

## Critical Supply Chain Problems In Contractor - Subcontractor Interface Of Sri Lankan Building Construction Projects

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### ABSTRACT

As a developing country, construction industry provides considerable contribution to the Socio-economic growth of Sri Lanka. However, successful completion of a construction project is yet a challenging task. It requires coordination, collaboration and management of different stakeholders with different objectives. While achieving the objectives of a construction project, a proper management of supply chain is vital as improper management of the supply chain impacts negatively on the construction project delivery process.

Prior studies have identified several interfaces which impact on the successful project delivery. The mechanism related to contractor-subcontractor interface highly impacts the ultimate project outcome as it is directly linked with the delivery of the project. This study set out to identify the critical supply chain problems in contractor-subcontractor interface in Sri Lankan building construction projects.

The study was derived through a mix method approach. Semi structured interviews were carried out among the industry expertise to identify the supply chain related problems. Thereafter, to identify the critical problems of supply chain, a questionnaire survey was carried out among the industry practitioners in the building construction projects. The data was analyzed using Relative Important Index in order to rank and identify the severity of each identified problem in the contractor – subcontractor interface.

The study indicates that, using verbal information, lack of reference to the main contract and non-responsible responses as the critical problems in the Information flow. In terms of the Material flow: deliveries are not according to the plan, poor labour management and noncompliance with material and components are ranked as the critical problems. Delay in payments, back-to-back payments and payment interest charging as the critical problems under the Capital flow. These findings may assist the industry practitioners to identify the criticality and monitor supply chain problems in contractor- subcontractor interface and to minimize them in building construction projects.

**KEYWORDS:** *construction industry, construction supply chain, supply chain management, contractor subcontractor interface, interface problems.*

### 1 INTRODUCTION

The construction industry plays a significant role as a fundamental economic division of a country's development. Also, it has been acknowledged as a highly fragmented industry with both positive and negative impacts on the industry itself. Few of them are low productivity, cost and time overruns, conflicts and disputes resulting in claims and time-consuming litigations. According to Karunasena & Sanjeewa (2010), the construction industry has been regarded as a highly insufficient sector, in terms of the process of project delivery. Further, they highlight, improper management, lack of coordination, unjustifiable relationships among members, poor information flow throughout the construction supply chain and low quality output as causes of failure in project delivery (Karunasena & Sanjeewa, 2010).

Among these causes, many researchers have identified construction supply chain related issues initiated by different parties and functions as one of the major reasons for failures in delivery of construction projects (Vrijhoef, et al., 2001; Vrijhoef & Koskela, 2000; Papadopoulos, et al., 2016; Battula, et al., 2020). Therefore, to achieve the set goals in a construction project, proper integration among the project team has become an essential fact for a proper supply chain in every construction project. Thus, the management of supply chain has become a very promising approach to achieve integration among clients, consultants, contractors, subcontractors and suppliers (Papadopoulos, Zamer, & Gayialis, 2016) for a successful completion of a construction project.

The construction supply chain consists of activities and functions associate with transforming raw material to a stage where clients can accept it as a product or a service. Based on the functions and the different parties involved, supply chain problems can be classified into several interfaces (Papadopoulos, Zamer, & Gayialis, 2016). They are, **End user/ Client Interface**: This phase can be introduced as the concept phase of the construction project which consists of knowledge transfer, information exchange, financial and contractual relationship of end user and client. This end user may be client.; **Client/ Design Interface** The phase consist of completion of concept designs, full designs and specifications, the relationships between client and architects and consultants come into play during this phase. (Behera, Mohanty, & Prakash, 2015); **Design/ Procurement Interface**: the second phase of the construction project which includes procurement of the project. The Architects, Consultants and main Contractor are the key players involved in this phase; **Main Contractor/ Subcontractor Interface**: the phase consists of the tasks related to fabrication of elements on site or off site. The main Contractor and subcontractor play the main roles of this phase; **Main Contractor/ Indirect Suppliers Interface**: the phase dedicated for parts manufacturing and material production for the construction project. The relationship between the main contractor and indirect supplier is addressed at this interface; **Production/ Organising Interface**: tasks related to organizing of manufactured and fabricated materials on site is the main activity of this phase; **Organising/ Handing-over Interface**: as per the Figure 1 below, this phase denotes both phase 4 and phase 5 which are installation and winding up respectively. It is also include the project handing over to the end user who undertakes the maintenance of the project time to time after the successful project completion of the project (Behera, Mohanty, & Prakash, 2015).

