REVISITING CAUSES OF DISPUTES: PERSPECTIVES OF PROJECT PARTICIPANTS, PHASES OF PROJECT AND PROJECT CHARACTERISTICS

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ABSTRACT

Dispute management is a proactive way to avoid disputes beforehand and resolve them effectively once disputes have materialised. Thus, dispute management should begin at early stage of project where different project characteristics are originated. On this note, the current research revisits the causes of disputes from different perspectives; project phases, project participants, and project characteristics. A comprehensive literature review was carried out by referring key research papers and books in the areas of disputes and related issues. Firstly, a total of 50 causes were identified and analysed using frequency count in order to identify the significant causes of disputes. Secondly, those causes were sub-themed into project participants, phases of project and project characteristics. The research revealed that the causes of variations, inadequate/incomplete drawings and specifications and payment delays are the most significant causes of dispute. Further, the research found that contractor is responsible for the variations and poor quality of work during construction stage of a project. The consultant is responsible for inadequate/ incomplete drawings and specifications which occur during design and tendering stages. Client mainly responsible for payment delays during construction stage of a project and scope changes throughout the project. Thus, the identified causes have further clustered under project phases and responsible parties. The consultant, contractor, and client are contributing to disputes in terms of 11, 7 and 6 numbers of causes respectively. The study found that there is link between the key project characteristics and causes of dispute. Thus, the research identified around eight key project characteristics have influenced in certain causes of disputes. Thus, the review concludes that the disputes need to be addressed in every stage of construction project and by each party to contract. In addition, the review recommends that there is possibility to manage disputes through the view point of project characteristics at the early stage of construction projects.

Keywords: *Causes; Dispute; Project Parties; Project Phases; Project Characteristics.*

1. INTRODUCTION

As evidenced in the range of studies, disputes are prevalent in today's complex and competitive construction environment. For example, Cheung and Yiu (2006) highlight that the likelihood of dispute occurrence in traditional complex projects is almost equal to 1.00. Therefore, Chong and Zin (2012) indicated that conflicts being unresolved between parties result in disputes in construction projects. Moreover, construction disputes vary in nature, size and complexity, though they all have a common threat. Disputes are costly both in terms of time and money and often affect the working relationships between construction parties (Farooqui and Azhar, 2014). Kumaraswamy (1997) is of the opinion that the relationship between disputes and construction stakeholders are two directional: construction involves many stakeholders and the actions of those stakeholders could lead to conflicts and disputes in construction projects. On the other hand, conflicts and disputes arise due to other reasons affect the performance of the main stakeholders such as clients, consultants, contractors and subcontractors. On a different note, Cakmak and Cakmak (2013) indicated that contractors are mostly responsible for disputes in construction projects.

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Disputes remain as a challenge in the construction industry with the potential danger of project failures in terms of cost and time overruns, and litigation (Cheung and Yiu, 2006; Kassab *et al*., 2010). On a similar note, Cakmak and Cakmak (2013) indicated that disputes are one of the main causes, which prevent the successful completion of the construction project. As the disputes are often lengthy, complex and expensive to resolve, they can cause long term damage to the commercial relationship between the parties (Thobakgale *et al*., 2014). Further, Thobakgale *et al*. (2014) pointed out that the owner may suffer significant loss of profit and worst still the project may be abandoned. Farooqui and Azhar (2014) stressed that when construction disputes are not resolved in a timely manner, it becomes very expensive in terms of finances, personnel, time, and opportunity costs. Authors further explained the expenditure that visible expenses for attorneys, expert witnesses, the dispute resolution process itself, alone are significant. The less visible costs like company resources assigned to the dispute, lost business opportunities and the intangible costs such as damage to business relationships, potential value lost due to inefficient dispute resolution are also considerable.

