

Causes behind Poor Written Communication Impact on Contractor's Quantity Surveyor Practices in Post Contract Stage

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Abstract: Effective communication among different stakeholders is a vigorous characteristic of successful construction industry practices. Written communication provides documentary evidence for strengthening key contractual relationships among such stakeholders. Compared to other forms of communication, written communication is a source of great comfort to Quantity Surveyor's royalty in the field of construction. Although many researchers discussed the causes behind poor communication in the construction industry, there is a substantial gap in analyzing the causes behind poorly written communication which impact post contract quantity surveying practices. Hence, this research primarily focuses on investigating the significant causes behind poorly written communication which influence contractor's quantity surveyor practices in the post-contract stage. A detailed literature survey was conducted and identified 26 causes behind poor communication in the construction industry. Then, 3 preliminary interviews were conducted and customized the literature findings in line with the contractor's quantity surveyor practices in the post-contract stage. Accordingly, 7 main contractor related causes, 5 sub-contractor related causes, 8 consultant related causes, 4 client related causes, and 4 communication tools related causes were formulated and tested with the use of a detailed questionnaire. Data collection was limited to a census of 60 quantity surveying

professionals who were working on construction projects in the Colombo district belongs to ABC major constructing company. 57 of them were responded and the Relative Important Index (RII) method was utilized to analyze the data. The study revealed the communication tools related causes as the significant causes behind poor written communication in post-contract stage contractor's quantity surveying practices.

Keywords: Client, Consultant, Main Contractor, Poor Written Communication, Sub-contractor.

Introduction

Background to Study

Compared to other industries, construction is one of the most diverse and intriguing industries that is rapidly gaining popularity around the world (Gamil and Rahman, 2017). As a result of its nature, the construction industry has become a complicated and critical business (Hussain et al., 2018). According to the views of the number of researchers, unsuccessful data transferring can be depicted as one of the most critical issues experienced in the construction industry (Gamil and Rahman, 2017). Therefore, communication is a consequential and timely heading related to the present day construction process (Hoezen et al., 2006).

Communication is the process by which the sender sends a message to the recipient (Olanrewaju et al., 2017). It takes place through various modes such as written, oral,

non-verbal, or composition of verbal and non-verbal modes (Tipili et al., 2014). Among them, written communication takes a significant status (Prabavathi and Nagasubramani, 2018). Despite the manual consequences of written communication, it is integrated with different technologies in the present day context (Chidiebere, n.d). As further state by Prabavathi and Nagasubramani (2018), the written communication process helps to share information with the support of various documentation methods such as notices, reports, memos, e-mails, letters, text messages, journal articles, etc.

According to the official data presented by Jayamaha (2018), the construction industry is growing year by year progressively in Sri Lanka. However, most of the Sri Lankan construction projects are predominantly suffers from a lack of effective communication among construction parties. Similarly, problems related to poorly written communication negatively impacts the professional role of a Quantity Surveyor (QS) (Chidiebere, n.d). Since, the contribution of a QS to a construction project is very important for producing an economical design (Mbachu, 2015). Moreover, in a country like Sri Lanka where every activity is based on documented procedures, written communication takes an important place. Hence, it is imperative to ensure documentary evidence through systematic written communication between the QS and the project team members.

Though several researchers discussed the causes behind poor communication in the construction industry in general (Abdullahi et al., 2016; Mohammad et al., 2016 and Ishaq et al., 2018), they often fail to discuss the extent of the weaknesses in written communication in the construction industry that impact the post-contract duties of the contractor's QS. The lack of attention of many researchers in this regard is well illustrated

by the lack of research reports on this topic. Hence, the researcher intends to conduct this research to fulfill this gap.

The main objective of this research is to investigate the causes behind poorly written communication which significantly influences the contractor's quantity surveyor practices in the post-contract stage with special reference to ABC contracting organization in Sri Lanka. It is one of the leading CS2 building construction companies as per the Construction Industry Development Authority (CIDA) contractor classification system (CIDA, 2009).