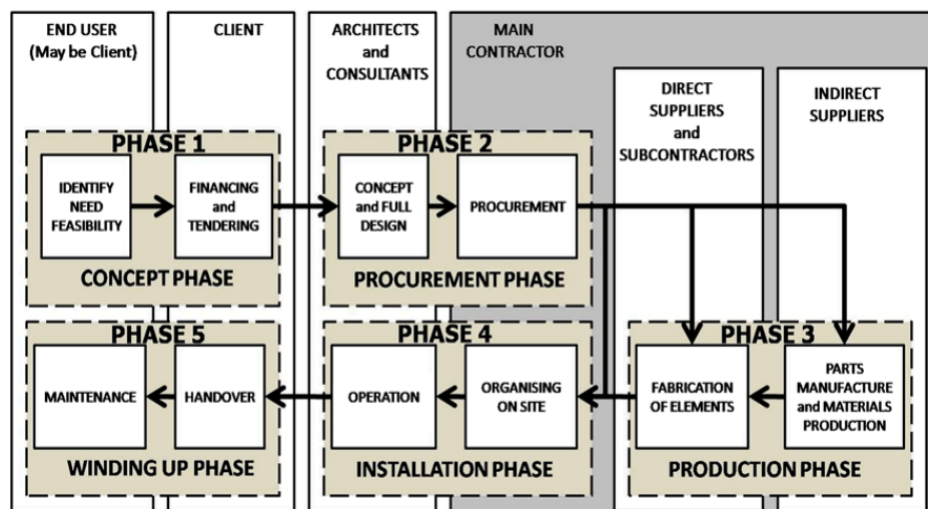


Figure 1: Phases in a typical Construction project (Behera, Mohanty, & Prakash, 2015)

Among these interfaces, supply chain problems in the contractor-subcontractor interface makes a significant impact on the construction project as these parties play a vital role in delivering the project objectives successfully (Jraisat, Jraisat, & Hattar, 2016). Throughout these years, researchers have taken attempts to identify construction supply chain related problems in different countries and regions. In terms of the global context, Critical factors affecting contractor- subcontractor relationship in Chinese construction industry (Tan, Xue, & Cheung, 2017), critical success factors, which need to achieve best Supply chain management in the construction process (Tan, Xue, & Cheung, 2017), alternative

interpretations of the problems and remedies to construction supply chain (Vrijhoef, Koskela , & Howell, 2001), major problems in different interfaces in construction projects (Behera et. al., 2015), problems in defferent interfaces based on composite façade elements (Vrijhoef & Koskela, 2000). Major causes of problems between contractors and subcontractors in Gaza Strip Enshassi, Arain, & Tayeh, (2012) can be highlighted.

Even though many researchers have revealed supply chain problems of construction projects in the global context, considering the local context, there are only few researches conducted to examine the situation with Sri Lankan building construction projects (Kesavan, Gobidan, & Dissanayake, 2015; Karunasena & Sanjeewa, 2010; Sivarajah, 2021). However, the research conducted on local context, have revealed that supply chain problems are not an exception but a common experience for every construction project and for its stakeholders (Sivarajah, 2021; Kesavan, Gobidan, & Dissanayake, 2015). Hence it is important and there is a need to address the critical supply chain related problems in contractor- subcontractor interface in Sri Lankan building construction projects. However, implementing innovative systems to overcome supply chain problems relating to construction projects are still a question in the local context as it follows ‘by different consequences which may affect the construction projects in numerous ways. Therefore, there is a need to identify and address the critical supply chain related problems of construction projects in the local context. Thus, this study attempts to identify the critical supply chain problems in contractor- subcontractor interface of building construction projects in Sri Lanka.