These range of negative effects stressed researchers to investigate the causes of dispute in order to minimise/manage them systematically. Over the years, many researchers have studied the causes of disputes in different perspectives. For example, Kumaraswamy (1997) investigated root and proximate causes of disputes. Cakmak and Cakmak (2013) classified the causes into several major categories owner related, contractor related, design related, contract related, human behaviour related, project related and external factor related. In Pakistan, Farooqui and Azhar (2014) sought to determine the causes in terms of construction related, financial/economical related, management related and contract related. However, the researchers have less considered the disputes in the perception of management; thus disputes still persist in construction project. Therefore, the research tends to identify the significant causes of disputes and clusters the causes in terms of responsible parties, project phases and project characteristics in order to manage them at the early stage of construction project.

2. RESEARCH METHODOLOGY

According to Fink (1998), literature review is a systematic, explicit, and reproducible design for identifying, evaluating, and interpreting the existing body of recorded documents. Literature review usually aims at two objectives: first, they summarize existing research by identifying patterns, themes and issues. Second, this helps to develop theory (Harland *et al.,* 2006). In this way, the current research reviews the causes of disputes in order to categorise them in different perspectives. Initially the research sought to review the articles related to disputes and the related issues to identify the background of the study. Then, the research investigates the causes of disputes in different perspectives; project parties and stages of project, and project characteristics.

A comprehensive literature review was carried out by referring journal, conference proceedings, books and other reliable sources published in the areas of disputes and related issues such as of causes and effects of disputes, and disputes management. Particularly, the research focuses on the articles, which fall in the span of last two decades. A total of fifty (50) causes were identified and significant causes were sorted using frequency count. The causes were further clustered in terms of project parties, project phases and project characteristics.

3. CAUSES OF DISPUTES

Inevitably, disputes are a reality on every construction project (Steen, 2002). Many researchers have sought to investigate the causes of disputes. Accordingly, Carmichael (2002) and Steen (2002) identified that causation of disputes may fall under three major categories namely: organisational, contractual and technical. Organisational interpreted as increased project complexity has resulted in varying forms of contract, each with varying interfaces where misunderstandings occur giving rise to dispute. Contractual includes the causes of extension of time, liquidated damages, variations, loss and expense, payment, late deliverables, adverse weather and alike while technical comprises poor/incomplete design, workmanship, material selection and alike. On a different note, Mitropoulos and Howell, (2001) addressed the causes of disputes in terms of uncertainty, contractual problems and opportunistic behaviour.

Love et al. (2008) mentioned that one of the key factors that contribute to dispute is unfair risk allocation and poor risk management. Inappropriate risk allocation through disclaimer clauses in contracts is a significant reason for increasing total construction costs. The most common exculpatory clauses used in construction are Uncertainty of work conditions; Delaying events; Indemnification; Liquidated damages; and Sufficiency in

contract documents (Zaghoul and Hartman, 2003). Architects specifically lack procedures to control the design process and generally do not implement activities that assure conformance. As a result, design related documentation produced often contains errors and omissions and often leads to contractual claims and disputes. Love *et al*. (2008) mentioned that poor documentation can lead to rework, a delay, and claim for loss and expense by the contractor and subcontractor. Errors can arise because of poor knowledge, carelessness and negligence, and intent of the professionals. A lack of professionalism by design professionals because of reduced design fees can result in inadequate contract documentation being produced, and therefore lead to rework that manifests as a lack of professionalism and may eventually emerge in a dispute (Kumaraswamy, 1997).

In general, interpretation error and misunderstanding of contract terms or clauses can happen. These issues result in disagreements between the contracting parties on their contractual rights and responsibilities. On a similar note, Chan and Suen (2005) mentioned that even though an internationally accepted standard forms FIDIC is used, different interpretations by various parties from the two legal systems, Common Law and Civil Law, may cause misunderstanding and this could way to disputes. Armes (2011) added that misunderstandings about obligations arise from erroneous contract interpretation, or perhaps the documentation has not been clearly drafted. Issues about progress and quality frequently arise and may originate from the different aims each party to the contract will have.

