Table 2.

Table 2: Preliminary Items Included in CIDA Standard Preliminary Bill

No	Description
Insurance and securities	
1	Provisional sum for providing a Performance Security
2	Provisional sum for providing an Advance Payment Security
3	Provisional sum for insurance of Works, Machinery & Equipment, Plant, Materials, third party persons & property and Employer's personnel & property at site as per Contract.
4	Provisional sum for insurance against accidents and injury to Contractor's personnel as per the Contract.
Engineer's Facilities	
5	Allow lump sum for constructing maintaining dismantling and removal on completion of the works, a temporary building for Engineer's office in conformity with the plans provided for Engineer's requirements, including necessary furniture and fittings, furnishing, sanitary facilities and other facilities
6	Allow lump sum for providing telephone, internet, e-mail and facsimile facilities, electricity and water services for the Engineer's site office for their use in connection with the Works.
7	Allow lump sum for maintenance, rental, consumption charges for telephone, facsimile facilities, electricity and water services Engineer's site office for their use in connection with the Works.
Contractor's Facilities	
8	Allow lump sum for constructing, maintaining, dismantling and removal on completion of the Works, a temporary site office with facilities.
9	Allow lump sum for constructing, maintaining, dismantling and removal on completion of the Works, buildings to be used as workshops and stores for perishable materials.
10	Allow lump sum for constructing, maintaining. Dismantling and removal of completion of Works temporary buildings in accordance with the plans prepared by the Contractor and occurred by the Engineer to accommodate the following

No	Description
	<ul style="list-style-type: none"> ▪ Workers' rest rooms ▪ Toilets and wash areas ▪ Sick/First Aid rooms ▪ Accommodation for contractor staff and workmen including sanitary facilities on site is applicable. ▪ Facilities to workmen shall conform to the latest public health and industrial regulations.
11	Allow lumps for providing accommodation including sanitary facilities and transport for contractor's staff and workmen offsite
12	Allow lump sum for providing telephone and facsimile facilities, electricity and water services for the Contractor's site office for their use in connection with the Works
13	Allow lump sum for maintenance, rental, consumption charges etc. for telephone and facsimile facilities, electricity and water services for the Contractor's site office for their use in connection with the Works
14	Allow lump sum for Contractor's transport facilities at site
	Construction Management and Supervision
15	Allow lump sum for employing suitably qualified and experienced technical personnel on full time basis for construction management services at the site
16	Allow lump sum for employing technical supervisory staff not listed under item 16 above on full time basis. Listed below are the particulars of staff to be engaged.
	Setting Out
17	Allow lump sum for employing a licenced land surveyor to define the building site work etc.
18	Allow lump sum for setting out of works in accordance with drawings and other written information given by the engineer
	Quality standards and Progress
19	Allow lump sum for provision of progress reports including photographic records and other schedules included in the ICTAD publication. Guidelines for Effective Construction Management.(ICTAD/CM/), relevant to contract administration as directed by the Engineer.
20	Allow lump sum for all cost in connection with preparing samples for testing, making arrangements for testing of Materials, Goods etc., as stipulated in the specification, obtaining test reports and submitting the same to the Engineer
21	Allow lump sum for provision of drawings, bar schedules etc. for Engineer's approval
22	Allow lump sum for provision of two sets of (hard copies and soft copies) as-built drawing of all services, for engineer's approval
	Health safety and Environment
23	Allow lump sum for engaging the service of an adequately trained person to attend to first aid medical duties including provision of a first-aid box and regular supply of medicine, linen etc.
24	Allow lump sum for providing and maintaining a first aid box supply of medicine, linen etc.
25	<p>a. Employing workmen to clean and maintain all areas to be in good hygienic conditions including toilets, wash areas, kitchen etc.</p> <p>b. Supplying adequate drinking water, water for washing purposes, soap, detergent, etc. throughout the period of construction</p>
26	Allow lump sum for providing all necessary safety measures to workmen at site conforming to the latest industrial safety regulations and as directed by the Engineer
27	Allow lump sum for making adequate provisions against air and noise pollution of surrounding areas. Hoarding and dust screens shall be provided to control dust escaping to surrounding areas
28	Allow lump sum for maintaining the site in a clean orderly in manner at all times and during the entire contract period
29	Allow lump sum for demobilization, removal of all rubbish and debris and clearing up site on completion, leading all in good order and handing over
	Security and Protection
30	Allow lump sum for employing an adequate number of security personnel and security systems on full time basis throughout the period of construction, and provide for necessary security lighting and a warning system.
31	Allow lump sum for providing and maintaining necessary fencing, boarding and gates for safeguarding the works, materials and plant, as directed by the Engineer