## 2 LITERATURE REVIEW

### 2.1 An introduction to construction supply chain

Supply chain is “the network of organisations consists of upstream and downstream linkages, during different processes and activities that produce value in the form of products or services in the hands of the ultimate customer” (Vrijhoef & Koskela, 2000). The main goal of construction supply chain management is to integrate the clients’ requirements with the materials and information flows along the process of supply chain, until achieving the balance between client satisfaction and the cost (Papadopoulos, Zamer, & Gayialis, 2016). There are critical supply chain characteristics in construction. Few of them are, final construction product is for a single client, unique products, change in location, equipment, production method, high rotation of construction professionals between projects, impossibility of storing all the required material and parts at construction sites (Papadopoulos, Zamer, & Gayialis, 2016). Construction supply chain includes the activities which transform raw materials into a client accepted product or service (Karunasena & Sanjeewa, 2010) with the involvement of different stakeholders in the construction supply chain such as Clients, Architects, Engineers, Contractors, Sub-contractors and Material suppliers etc. To integrate with stakeholders, construction projects use different platforms. These platforms can be defined as interfaces or connectors which connect clients, consultants, contractor and suppliers, comprise with knowledge transfer, information exchange, financial and contractual relationships (Behera, Mohanty, & Prakash, 2015). However, depending on the project function which need to be performed, these networks can be transitory and these flows may subjected to continuous linking and disconnections. Therefore, construction supply chains can be regarded as convergence, temporary and made-to-order chains (Vrijhoef, Koskela , & Howell, 2001).

The construction supply chain can classify into three levels as, **primary supply chain**: refers to chain which delivers the materials incorporate into the final product, **support chain**: chain provides equipment, expertise, materials which facilitate the construction and the **human resource supply chain**: supply of labour (Butković, Kaurić, & Mikulić, 2016). Moreover, in terms of flows, Construction Supply Chain consist of three flows, **Information flow**: Information flows include orders, rules and regulations, schedules, forecasts, drawings, specifications, invoices, etc., **Material flow**: consist with supplies, production, deliveries, etc. and **Capital flow**: payments for products (Souza & Koskela, 2014).

## 2.2 Contractor- subcontractor interface of construction supply chain

The Contractor- subcontractor interface makes a significant impact on the process of project delivery (Karunasena & Sanjeeva, 2010; Zeng, et al., 2018). Karimet al. (2006) have highlighted that the Main Contractors highly rely on large number of subcontractors to get specific parts of the project done (Karim et. al. , 2006). Therefore, in order to get the project done, many Subcontractors or specialists are hired by the Main Contractor with an intention of saving time and reducing risk of the project (Daoor, Fanoona, Lulu, & Shanty, 2020). According to Tan and his team (2017), both the main contractor and subcontractors interdepend with each other for a successful project completion. However, the alliance of these two parties creates more problems in the contractor and subcontractor interface in the construction supply chain which may create a significant impact on the project delivery. Hence, identifying these problems and addressing them properly would minimise the impact on the successful completion of projects as well as strengthening the relationship of these two parties.

## 2.3 Supply chain related Problems in contractor- subcontractor interface

Supply chain problems related to contractor-subcontractor interface has become one of the key problems in construction projects (Vrijhoef, Koskela , & Howell, 2001). According to Papadopoulos, Zamer, & Gayialis (2016) majority of problems are not generated in the conversion process but in the interfaces within the supply chain (Papadopoulos, Zamer, & Gayialis, 2016). The below Table 1 shows a summary of supply chain problems in contractor subcontractor interface regarding construction projects.

