
FACTORS CAUSING DISPUTE IN CONSTRUCTION INDUSTRY: CONTRACTORS' PERSPECTIVES

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ABSTRACT

Construction dispute contributing to the involvement of billions US dollars in lawsuits and Asia was reported as the continent that had the highest dollars involved. Sarawak, the largest state in Malaysia, faced similar issues and such dispute had been reported in leading to cost and time overrun on the multiple large-scale construction projects. This research investigates factors causing dispute within Sarawak construction industry, by targeting G7 contractors, who has no limitation in handling the scale of project, by using simple random sampling method. Eighty-six contractors responded to the online questionnaire, amounting to 34% valid response rate. Descriptive statistics and Mann-Whitney U-test were used to investigate the viewpoint of respondents. The findings revealed that delay issue as the key cause of dispute to the contractors in Sarawak. Mann-Whitney U-test showed statistical significant differences on the perspectives of contractors between less than or equal to 10 years working experiences and more than 10 years experiences on four causes: poor cost management, finance issue, delay issue and different interpretation of contract provisions. This research could serve as a guideline for the contractors in handling dispute to improve construction companies' profit margin and construction projects' efficiency.

Keywords: Causes; Contractors; Construction Industry; Dispute; Sarawak

1. INTRODUCTION

The complexity of the construction projects and continuous expanding nature of construction industry involved a large number of stakeholders, which frequently leads to a change of project scope and hence resulted in dispute (Fatima et al., 2019; Lukhele et al., 2021), and the number of construction dispute cases increased over the years especially during the Covid-19 pandemic (Arcadis, 2022). Construction disputes lead to the loss of profit and time delays of construction projects (Mashwama et al., 2016), which further influenced the global market, includes Asia, Middle East, Europe and United Kingdom (UK) (Allen, 2016). In 2015, the length of construction dispute in Asia increased from 12 months to 19.5 months, from 18 months to 18.5 months in Europe, and from 10 months to 10.7 months in UK, compared to the previous year (Allen 2016). The average dispute values was reduced by 3% globally from 2020 to 2021, yet still record a comparatively high level to the years prior to 2020 (Arcadis, 2022). Moreover, statistics had shown that Asia had the highest average construction dispute values of USD 84 million, followed by Middle East, UK and Continental Europe, with the average dispute values of USD 56 million, USD 34 million and USD 19 million respectively in 2019 (Best, 2020). To make the situation worse, more than 700 contention dispute cases filed with the Asian International Arbitration Centre (AIAC) in 2021, amounted to almost USD 317 million (Ding, 2022).

In Malaysia, cost and time overrun were the associated issues of construction dispute (Shehu et al., 2014). This affects the country's economy as Malaysia is a developing country, and the new construction projects alone contributed to around 6% of the country's Gross Domestic Product (GDP) (Hadi et al., 2018). Sarawak, the largest state in Malaysia, ranked at the third highest state contributed USD 747 million (i.e. RM 3.3 billion) construction projects among a total of USD 7.2 billion (i.e. RM 31.7 billion) Malaysian construction projects in 2020 (DSM, 2021). Although the increasing spending on construction projects accelerated job opportunity for contractors, such growth is affected by the frequentness of disputes due to contract ambiguities and late payments (Ding, 2022).

Dispute occurred within Sarawak construction industry. For example, the Construction Industry Development Board (CIDB) sued a construction firm for the outstanding levies of a solar hybrid project that worth USD 373,400 (i.e. RM 1.65 million), due to the fact that such project is over USD 113,240 (i.e. RM 500,000) (Bernama, 2021). Dispute arose between timber supplier and construction company over a major infrastructure project (i.e. Pan Borneo Highway) in 2020, due to the void of a joint venture agreement (Aziz, 2020). Some of the construction dispute cases that occurred in Sarawak may cause time and cost overrun issues in construction activities. The construction of new drainage outlet for storm water discharge that worth USD 1.59 million (i.e. RM 7 million), faced two years delay, which extended its completion time from January 2019 to January 2021 (Aubrey, 2021). Such Extension of Time (EoT) claims could possibly create issues such as limited allowable time extension period, inadequate efforts to mitigate delays, failure of contractors in adhering to contractual requirements, eligible of EoT claims and concurrent delay (Yusuwan et al., 2021).

It is undeniable that the dispute arose could affect the project efficiency, in both small and large scale projects. The construction dispute could also cause time delays, loss of professional reputation, breakdown in cooperation between parties, loss of profitability and loss of business viability (Mashwama et al., 2016). To mitigate such issues, Construction Industry Payment and Adjudication Act (CIPAA) had been implemented in Kuching, Sarawak to encourage professionalism amongst construction parties; remain the parties involved in dispute confidential; and ease the cash flow of the contractors (Hadi et al., 2018). However, the standard form of construction contract had found to be ineffective in preventing and resolving the construction disputes in more than one-third of the construction projects across Malaysia (Nee et al., 2014). Therefore, it seems essential to identify the causes of dispute to ensure the effectiveness in resolving dispute.