No	Description
32	Allow lump sum for protection of public and private service at the site. The Contractor shall take due care to protect, water supply and drainage systems, telephone and overhead electrical cables etc. whose locations are identified and made available to bidder at the time of bidding, unless earmarked for demolition, during the execution of the works.
Services and Facilities	
33	Allow lump sum for supply of water for the Works and paying all charges and other expenses in connection with the supply from water mains or any other alternative method of water supply, storage and reticulation
34	Allow lump sum for supplying temporary electricity for the Works including connection, distribution system for the Works, internal arrangements and all payments to the authorities for consumption
35	Allow lump sum for providing hoisting equipment and other plant for the use of the works on site(dry hire)
36	Allow lump sum for providing small machinery and equipment for the use of the Works at site
37	Allow lump sum for erecting and maintaining scaffolding and/ or self-climbing platforms. Such scaffolding etc. shall be removed on completion and all Works disturbed shall be made good
Miscellaneous	
38	Allow lump sum for stamp duty in accordance with the prevailing regulations of the Government.
39	Allow lump sum for providing and maintaining a name board to the specifications and / or as directed by the Engineer.
40	Allow lump sum for excavation for trial pits/ trial trenches as specified or as directed by Engineer as for locating services etc. and reinstating the ground and making good disturbed work to the satisfaction of the Engineer.

The frequency of usage of preliminary items were calculated for the selected 40 building projects comparing to CIDA standard bill. After analysing the information obtained from work study, it can be identified the items that are mostly included when preparing the preliminary bill and the items which are minimally included in preliminary bill. The percentage of each preliminary item was ranked with reference to CIDA standard bill as in Figure 1.

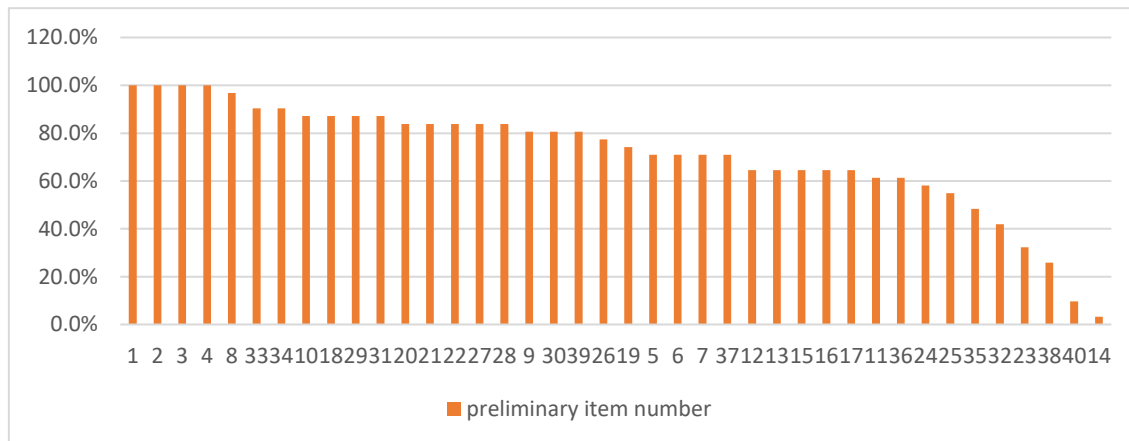


Figure 1: Ranking of Preliminary Items

When examining the percentage of each preliminary item, items under the insurance and securities had the highest percentage. All the building projects selected included items for insurance and securities. It revealed that insurance and securities is the most important item in preparing the preliminary bill. Second highest percentage taken for the constructing of contractors site office. 96.8% of the selected projects included this item in their preliminary bill. The next most included item is supply of water and temporary electricity for the works. These are essential services that should be provided. Therefore, it is clarified in this study that 90.3% of projects included these items. 87.1% of the selected projects had included preliminary items for accommodation and restrooms toilet facilities. Further same percentage was included for setting out of works, clearing up site on completion and providing and maintaining necessary fencing and boarding for the safeguarding the works. It was revealed that these items are basic needs that should be included in preliminary bill. The next highest percentage of included the preliminary items are quality standard, progress and