Table 1: Supply chain related problems identified in Contractor-Sub Contractor Interface

Problems retrieved from literature	Reference
Subcontracted work not delivered according to main design	(Vrijhoef, Koskela , & Howell, 2001)
Contract and planning	(Vrijhoef, Koskela , & Howell, 2001)
Design problems (many changes and inconsistent information).	(Serpell & Heredia, 2004)
Deficient communication and information transfer.	(Serpell & Heredia, 2004)
Poor quality of materials and components.	(Serpell & Heredia, 2004)
Inadequate management within the supply chain, mainly poor planning and control	(Serpell & Heredia, 2004) (Papadopoulos, Zamer, & Gayialis, 2016)
Poor training of contractor’s suppliers, subcontractors and workers	(Serpell & Heredia, 2004) (Papadopoulos, Zamer, & Gayialis, 2016)
Lack of effective methods for measuring the performance of the different parties within the supply chain.	(Serpell & Heredia, 2004)
Inaccurate data	(Behera, Mohanty, & Prakash, 2015)
Information needs not met,	(Behera, Mohanty, & Prakash, 2015)
Adversarial bargaining and other changes.	(Behera, Mohanty, & Prakash, 2015)
Deliveries not according to planning	(Papadopoulos, Zamer, & Gayialis, 2016)
Late deliveries of permanent materials	(Papadopoulos, Zamer, & Gayialis, 2016)
Wrong and defective deliveries	(Papadopoulos, Zamer, & Gayialis, 2016)
Interfaces with several subcontractors and suppliers	(Papadopoulos, Zamer, & Gayialis, 2016)
Delay in payments	(Xie, et al., 2019) (Ramachandra & Rotimi, 2012)

## 3 METHODOLOGY

At the beginning of the study, a comprehensive literature survey was conducted to identify the problems in contractor- subcontractor interface related to construction supply chain. 15 number of

problems were identified based on literature. After a comprehensive Literature survey, the research was carried forward with the mixed method approach to explore the critical problems of construction supply chain in the building construction projects in Sri Lanka. Since the supply chain problems related to building construction projects differ from country to country and context to context, semi-structured interviews with industry experts who possess over 20 years of experience in building construction projects followed by a questionnaire survey were carried out to identify the critical problems in supply chain in building construction projects in Sri Lanka.

To identify the problems in Sri Lankan context, five number of semi-structured interviews were carried out. The focused group was deputy general managers of leading construction companies (1), Project managers (2) and Chief quantity surveyors (2). The data which provided by them, was considered as reliable as they possess over 20 years of experience in building construction projects in Sri Lanka. Based on comments given by the professionals, the questionnaire was developed. The questionnaire was distributed only among the Contractors with CS2-C4 grading under CIDA registration and Subcontractors in building construction projects. small-scale contractors possess less administrative experience with subcontractors and was not considered in this study. However, no any limitation was set for subcontractors. The questionnaire survey was planned to examine the critical supply chain problems in contractor- subcontractor interface in Sri Lankan building construction projects. Therefore, Close-ended questions were incorporated in order to identify the critical supply chain problems and their causes in contractor subcontractor interface. The questionnaire consists of 10 numbers of closed- ended questions. For proposed questionnaire survey, 55 questionnaires were distributed among the focused group. However only 34 responses were received. To identify the critical problems of supply chain in building construction projects and their frequency of occurrence, two different Likert scales were introduced to the respondents as shown in Tables 1(a) and 1(b) respectively.

Table 1(a): Likert scale for identifying the criticality of different problems in construction supply chain

	Value
Not critical at all	1
Low	2
Moderate	3
High	4
Very Critical	5

Table 1(b): Likert scale for assessing the frequency of occurrence of construction supply chain problems

	Value
Very rare	1
Rare	2
Moderate	3
Often	4
Very often	5

Responses of the questionnaire survey were analyzed and ranked using RII (Relative Importance Index) method.

$$\text{Relative Important Index} = \frac{\sum w}{AN} \quad (1)$$

Where “w” is the weighting given to each factor by the respondents, (ranging from 1 to 5)

“A” is the highest weight (i.e.,5 in this study) “N” is the total number of respondents. RII ranges from 0-1.

$$\text{Relative Importance Index} = \frac{\sum \mu}{A \times N} = \frac{1n_1 + 2n_2 + 3n_3 + 4n_4 + 5n_5}{5N} \quad (2)$$

$n_1$  = Number of respondents rate on 1 (1 – not critical at all)

$n_2$  = Number of respondents rate on 2

$n_3$  = Number of respondents rate on 3

$n_4$  = Number of respondents rate on 4

$n_5$  = Number of respondents rate on 5 (5 – very critical)



According to the responds received, Relative Importance Index were calculated similar to the above calculation.