Thus the literature evidenced that there have been considerable researches undertaken to determine the causes of disputes in the construction industry. Although researchers have widely addressed causes of disputes, still disputes exist in construction projects. In this context, it is necessary to address the causes in terms of different perspectives. Thus, the following sections of the paper review the causes of disputes under project parties, stages of project, and project characteristics. Firstly, the current research tends to identify the significant causes of disputes.

3.1 SIGNIFICANT CAUSES OF DISPUTES

This section of the paper furnishes the causes of disputes with the frequency count. A total of 15 key research papers discuss on causes of disputes have been selected for this study. Table 1 shows the top 20 causes of disputes with the frequency count and the respective sources.

Table 1: Significant Causes of Disputes

Causes of Disputes	Frequency Count	Sources
Variation initiated by owner/scope changes	11	[1], [3], [6], [8], [9], [10], [11], [12], [13], [14], [15]
Inadequate/incomplete specification and drawing	11	[1], [3], [6], [8], [9], [10], [11], [12], [13], [14], [15]
Payment delays	11	[1], [3], [6], [8], [9], [10], [11], [12], [13], [14], [15]
Unclear and unfair risk allocation	10	[1], [2], [3], [6], [7], [8], [9], [10, [12], [15]
Poor communication	10	[1], [2], [3], [6], [7], [8], [9], [11], [12], [15]
Poor quality of work	7	[1], [2], [3], [4], [6], [10], [12]
Ambiguities in contract document	7	[1], [3], [5], [7], [9], [11], [12]
Different interpretation of contract provisions	7	[2], [3], [6], [7], [8], [10], [15]
Site conditions	7	[1], [3], [8], [9], [10], [12], [15]
Unrealistic time targets	6	[3], [6], [7], 10], [11], [12]
Design errors	6	[1], [3], [8], [9], [10], [15]
Poorly done planning and scheduling	5	[7], [10], [12], [13], [15]
Unstable financial status of client	5	[1], [4], [7], [8], [13]
Negligence/lack of professionalism	5	[1], [6], [7], [8], [10]
Inadequate contract administration	5	[1], [7], [8], [9], [12]
In competent contractor	5	[1], [4], [6], [12], [13]
Unavailability of information	5	[2], [3], [8], [10, [15]

Inappropriate selection of procurement method	5	[2], [7], [8], [10], [11]
Legal and economic factors	5	[1], [2], [3], [7], [12], [20]
Inadequate brief	4	[1], [5], [8], [15]

[1] Acharya and Lee (2006); [2] Armes (2011); [3] Cakmak and Cakmak (2013); [4] Colin *et al* (1996); [5] Cheung and Pang (2014); [6] Cheung and Yiu (2006); [7] Farooqui and Azhar (2014); [8] Khahro and Hussain Ali (2014);); [9] Kumaraswamy (1997); [10] Love *et al* (2010); [11] Mitropoulos and Howell (2011); [12] Na Ayudhya (2011); [13] Odeh and Battaineh (2002); [14] Yiu and Cheung (2007); [15] Waldron (2006)

Table 1 shows the top most causes of disputes with the respective frequencies out of 15 references. Accordingly, causes of changes to initial scope, inadequate/incomplete specification/drawing and payment delays are identified as most significant factors, which lead to disputes. The authors (Love *et al*., 2010) indicated that frequent changes to scope lead to cost and time overruns and thereby cause disputes. Most change orders that occur are at the request of the client and are generally in the form of design changes (Sinha and Wayal, 2013). However, Sinha and Wayal (2013) pointed out that changes to scope occur not only due to client but also due to stakeholder needs, physical location and the prevailing economic environment.