preliminary items regarding protecting the environment. It is disclosed that significance proportion for quality standards and protecting environment were provided in the preliminary bill. 80.6% selected projects included items for constructing stores, workshops and providing security personnel and security systems. Further same percentage was included for providing and maintaining a name board. 77.4% of selected projects had included items for providing safety measures for the workmen at site. 71.0% of selected projects had included engineer's facilities while 64.5% included for contractor's facilities. But other facilities such as telephone, facsimile facilities workmen accommodation have included in their trade rates. Only 61.3% of the selected projects had included provisions for small plant and machineries. The preliminary item for providing a first aid box included only 58.1% of the selected project. Providing trained person for health and first aid facilities is not considered here. Because it is also covered under this item. The percentage will be increase if those two items considered as one item. Almost half of the selected project included the item for clean and maintain all areas to be in good hygienic conditions including toilets, wash areas, kitchen.

Further only 48.4% was included an item for providing hoisting equipment and other plant. It revealed that hoisting equipment are used only for particular projects. Furthermore, only few projects had included item for protection of public and private service at the site. It is confirmed that the opinion of expert survey, that it would be a reason for arising disputes by including this item. Another least included item compared to CIDA standard bill was providing an adequately trained person to attend to first aid medical duties including provision of a first-aid box. Only 32.3% had included this item. Excavation for trial pits/ trial trenches were 2nd least item included in the selected projects while least item included in the selected projects was contractor's transport facilities at site.

When inclusion of preliminary item compared to the CIDA standard bill considered separately according to the categories of over 300 million projects (OTM), below 300 million projects (LTM), government projects (GOV) and private sector projects (PVT). Comparison of inclusion of preliminary item according to the category is graphed as Figure 2.

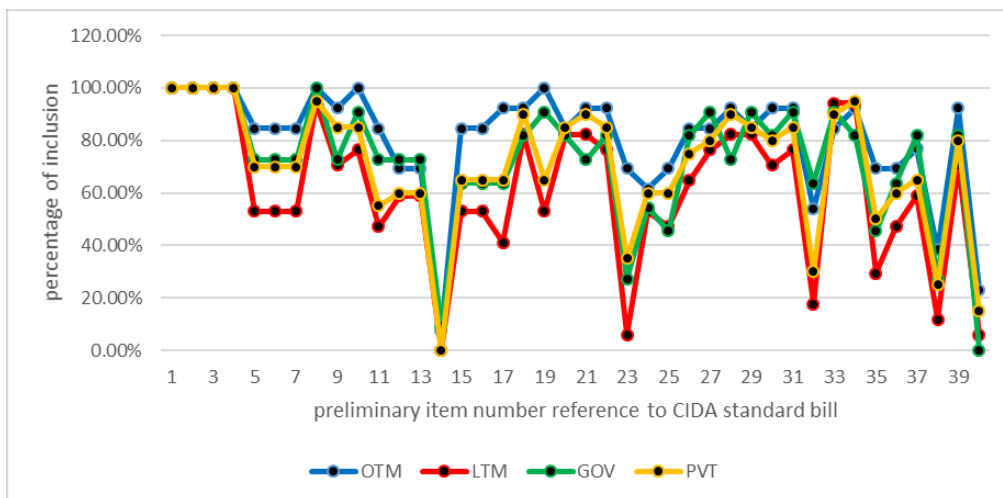


Figure 2: Comparison of Inclusion of Preliminary Item According to the Category

According to the analysed data it can be detected that percentage of inclusion of preliminary items for government projects and private projects are almost same pattern in the graph but slight differences are in some. Such as item of provision for progress reports including photographic records and other schedules. Percentage is much higher in government project than in private projects. Further providing accommodation including sanitary facilities and transport for contractor's staff and workmen offsite has slight difference in those two categories. The percentage is higher in government than in private projects. Comparing to the projects which contract sum over the 300 million and contract sum below the 300 million, the pattern of the graph is almost same. Moreover, it was revealed that size of the project is obviously affect in the preparing preliminary bill. Further, the detailed preliminary bill is used for the large scale projects. There is a huge difference in some preliminary items such as providing engineer's facilities, providing accommodation including sanitary facilities, construction management and supervision, employing a licensed land surveyor to define the building site work and engaging the service of an adequately trained person to attend to first aid medical duties including provision of a first-aid box. These mentioned preliminary items involve higher cost

according to the opinion of expert professionals and individual client cannot bear that cost. That would be a cause for higher percentage in large scale projects and lower percentage in small scale projects.