Table 3: Respondents' Profile

Organizational Background	Level of Experience	Sample
Contractor	< 5 years	7
	5-10 years	12
	10-15 years	6
	>15 years	2
Sub-contractor	< 5 years	2
	5-10 years	4
	10-15 years	1
	>15 years	0

According to the Table 2, the majority contractors and Sub-contractors participated in this questionnaire possessed 5-10 years of experience in the construction industry which proved that the industry practitioners

#### 4 ANALYSIS AND RESULTS

This section focuses on the main three areas of the study; Problems in information flow, Problems in product flow and problems in capital flow. In each section, RII score was calculated followed by a brief discussion. Problems related to orders, regulations, schedules, forecasts, drawings, specifications, invoices and contracts were included under information flow category. Problems include supplies, productions and deliveries were categorized under product flow. Payment problems related to products, services and supplies were categorized under capital flow.

##### 4.1 Problems in Information flow

From literature and expert interviews, 17 number of problems of construction supply chain in the interface of contractor- subcontractor were identified. Those problems were categorised into three main areas as scope definition, communication and design. Problems identified in information flow are shown in Table 3.

Table 3: Problems in Information flow

No.	Identified Problem in Information flow	Reference
<b>1.0</b>	<b>Scope Definition</b>	
1.1	Unclear specification	Respondent 01, 04
1.2	Unclear written subcontract scope	Respondent 01, 02, 04, 05
1.3	Lack of reference to the main contract written scope	Respondent 01, 02
1.4	Lack of signed subcontractor-contractor agreement with clear deliverable and deadlines	Respondent 03
1.5	Lack of finer scope definition (interface marked in the drawings or written)	Respondent 02
1.6	Unable to obtaining Guaranties warranties	Respondent 05
<b>2.0</b>	<b>Communication</b>	
2.1	Non-responsible responses	Respondent 01
2.2	Using verbal information	Respondent 01
2.3	Unnecessary communication	Respondent 01
2.4	Deficient communication and information transferring	(Serpell & Heredia, 2004)
2.5	Copyrighting issues	Respondent 01
2.6	Information need not met	(Behera, Mohanty, & Prakash, 2015)

2.7	Unclear responsibility matrix	Respondent 01
2.8	Lack of periodic progress review meetings	Respondent 03
<b>3.0</b>	<b>Design</b>	
3.1	Subcontractors' Design responsibility	Respondent 01
3.2	Property product and patent rights	Respondent 05
3.3	Design changes	(Serpell & Heredia, 2004)

However, out of these various problems, it is necessary to identify the most critical problems in information flow. Therefore, based on the questionnaire survey, the study identifies the most critical problem in information flow.

Table 5, shows the problems ranked in the order of criticality with the RII score under information flow. Using verbal information was ranked as the most critical problem in information flow with Relative Importance Index (RII) of (0.953). Lack of reference to the main contract written scope was ranked as the second most critical problem in information flow, with RII of (0.947). non-responsible responses, Lack of finer scope definition (interface marked in the drawings or written and design changes (0.924), unclear specification (0.718), copyrighting issues (0.724) respectively were ranked in a descending order by the professionals.

Table 5: Relative important Index Calculation for problems in Information Flow

Problems in Information flow	RII	Rank
Using verbal information	0.953	1
Lack of reference of the main contract written scope	0.947	2
Non responsible response	0.941	3
Lack of finer scope definition (interface marked in the drawings or written)	0.924	4
Design changes	0.924	4
Information needs not met	0.906	5
Lack of signed subcontractor-contractor agreement with clear deliverable and deadline	0.900	6
Lack of periodic progress review meetings	0.888	7
Deficient communication and information transferring	0.876	8
Unclear written sub-contract scope	0.865	9
Unclear responsibility matrix	0.859	10
Unable to obtaining guaranties warranties	0.841	11
Sub-contractors' design responsibility	0.818	12
Unnecessary communication	0.806	13
Proprietary products and patent rights	0.794	14
Copy righting issues	0.724	15
Unclear specification	0.718	16

The above Table 5, indicates that in the construction supply chain, of building construction projects in Sri Lanka, the most critical problem under information flow is relying on verbal information which reflects the informal behaviour shown by the industry practitioners during the process of acquiring goods and services.