Inadequate/incomplete specification and drawing is considered by many of the authors. Design issues can lead to delays and additional costs that become the subject of disputes. Often no planning or sequencing is given to the release of design information, which then impacts on progress of work; ultimately it affects the quality of product in the long run. In addition, Love *et al*. (2006) stated that errors in drawings and specification can arise because of poor knowledge, carelessness and negligence of consultant. Poor knowledge is often a result of insufficient education, training, and experience. Many design firms, fail to undertake design audits, verifications and reviews of the documents that they produce prior to tendering, which increase the possibility of errors.

As per Table 1, many of the researchers have concluded that payment delays contribute to disputes in projects. For example, Na Ayuldhya (2011) found that payment delays as one of the most significant causes of disputes in domestic funded projects of Thailand. In addition to that, some authors ascertained the causes of dispute in the UK construction industry, it was indicated that payment problem contribute significantly to dispute in the industry. The integral parts of payment problem originated from many issues: additional work, over budget, basis of fee, additional fees, non-return of retention money, liquidated damages claimed by client, extension of time costs and expenses claimed by contractor, non-payment of balance of contract sum to subcontractor, non-payment of interim payment to subcontractor, non-payment of interim payment to contractor, variation claim by contractor. On the other hand, the researchers such as Chan and Suen, (2005) highlighted that payment issues lead to disputes and subsequent suspension and termination of projects. The authors found that issues of payment as one of the major causes for disputes in the construction industry. In addition, Sheridan (2003) stated that the payment related matters of valuation of variations and final accounts, and failure to comply with payment provisions, are the major subject matters for disputes in construction project adjudication proceedings.

Love *et al*. (2008) mentioned that one of the key factors that contribute to dispute is unfair risk allocation and poor risk management. Inappropriate risk allocation through disclaimer clauses in contracts is a significant reason for increasing total construction costs. As mentioned earlier, the exculpatory clauses of Uncertainty of work conditions; Delaying events; Indemnification; Liquidated damages; and Sufficiency in contract documents are leading to unfair risk allocation in construction contracts. On a different note, in an attempt to examine the causality of disputes, Kumaraswamy (1997) sought to determine the root and proximate causes. The author identified unfair risk allocation as one of the root causes of disputes. Poor communication is identified as significant cause with the frequency of ‘10’. The review revealed that Poor quality of work, Ambiguities in contract document, Different interpretation of contract provisions, Site conditions are considerably significant causes with the frequency of ‘7’. In general, interpretation error, misunderstanding of contract terms or clauses and ambiguities in contract document often happen in projects. Though the standard forms of bidding document used, issues exist in some places. However, consultant is responsible for such document issues while contractor might be in a position to suffer due to the misunderstanding of clauses.

Thus, this section identified the significant causes of disputes. The finding revealed that the different parties; client, contract, and consultant are responsible for different causes. Therefore, the section tends to cluster the range of causes in terms of project parties and project phases.

3.2 CAUSES OF DISPUTES - PERSPECTIVE OF PROJECT PARTIES AND PROJECT PHASES

This section of the paper presents the causes of disputes in terms of project parties and phases of project. Thus, Table 2 clusters a total of twenty (20) significant causes identified in previous section under parties responsible and stages of construction project.

Table 2: Causes of Disputes - Perspective of Project Parties and Project Phases

		Inception	Design	Tendering	Construction
Client	**Unique**				▪ Payment delays ▪ Unstable financial status of client
	Common	▪ Variation initiated by owner/scope changes ▪ Poor communication ▪ Unrealistic expectations/ time targets ▪ Negligence/lack of professionalism			
Consultant	**Unique**	▪ Unclear and unfair risk allocation ▪ Inappropriate selection of procurement method ▪ Inadequate brief	▪ Design errors ▪ Inadequate/ incomplete specification and drawing	▪ Unclear and unfair risk allocation	▪ Payment delays due to delay in evaluation of completed works
	Common			▪ Ambiguities in contract document ▪ Different interpretation of contract provisions ▪ Unavailability of information	
		▪ Poor communication ▪ Negligence/lack of professionalism			
Contractor	**Unique**				▪ Variations/ scope changes ▪ Poor quality of work ▪ Poorly done planning and scheduling ▪ Inadequate contract administration ▪ In competent contractor
	Common			▪ Poor communication ▪ Negligence/lack of professionalism	
External Factors	**Unique**				▪ Site conditions
	Common	▪ Legal and economic factors			