Causes behind poorly written communication in the construction industry Gamil and Rahman (2017) identifies 33 causes for poor communication, of which 3 are primarily influenced by poorly written communication. These include poor communication between the construction parties, lack of systematic communication in the construction sector, and poor communication skills between the parties. Valitherm (2014) specifies that the language barrier is one of the main causes of poor communication in the Malaysian construction sector. Moreover, Odine (2015) identifies poor identification of contractual documents as one of the main causes that impact poor communication between the construction team and external parties. Besides, Hussain et al. (2018) state that language impairment, ineffective responsiveness, lack of communication management, insufficient identification of role, and unsuccessful coordination as causes that contribute to poor communication. Also, Soliman (2017) identified five major issues affecting the 19 communication problems in the construction industry. These include the use of old filing systems, the absence of site progress meetings in the workplace, the lack of drawings and documents, the delay in the contractor providing information to

supervisors, and lack of supervisor experience.

Odine (2015) also identifies 17 causes of poor communication. Inappropriate information systems, attitudinal barriers, resistance to change for new communication methods, high workload, cultural background, using wrong communication medium at the wrong time, unfamiliar with the technical terms, physical disabilities such as hearing issues, late information, etc. which affects poorly written communication can be depicted as some of the significant causes identified by Odine (2015). Moreover, Ishaq et al. (2018) and Mohammed et al. (2016) states that many causes which can be effective for the communication between client and contractor during construction projects in Nigeria such as lack of cooperation among the two parties, selfish interest, lack of trust between parties, uncertainty, misunderstanding between the parties, lack of open communication between parties, failure to understand the individuality of each other, unpleasant relationship between the two parties, language barriers, and complexity of the project, etc. Olanrewaju et al. (2017) elaborate poor handling of paperwork and wrong instructions as the highest impacted causes to reduce the quality and accuracy of written communication in the construction industry. Abdullahi et al. (2016) identify three reasons that can influence poor communication among the main contractor, consultant, and client, namely: restricted communication resources, absence of faith between parties, and linguistic problems.

According to Agarwal and Garg (2012) physical barriers, fault of system design, attitudinal barriers of organization staff, poor identification of ambiguity of words/phrases, lack of individual linguistic ability, physiological barriers, poor presentation skills, etc. affect for ineffective communication within construction

organizations. Jayasena and Alwis (2011) declare that keeping unsound records and poor baseline updating as basic causes behind ineffective written communication.

All the literature findings that generally affect ineffective communication can be summarized as in Table 1. However, the causes behind poorly written communication were filtered from the identified causes of poor communication by conducting preliminary interviews. During the preliminary interviews, the interviewees were agreed to the identified causes that influence the poorly written communication of ABC construction company's Qs's duties. Moreover, the interviewees suggested a lack of understanding of amended circulars & other amended documents, failure to submit markup drawings on time due to negligence, delay in providing instructions & variation approvals to the contractor, and limited written communication resources for the project as the causes behind poorly written communication addition to the literature findings.

Ultimately, as directed by Soliman (2017), the causes behind poorly written communication categorized into five categories namely; the main contractor related causes, sub-contractor related causes, consultant related causes, client-related causes, and communication tools related causes.

Table 5. Literature findings of the causes behind poorly written communication

Category of Causes	Causes of poorly written communication	References
Main Contractor related causes	Lack of understanding of job responsibilities & working capacity.	(Barriers to Effective Communication, 2011; Agarwal and Garg, 2012; Odine, 2015 and Hussain et al., 2018)

	Poor time management related to communication procedures.	(Odine, 2015)
	Lack of understanding of contractual provisions, terms & related clauses.	(Barriers to Effective Communication, 2011 and Odine, 2015)
	Complexity of the project generated by foreign contract partners.	(Mohammad et al, 2016 and Ishaq et al., 2018)
	Attitudinal barriers.	(Barriers to Effective Communication, 2011 and Odine, 2015)
	Personal Disabilities (Poor eyesight, Hearing Problems etc.).	(Barriers to Effective Communication 2011; Agarwal and Garg, 2012 and Odine, 2015)
Sub-contractors related causes	Inability to follow required contractual clauses, terms & provisions.	(Odine, 2015)
	Language Barriers.	(Barriers to Effective Communication, 2011; Valitherm, 2014; Abdullahi et al., 2016; Mohammad et al, 2016; Hussain et al., 2018 and Ishaq et al., 2018)
	Personal disabilities (Poor eyesight, Hearing Problems etc.).	(Agarwal and Garg, 2012 and Odine, 2015)
	Failure to discuss about contract agreement openly with main contractor to cover his requirement.	(Mohammad et al, 2016 and Ishaq et al., 2018)
Consultant related causes	Delay in providing instructions & variation approvals to the contractor	(Olanrewaju et al, 2017 and Soliman, 2017)
	Poor time management.	(Odine, 2015)
	Poor attention for contractual	(Hussain et al., 2018)