#### 4.2 Problems in product flow

11 problems in contractor- sub contractor interface in Sri Lankan building construction industry were identified. Problems in product flow is shown in Table 6

Table 6: Problems in Product flow

No.	Identified Problem in Product flow	Reference
1	Non-compliance with the material and components	Respondent 01, 02, (Serpell & Heredia, 2004), (Papadopoulos, Zamer, & Gayialis, 2016)
2	Poor workmanship and lack of performance subcontractors	Respondent 01, 05,
3	Delays in defect rectification	Respondent 03
4	Poor Labour Management	Respondent 03
5	Issues in contractor subcontractor facilities	Respondent 04, 05
6	Non adherence to the safety procedures	Respondent 05
7	Subcontractors work not delivered according to the main design	(Vrijhoef, Koskela , & Howell, 2001)
8	Late deliveries of permanent material	(Papadopoulos, Zamer, & Gayialis, 2016)
9	Deliveries not according to the plan	(Papadopoulos, Zamer, & Gayialis, 2016)
10	Lack of effective methods for measuring the performance of the different parties within the supply chain	(Papadopoulos, Zamer, & Gayialis, 2016)
11	Interfaces with several subcontractors and suppliers	(Papadopoulos, Zamer, & Gayialis, 2016)

Table 7 Reports the ranks for the problems in product flow. As shown in Table 7, “Product and services deliveries are not according to the plan” was perceived as the most critical problem in the product flow with RII of (0.741). Similarly, Papadopoulos (2016) and his team have stated “deliveries are not according to the plan” as one of general supply chain problems in the construction industry (Papadopoulos, 2016). With the RII of (0.735), Poor labour management was indicated as the second most critical problem in product flow. Non-compliance with material and components and poor workmanship and lack of performance of subcontractors were ranked as the third most critical problem in product flow with the RII of (0.724). Similarly, Serpell & Heredia (2004), Papadopoulos, et al., (2016) have stated that poor quality materials as well as components and wrong and defective deliveries as one of general supply chain related problems in construction industry (Serpell & Heredia, 2004). “Issues in contractor- subcontractor facilities” was ranked in the last position by the respondent with RII of (0.624).

Table 7: Relative Importance Index Calculation for Problems in Product Flow

Problems in product flow	RII	Rank
Deliveries not according to the plan	0.741	1
Poor labour management	0.735	2
Non-compliance with material and components	0.724	3
Poor workmanship and lack of performance subcontractors	0.724	3
Late deliveries of permanent material	0.706	4
Delays in defect rectification	0.688	5
Non adherence to the safety procedures	0.682	6
Subcontractors work not delivered according to the main design	0.682	6
Interfaces with several subcontractors and suppliers	0.653	7
Lack of effective methods for measuring the performance different parties with supply chain	0.653	7
Issues in contractor-subcontractor facilities	0.624	8

According to the Table 7, the most critical problem of the product flow is indicated as contradictory of delivery and plan which reflects poor coordination and communication attempts taken by the industry practitioners.



### 4.3 Problems in Capital flow

During the literature review and by the Interviews conducted, 6 problems were identified under capital flow and they are shown in Table 8.