This reveals that all three parties namely; contractor, client and consultant are contributing to disputes in different stages of the project. Some of the causes identified fall under external factors. Four major project stages such as inception, design, tendering and construction are considered in the classification. The causes; poor communication and negligence/ lack of professionalism are identified as responsible by all three parties throughout the construction project. The Table further portrays that consultant contributes more to disputes while client and contractor are responsible for less number of of the causes. The parties; consultant, contract and client are responsible for 11, 7 and 6 number of causes respectively.

As the consultant involves from the inception stage of project, the consultant contributes to disputes in various ways. For example, during the inception stage the consultant responsible for the causes of inadequate brief, unclear and unfair risk allocation, inappropriate selection of procurement method. During design stage, consultant is responsible for the causes of inadequate/ incomplete specification and drawing, unclear and unfair risk allocation, ambiguities in contract document, different interpretation of contract provisions and unavailability of information. The document such as drawing, specification, and tender document related problems occur due to consultant in tendering stage. In construction stage, consultant contributes to disputes due to payment delays due to delay in evaluation of completed works, inadequate/ incomplete specification and drawing, ambiguities in contract document, different interpretation of contract provisions and unavailability of information. Among those causes, according to the Table, payment delays considered as most significant contributory factor.

As per traditional arrangement, contractor involvement starts from the tendering stage. However, contractor causes to disputes during the construction phase in terms of variations/ scope changes, poor quality of work, poorly done planning and scheduling, inadequate contract administration, and in competent contractor. Out of these causes, poor quality of work is the 6th significant cause for dispute occurrence. Table 2 reveals that the client contributes less to disputes than contractor and consultant. Client contributes to disputes due to six (06) numbers of causes such as payment delays, unstable financial status of client, variation initiated by owner/scope changes, poor communication, unrealistic expectations/ time targets and negligence/lack of professionalism. Though the client less contributes to dispute in terms of number of causes, he is responsible for most of the top significant causes such as variation initiated by owner (1st) and payment delays (3rd).

In addition to parties to contract, the external factors also cause disputes in projects. The external factors include weather changes, site conditions, major accidents, environmental pollution, unexpected social event, bureaucratic/ delay in approvals, uncertainty, task interdependency, inflation and alike. Among these factors, site conditions and legal and economic factors marked as most significant causes of disputes.

3.3 CAUSES OF DISPUTES - PERSPECTIVE OF PROJECT CHARACTERISTICS

The ultimate goal of the project participants is successful delivery of project which is often influenced by the project characteristics (Cho, Hong, & Hyun, 2009). On this note, the researchers (Alhazmi and McCaffer, 2000; Love *et al*., 1998) sought to identify the project characteristics over the years. The authors found a range of project characteristics such as project type, project size, project cost, project duration, time constraints construction method, site factor, risk factor, usage of technology, degree of flexibility, degree of complexity, payment method, project funding method and procurement method.

Walker (1995) suggested that project scope as a useful predictor for project duration which is an indicator to measure the project success. On the other hand, many researchers indicated that the attributes used to measure project scope are type of project, nature of project, number of floors of the project, complexity of project, and size of project (Akinsola *et al*. 1997; Dissanayaka and Kumaraswamy 1999; Kumaraswamy and Chan 1999).