	provisions, terms & clauses.	
Consultant related causes	Poor attention for the contractor's comments at progress review meetings.	(Barriers to Effective Communication, 2011 and Abdullahi et al., 2016)
	Poor understanding of job responsibilities & working capacity.	(Agarwal and Garg, 2012; Odine, 2015 and Hussain et al., 2018)
	Attitudinal Barriers.	(Odine, 2015)
	Personal Disabilities (Poor eyesight, Hearing Problems etc.).	(Agarwal and Garg, 2012 and Odine, 2015)
	Inaccurate drawings and supportive documents prepared by them.	(Soliman, 2017)
Client related causes	Poor understanding about duties, responsibilities & working capacity.	(Agarwal and Garg, 2012; Odine, 2015 and Hussain et al., 2018)
	Unable to follow contractual provisions, terms & related clauses.	(Odine, 2015)
	Lack of trust between client and other partners.	(Abdullahi et al., 2016; Mohammad et al., 2016 and Ishaq et al., 2018)
	Personal Disabilities (Poor eyesight, Hearing Problems etc.).	(Agarwal and Garg, 2012 and Odine, 2015)
Communication Tools related causes	Using oldest documentary/record keeping methods and equipment.	(Silva et al., 2005 and Soliman, 2017)
	Poor knowledge about new written communication methods and tools.	(Silva et al., 2005; Agarwal and Garg, 2012; Abdullahi et al., 2016 and Soliman, 2017)
	Limited written communication resources for the project.	(Abdullahi et al., 2016 and Chidiebere, n.d)
	Technical errors of written communication tools.	(Agarwal and Garg, 2012; Abdullahi et al., 2016)

Methodology

A mixed-method was utilized in this research. The secondary data for this research was obtained using books, previous research reports, journal articles, conference papers, web sites, etc. published by various researchers. The causes behind poor communication in the construction industry were identified with the use of this secondary data collection technique.

Both interview and questionnaire methods were employed for the primary data collection. Preliminary interviews were conducted among three subject experts who had nearly 10 years of experience in post-contract level quantity surveying practices to demystifying the literature review findings in line with the causes behind poorly written communication in post-contract stage contractors' quantity surveyor practices of ABC contracting company.

As Jupp (2006) and Pierce (2018) stated, the census is the method for collecting data from the overall population when the numbers of respondents are limited. Therefore, a special sample selection technique was not followed, and obtaining questionnaire feedbacks were limited to the quantity surveying professionals belongs to six ongoing construction projects during 2019 in the Colombo district and head office which belongs to ABC contracting company.

As Silva et al. (2005) and Chidiebere (n.d.) followed, ongoing construction projects were selected and questionnaire feedbacks obtained from 60 census population of quantity surveying professionals who were working on the selected construction projects. The total population of respondents comprised of Chartered Quantity Surveyors, Chief Quantity Surveyors, Quantity Surveyors, Assistant Quantity Surveyors, Quantity Surveyor Assistants, and Trainee Quantity Surveyors who were knowledgeable on the role of contractor's QS.

The questionnaire for the survey consisted of two sections: A and B. The first, section A, contains the basic information of the respondents while the second (section B) addresses the causes of poorly written communication. 28 causes under five categories namely, the main contractor related, sub-contractor related, consultant (engineer) related, client-related, and communication tools related causes behind poorly written communication were tested in section B. The Relative Importance Index (RII) method aided the finding of significant causes behind poorly written communication.

$$\text{Relative Important Index (RII)} = \frac{\sum V}{HN}$$

V = Value that the respondent assigns to the variable

H = Highest value assigns the variable

N = Total number of respondents

As Xie et al. (2000) depicted, SPSS Software was used to analyze data. In line with Ishaq et al. (2018), Silva et al. (2005), and Olanrewaju et al. (2017), a 5-digits Likert scale was utilized for this research. Scale consisted with five parameters numerically, 1 = Disagree, 2 = Agree, 3 = Neutral, 4 = Highly Agree and 5 = Strongly Agree.