Table 8: Problems in Capital flow

No	Identified Problems in Capital flow	Reference
1	Payment interest charging	Respondent 01, 04
2	Payment Terms and conditions	Respondent 01, 02
3	Disputes arising from claims	Respondent 03
4	Delay in payments	Respondent 04, (Xie, et al., 2019) (Ramachandra & Rotimi, 2012)
5	Back-to-back payment	Respondent 01, 05
6	Adversarial bargaining and other changes	(Behera, Mohanty, & Prakash, 2015)

Table 9 shows problems in Capital flow related to Sri Lankan building construction projects according to their criticality. Delay in payments and Back-to-back payment were perceived as the most critical problem in capital flow with RII of (0.635). Similarly, Xie, et al., (2019) have stated that, payment delays are common in construction supply chain and it is a key factor leading to overall project delays (Xie, et al.2019). Further, Ramachandra & Rotimi, (2012) have revealed that payment delays are more frequent in New Zealand construction projects (Ramachandra & Rotimi, 2012). With RII of (0.624), payment interest charging, payment terms and conditions, adversarial bargaining claim the similar importance in the ranking. changes were perceived as the second most critical problem in capital flow. Similarly, Behera and his team (2015) have stated that “adversarial bargaining and other changes” is a general problem in construction supply chain (Behera et. Al, 2015). Disputes arising from claims were ranked in the last position with RII of (0.600).

Problems in capital flow	RII	Rank
Delay in payments	0.635	1
Back to-back payment	0.635	1
Payment interest charging	0.624	2
Payment terms and conditions	0.624	2
Adversarial bargaining and other changes	0.624	2
Disputes arising from claims	0.600	3

### 4.4 Overall occurrence of problems in each flow

According to the survey results, as shown in table 10, the occurrence of problems in information flow was perceived as the highest with RII of 0.682. Occurrence of problems in product flow was perceived as higher than the capital flow with RII of (0.671).

Table 10: Relative Importance Index for Occurrence of Problems

Flows in supply chain	RII	Rank
Information flow	0.682	1
Product flow	0.671	2
Capital flow	0.665	3

Survey results reveal that, the construction supply chain of building construction projects in Sri Lanka suffers from problems under information flow than the problems related to product flow and capital flow respectively. Considering each of these flows separately, the top ranked critical supply chain problems which reveal from the survey are listed with their respective rank in Table 11.

Table 11: Top ranked critical supply chain problems

Rank no.	Information flow	Product flow	Capital flow
1	Using verbal information	Deliveries are not according to the plan	Delay in payments Back-to-back payments
2	Lack of reference to the main contract	Poor labor management	Payment interest charging Payment terms and conditions Adversarial bargaining and other changes
3	Non responsible response	Noncompliance with material and components	Disputes arising from claims

## 5 CONCLUSION

Construction supply chain can consider as one of key factors which effect the delivery of construction projects. Maintaining proper supply chain in a construction project is a necessity for the successful completion. Construction supply chain consist with various interfaces. Among these interfaces contractor- subcontractor interface directly impact the end product of development projects. Therefore, problems which arise in contractor subcontractor interface significantly effect the project completion. Thus, in order to maximise the efficiency of building construction projects, it is important to identify and address these critical problems in construction supply chain to complete the construction project successfully. e.

This study has identified supply chain related problems in contractor subcontractor interface of construction industry followed by the identification of, supply chain problems in contractor-subcontractor interface of building construction projects in Sri Lankan context through semi- structured interviews with construction industry professionals. Initially, critical problems were identified using questioner survey. Based on the survey results, RII has been calculated to rank the identified problems. The top most critical problems in contractor- subcontractor interface were concluded through the ranking results. According to the results, using verbal information for communication, lack of reference to the main contract written scope, non-responsible response, lack of finer scope definition (interface marked in the drawing or written), design changes and information needs not met are the top five critical problems in information flow. Deliveries not according to the plan, poor labour management, noncompliance with material and components, poor workmanship and lack of performance of subcontractors, late deliveries of permanent material and delays in defect rectification are the top five critical problems related to the product flow. Delays in payments, back-to-back work acceptance are the top ranked critical problems in capital flow. These findings may assist the industry practitioners to identify the criticality and monitor supply chain problems in the interface and help to minimize them in building construction projects. Since this research was focused only on the community of Contractors with CS2 and C4 gradings, further research can be carried out focusing the other grades of Contractors., The research finding were limited to the problems related to contractor-subcontractor interface only. However, further research can also be carried out focusing the critical problems regarding the other interfaces related to the Sri Lankan building construction projects. However, deep and detailed research developments are necessary to identify solutions for the problems relating to this area.

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