Chan, Scott, and Chan (2004) found that less complex projects with shorter duration and executed by private and experienced client who is competent on preparing brief and making decision are recorded as successful project. Further, Chan *et al*. (2004) added that the projects executed in a stable environment with developed technology together with an appropriate organization structure, and having a competent and experience team leader are also registered as success factors. Thus, Chan *et al*. (2004) confirmed that the project characteristics of degree of complexity, duration, project management, and technology are influencing in success of the project.

In contrast, Ojo (2012) found project characteristics as major causes of inaccurate cash flow prediction which makes it exposed to more risk, and the extent of its impact is a major concern to the construction disputes. On this note, Alhazmi and McCaffer, (2000) suggested that project characteristic should be considered in every stages of project.

In terms of complex projects, Motsa (2006) stated that the complex projects are likely to have more ramifications when a change is made. In addition, the author opined that complex projects require additional time for designing than usual projects. The time allocated for the designing of usual project is not enough for a complex project and therefore it requires number of addenda and creates frequent errors in projects. Thus, shorter period allocated for design may lead to disputes in construction projects.

In terms of size of the project, Hall (2002) suggested that large project involves a range of people, drawings, thoughts, and ideas. Consequently, larger project tends to experience more errors. In support of this, researchers identified that errors cause disputes in construction projects (Love *et al.*, 2010; Cakmak and Cakmak, 2013; Kumaraswamy, 1997). Thus, Cakmak and Cakmak (2013) found that disputes occur due to design related errors in terms of design errors, incomplete specifications, poor quality design, unavailability of information, and ambiguity in documents.

On a different note, Ashworth (2006) suggested that large projects are subjected to time and cost overruns. According to Ren, Anumba, and Ugwu (2003), a contractor demands his entitlement by asking for extension of time and addition cost incurred when there are time and cost overruns. Once client disagree with contractor's claim, disputes arise in a construction project. On a similar note, many of the researchers indicated that cost and time overrun could lead to disputes, arbitration, and even total abandonment of project (Rahman *et al.*, 2008; Enshassi *et al.*, 2008).

In terms of procurement method, the traditionally procured projects experience more disputes, while partnering and alliancing provide less prospects for disputes. Cheung (1999) suggests that the use of partnering and alliancing create team building and harmony, and thereby prevent disputes. Both partnering and alliancing emphasise on early association of key stakeholders including clients, contractors and consultants in decision making process.

The foregoing indicates that the disputes have potential to relate with project characteristics. Thus, Figure 1 summarises the findings on causes of disputes in terms of project characteristics.