For further analysis, RII value between 0 and 0.5 was considered as less influential causes of the study. Correspondingly, RII value between 0.5 and 0.75 was reflected little or slightly influential causes while the RII values exceeding 0.75 was measured as a highly influential cause.

Results and Discussion

Basic respondents information

57 among 60 census populations were responded by achieving a 95% response rate as shown in Table 2. Among them, 56.2% of respondents had more than 5 years of experience in the Sri Lankan construction

industry and 94.7% of them had post construct level quantity surveying experience. Besides, 96.5% of respondents engaged with building construction projects.

Table 2. Summary of Responses

	Target Population	Responded Population	Response Rate
Quantity Surveyors	60	57	95%

Data Analysis – Causes for Poor Written Communication

Results related to 7 main contractor related causes, 5 sub-contractor related causes, 8 consultant related causes, 4 client related causes, and 4 communication tools related causes with a total number of 28 causes behind poorly written communication which can be impacted for post-contract practices of contractor's quantity surveyor were analyzed.

Main contractor related causes: By considering the RII values and ranks shown in Table 3, lack of understanding of contractual provisions, terms & related clauses can be depicted as the most influential contractor-related cause which mostly impacts contractor's QS's role (RII - 0.6912). As a result of its RII between 0.5 and 0.75, It can be considered as a somewhat influential cause behind poorly written communication for Contractor's QS's post-contract duties. As Odine (2015) noted, a similar reason affected poor communication in the construction industries of many countries in the world.

Table 3. Summary of the main contractor related causes

Main Contractor Related Causes	RII	Category Rank	Overall Rank
Lack of understanding of job responsibilities & working capacity.	0.6561	3	10

Poor time management related to communication procedures.	0.6632	2	9
Lack of understanding of amended circulars & other amended documents.	0.6421	4	12
Lack of understanding of contractual provisions, terms & related clauses.	0.6912	1	4
The complexity of the project generated by foreign contract partners.	0.6211	5	16
Attitudinal Barriers.	0.5684	6	17
Personal Disabilities (Poor eyesight, Hearing Problems etc.)	0.4632	7	22
RII Mean value			0.6150

Sub-contractor related causes: As stated in Table 4, the main reason behind the subcontractor's involvement for poorly written communication was the inability to follow up on the required contractual clauses, terms & conditions with a high RII value of 0.6667 in the category. It is also vested in the somewhat significant category (RII between 0.5 and 0.75). Odine (2015) also identified it as a significant cause of poor communication in the construction industry. Moreover, the tabulate results portrayed contractor's QS has a somewhat significant impact on its post-contract performance, due to the second-highest rated cause in this category; failure to discuss contract agreement openly with the main contractor to cover his requirement.

Table 4. Summary of sub-contractor related causes

Sub-contractor related causes	RII	Category Rank	Overall Rank
Failure to submit markup drawings on time due to negligence.	0.6386	3	13

Inability to follow required contractual clauses, terms & provisions.	0.6667	1	8
Language barriers.	0.6281	4	15
Physical Disabilities (Poor eyesight, Hearing Problems etc.)	0.4737	5	21
Failure to discuss about contract agreement openly with the main contractor to cover his requirement.	0.6632	2	9
RII Mean value			0.6140

Consultant (The Engineer) related causes: The highest RII value (0.7474) for this category vested on the cause was 'delays in providing instructions and variation approvals' as shown in Table 5. All most all the causes in this category were somewhat impacted for poorly written communication in post-contract stage contractor's quantity surveyor practices for the projects conducted by ABC contracting company that resulted in RII values between 0.5 and 0.75. The results were in line with the findings of Soliman (2017) and Olanrewaju et al. (2017). However, personal disabilities (RII=0.4772) minimally caused poorly written communication due to its RII value below 0.5.