4.3. CONTRIBUTION OF PRELIMINARIES

The data gathered through work study was analysed illustrated in a graph according to the categorisation of large scale and small scale building projects. Forty (40) buildings projects were selected for analysing the preliminary contribution in large scale and small scale projects.

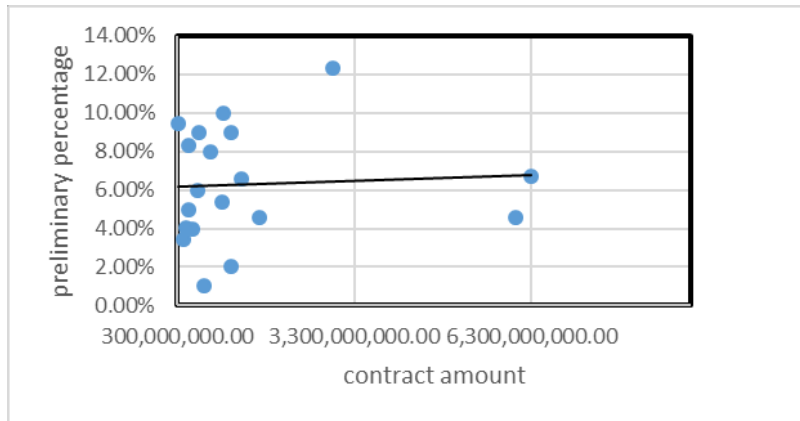


Figure 3: Preliminary Percentage of more than 300 million Projects

Mean and standard deviation also calculated to identify the average preliminary percentage in large scale projects. The mean value was 6.19% and standard deviation was 2.82%.

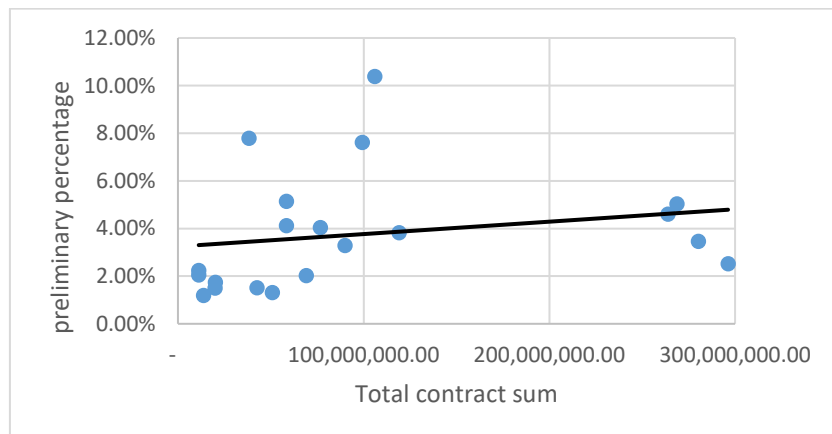


Figure 4: Preliminary Percentage of lesser than 300 million Projects

Above graph shows the relationship between preliminary percentage with the total contract sum. The mean value for the projects of contract sum not exceeding 300 million is 3.77% and the standard deviation is 2.41%. Compared to the above two categories, (see Figures 3 and 4) there is a positive relationship in both categories. That indicates the percentage of preliminaries increase with the increase of total contract sum. According to the calculations average preliminary percentage for building projects was 4.98% with a deviation of 2.89%.