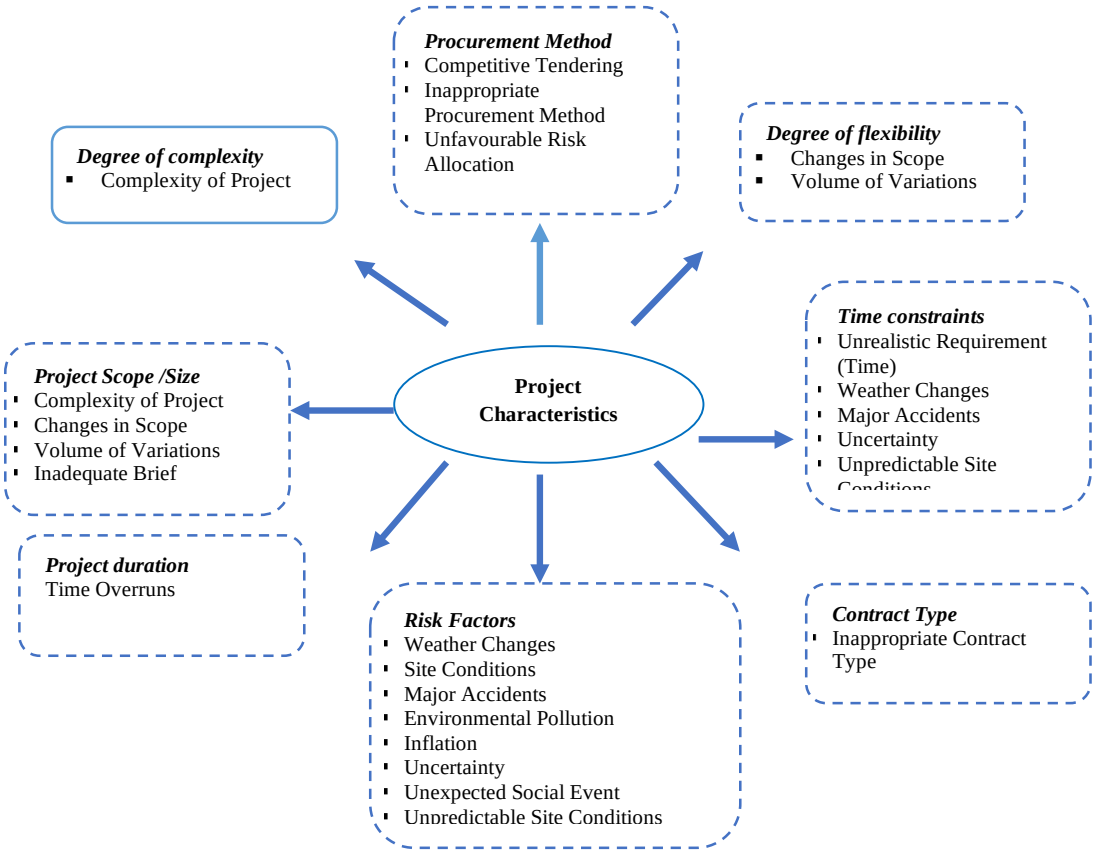

Figure 1: Causes of Disputes - Perspective of Project Characteristics

Figure 1 portrays the key project characteristics along with the possible causes. A total of twenty four (24) causes are identified under eight key project characteristics. Among those possible causes, a total of seven (07) are found to be significantly contributing to disputes as depicted in section 3.1. They are inappropriate procurement method, unfavourable risk allocation, changes in scope/variation, inadequate brief, site conditions legal and economic factors and unrealistic requirement (time). In addition, the causes of inappropriate procurement method, unfavourable risk allocation and inadequate brief occur during the early stages (inception stage) of a construction project as stipulated in Table 2. Thus, the review provides a way to consider

management of disputes during the early stage of a construction project by addressing the significant causes with the focus of project characteristics and project parties.

4. CONCLUSIONS

Disputes are not uncommon in today's complex and competitive construction environment. Disputes are associated with distinct justifiable issues and require to be managed. Failure to address disputes result in minor issues to fester and grow, often with negative consequences for project participants. Such effects are in many folds starting from cost and time over run to abandonment of project. As an initial step to manage, this study identified the significant causes of disputes and investigated the causes with the focus of project participants, project phases and project characteristics.

A comprehensive literature review is carried out referring reliable publications in the area of disputes and the related issues in a systematic way. The research identified a total of fifty (50) causes of disputes through the initial review. Further, the review sorted 20 top significant causes of disputes. Among those, variation initiated by owner/scope changes, inadequate/incomplete specification and drawing and payment delays are identified as most significant causes of dispute with the frequency of 11 out of 15. Scope changes and payment delays occur due to client whereas consultant is responsible for inadequate/incomplete specification and drawing. Therefore, the research further investigated the causes in terms of project parties and project phases. Thus, the causes were again clustered under project parties and project phases. The classification revealed that the client, consultant, and contractors are responsible for a total of 6, 11 and 07 respectively. In addition, the research further found that the project characteristics have a relationship with causes of disputes. For example, the causes of inappropriate selection of procurement method and unfair risk allocation have been identified under the project characteristic, procurement method. Thus, the possible causes were categorised under key project characteristics. Finally, the research suggests industry practitioners belongs to each parties to seek for effective ways of managing disputes beforehand, with the view point of project characteristics from the early stage of construction project.

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