Table 5. Summary of consultant related causes

Consultant related causes	RII	Category Rank	Overall Rank
Delay in providing instructions & variation approvals to the contractor.	0.7474	1	1
Poor time management.	0.6842	3	5
Poor attention for contractual provisions, terms & clauses.	0.6982	2	2
Poor attention to the contractor's comments at progress review meetings.	0.6772	4	6

Poor understanding of job responsibilities & working capacity.	0.6351	6	14
Attitudinal Barriers.	0.5544	7	18
Personal Disabilities (Poor eyesight, Hearing Problems, etc.).	0.4772	8	20
Inaccurate drawings and supportive documents prepared by them.	0.6632	5	9
RII Mean Value			0.6421

4) Client related causes: According to the tabulated results in Table 6, clients' inability to follow contractual conditions, terms & related clauses (RII=0.6772) was the dominant client-related issue behind poorly written communication that somewhat impact (RII between 0.5 and 0.75) for the contractor's quantity surveyor activities in the post-contact stage.

Table 6. Summary of client related causes

Client related causes	RII	Category Rank	Overall Rank
1. Poor understanding of duties, responsibilities & working capacity.	0.6702	2	7
2. Unable to follow contractual provisions, terms & related clauses.	0.6772	1	6
3. Lack of trust between client and other partners.	0.6491	3	11
4. Personal Disabilities (Poor eyesight, Hearing Problems etc.).	0.4912	4	19
RII Mean Value			0.6219

Communication tools related causes: Use of oldest documentary/ record-keeping methods that reached 0.6982 RII value was the leading cause in this category as shown in Table 7. However, it was somewhat influential (RII between 0.5 and 0.75) cause

for poorly written communication for Contractor’s QS’s post-contract duties.

Table 7. Summary of communication tools related causes

Communication tools related causes	RII	Category Rank	Overall Rank
Using the oldest documentary/ record keeping methods and equipment	0.6982	1	2
Poor knowledge about new written communication methods and tools.	0.6947	2	3
Limited written communication resources for the project.	0.6386	4	13
Technical errors of written communication tools.	0.6632	3	9
RII Mean Value			0.6737

Though it was somewhat influential, the most prominent cause of the study that weakening the written communication and affects the contractor’s QS’s post-contract works was the consultants’ inability to provide timely instructions and approvals to the contractor (RII=0.7474). Subsequently, the consultant’s poor awareness of contractual provisions, terms, and related clauses and the use of the oldest documentary/ record-keeping methods and equipment with equal RII values (RII=0.6982) also rated high.

Though Odine (2015), as well as Agarwal and Garg (2012), have identified personal disabilities (RII=0.4737) as a cause of weakening the communication process in the construction industry, this study elaborates its least impact for poorly written communication in ABC construction company.

According to the mean RII values obtained through the analysis, the “communication tools related causes” category can be identified as the highest influential category with 0.6737 RII mean value causes poorly written communication that hampers the post-contract work of ABC company’s contractor’s QSs. The second most influential category was the consultant-related causes category.

Conclusions

According to the findings, the most significant contractor-related cause, subcontractor related cause, consultant related cause, client-related cause, and communication tools related cause for ABC construction company’s written communication weaknesses are lack of understanding of contractual provisions, terms and related clauses, inability to follow the contractual clauses, terms, and provisions, delay in providing instructions and variation approvals to the contractor, unable to follow contractual provisions, terms and related clauses, and using oldest documentary/ record-keeping methods and equipment respectively. Among them, the most prominent reason for the lack of effective written communication at ABC construction company was the “delay in providing instructions and variation approvals to the contractor”. Due to the fact, the contractor’s quantity surveyor of ABC construction company may not be possible to make variation claims on time. Therefore, it’s the responsibility of the Consultant (The Engineer) to provide timely instructions and approvals to improve the effectiveness of the written communication process of ABC construction company.

In addition to consultant related causes, communication tools related causes category substantially influences the poorly written communication. It is therefore worthwhile to the organization to pay attention to the new communication tools and strategies being

implemented by incorporating new technology. Though this result is common to ABC construction company, it may not be the case for other organizations. Therefore, a deep investigation with the support of wider context is required to generalize the findings.

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