4.4. IMPACT OF USING MINIMUM ITEMISED PRELIMINARY BILL

It was recognised that most of the times consultants advice to use a minimum itemised preliminary bill. Therefore, it was examined that the procedure of paying for the preliminary bill in a situation of time extension and how it is affected by not providing a detail preliminary bill. According to the clause number 44 of the CIDA conditions of contract (SBD 02), clause 8.4 of FIDIC conditions of contract 1999 which are mostly used conditions of contract in Sri Lankan construction industry, contractors have an entitlement to obtain additional cost incurred at an event of the time extension of the contract. It is important to have a detailed preliminary bill for the purpose of avoiding unnecessary disputes and claims arising from the construction for both parties. If there is a detail preliminary bill, the contractor is paid according to the relevant preliminary item to the

relevant extended time in a situation of time extension where the contractor is entitled. It would be easy if there is a detailed preliminary bill for evaluation of the payment. If there is no any detailed preliminary bill, the contractor would include those cost in overheads. It is difficult to evaluate for which items should be paid. It could not be accepted because all the items in the overhead would not be affected by the time extension. It would be unfair for the employer. Most of the respondents mentioned that in a detailed preliminary bill, the preliminary cost is divided into establishment, maintenances and demolition as well as time-related, fixed and time to time items. Most of the times due to time extension time-related items and maintenance would be paid. However, if there is no any detailed preliminary bill all the fixed cost time to time cost are paid in overheads.

If minimum itemised preliminary is incorporated in the construction industry, standard practice is deteriorated. As an example as explained by an expert, health and safety and safety measures are not included in most of the preliminary bills. As a result of that, the contractor might determine his own standards for safety. Therefore, probably people would proceed with no safety boots, safety helmets and safety harnesses. If that preliminary item has been included in the preliminary bill and describes properly the safety procedures to be followed and the equipment required, it will enhance the standard of the construction industry. It would enhance the level of the labour not only the quality but also the attitudes. If these items are provided, employees will feel safe and the quality of the work would also be increased. If the labours were not provided with those safety measures it is very primitive and construction standards would not be enhanced and level of the construction would be same without developing. It is badly affected to the construction industry. Without having a detailed preliminary bill, it will cause lots of disputes in the future. Further, it will cause a delay in the project. If the employer needs the project urgently but due to the disputes, employer cannot take over the building at the right time. It would be a loss for the employer. Furthermore, at the tender evaluation stage, it would be difficult to evaluate. It directly affects to the construction industry when a detailed preliminary bill is not provided. As an example workers' facilities such as toilet facilities and sanitary facilities which was another preliminary item that is not mostly included in preliminary bill. However, according to the conditions of contract and law of the country, these facilities must provide. Therefore, contractors include low rate in their main trade item and not provide those facilities up to the desired level. Because of that labours will feel uncomfortable and they would move to other industries with better work environments such as hotels, factories and the like.

5. CONCLUSIONS AND RECOMMENDATIONS

Literature revealed that preliminary percentage compared to total contract sum is minimum 3% and not exceeding 10% for building work in construction industry. Further it was proved that preliminary percentage of building projects are about 4.98%. Furthermore, it was revealed that percentage for small scale projects is 3.77% and for the large scale projects it has increased to 6.19%. According to the work study preliminary items such as providing hoisting equipment and other plant, protection of public and private service at the site, providing an adequately trained person to attend to first aid medical duties including provision of a first-aid box, excavation for trial pits/ trial trenches and contractor's transport facilities at site were identified as least included preliminary items compared to CIDA standard bill. According to the analysis mainly clients' attitude towards the preliminary bill and the unprofessional conduct by the contractors were identified as main reasons for not including detailed preliminary bill. According to the expert opinions, deterioration of standard and quality of construction industry, impact to the employer, lack of investments towards the construction industry, subsidence of involvement in labours to the construction industry can be regarded as impacts that would be raised because of using minimum itemised preliminary bill. As per most of the experts that interviewed, it could be concluded that current CIDA standard bill for preparing preliminary bill was not followed by most of the construction industry people as the preliminary items included in the standard bill were not sufficient for all the building projects. Since it was found that size of the project was a critical factor when preparing the preliminary bill. Apart from that, some other factors should be considered when preparing the preliminary bill. As the most responsible regulatory body of developing and promoting Sri Lankan construction industry, CIDA has to consider about introducing comprehensive guidelines for each category of construction projects such as small-scale building projects and large-scale building projects. Even though the client asks to not to include the preliminary bill, the client need to be explained and advised on the consequences of not including relevant preliminary items by the consultant Quantity Surveyors. It would be helpful to minimise disputes among both parties.

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