In Sarawak, there are a few major large-scaled construction projects which expected to be completed in the next five years. For examples, the USD 4.5 billion (i.e. RM 18.992 billion) Pan Borneo Highway project would be finished in 2022 for the part in Sarawak (Bernama, 2020; Povera & Yunus 2020), the USD 105.7 million (i.e. RM 467 million) Bintulu-Jepak Cable-Stayed Bridge project is expected to be completed in 2023 (Yussop, 2020), and the USD 1.4 billion (i.e. RM 6 billion) Second Trunk Road project aims to complete in 2025 (Sarawak Government, 2020). Having a thorough understanding on the causes of disputes in Sarawak construction industry could ensure the ongoing large scaled construction projects be completed successfully in the near future. Hence, this paper aims to investigate the critical causes of disputes in Sarawak construction industry.

2. LITERATURE REVIEW

The word "dispute" could be defined as "the assertion of a claim by one party and repudiation thereof by another" (Khekale & Futane, 2015). Mahamid (2016) further elaborated dispute as argument occurred which could not be managed between parties. The meaning of "dispute" was further being argued to have similar meaning with "conflict", which need to be further resolved in order to prevent further dispute (Farooqui et al., 2014; Zant, 2020). This paper defined dispute as the claim of one party repudiated by another party which caused the unmanageable argument between parties.

A review of the literature found that studies had been conducted in relation to the strategies to reduce and/or resolve dispute. Chong and Zin (2012) found that negotiation and mediation were the most preferred Alternative Dispute Resolution (ADR) methods in Klang Valley, Malaysian construction industry, and adjudication was the most unpopular ADR method. Elziny et al. (2016) supported that Disputes Resolution Expert Manager (DRExM) was an alternative for resolving construction disputes in Egypt instead of litigation and arbitration. Abdul-Malak and Senan (2020) conducted a study in UK to evaluate the effectiveness of adjudication in construction dispute resolution. The authors found that the whole adjudication process in construction with an average of 42 days for 90% of actual referred disputes which was more time saving, compared to the duration stated under the FIDIC conditions of contracts, which aims to resolve dispute within 84 days.

However, studies had been conducted on the effectiveness of the dispute resolution methods and the causes that affect its effectiveness. In Hong Kong, Yiu and Lee (2011) concluded that the personality traits such as conscientiousness, openness and extraversion could bring positive effects during the construction dispute negotiations. However, the incorporation of Building Information Modelling (BIM) in construction dispute resolution process in UK challenged on model manipulation, lack of information for model creation, experience domination in litigation systems, lack of experimental supports, reliability issue, complexity issue, novelty of BIM for foreign purposes and resources requirement (Soltani et al., 2017). Rahmat and Rahim (2018) concluded that the use of mediation to resolve construction dispute in Malaysia was still in premature stage, but it was suitable for the small and low value construction projects if the conventional negotiation method failed. Ng, Ismail and Hashim (2019) found that the application of fast track arbitration was low and ineffective in resolving construction dispute in the Malaysian construction industry, due to lack of practices, lack of awareness and lack of encouragement. Cheung et al. (2020) stressed that apology could be valuable in the construction dispute negotiation in Hong Kong, but stakeholders need to understand the barriers in negotiation, evaluate the effectiveness of apology in overcoming the barrier, choose the most appropriate apology and apply the apology at suitable timing.

It seems to imply that such dispute resolutions have flaws and the identification on causes of disputes would be essential. Chua (2012) conducted a study in Malaysia and Singapore and identified that the top three causes of construction dispute were finance and payment issue, disagreement on claims and variation orders. Cakmak and Cakmak (2014) conducted a literature review and identified 28 causes of dispute in construction industry and grouped them into seven categories (owner related, contractor related, design related, contract related, human behavior related, project related and external factors). The authors used analytical network process analysis and concluded that the most important causes of disputes were delays in work progress, EoT, inadequate specifications, quality of design and design errors. Farooqui et al. (2014) discussed the key causes of disputes in the Pakistani construction industry and grouped 31 causes of disputes into four categories, namely, construction related, financial related, management related and contract related. Mahamid (2016) studied the disputes causes in residential building projects in Saudi Arabia with 120 contractors, and identified that the top three dispute causes were delay in progress payment by owner, unrealistic contract duration and change orders. Ekhatior (2016) discussed the causes of disputes in the Nigerian construction industry by recruiting 129 respondents (i.e. clients, contractors and consultants) and found that changes of scope that increase consequential costs beyond initial cost was the key cause of disputes. Equbal et al. (2017) conducted a study in Uttar Pradesh, India with 70 respondents (owner, contractor and architect) and found that the top two causes of dispute were finance and payment issue, and poor work quality.

Vo et al. (2020) conducted a study with 117 construction stakeholders (e.g. design consultants, contractors, owners and project managers) in Vietnam to identify the factors affecting construction project disputes and grouped the 26 factors into six categories (i.e. behavior factors, working method and conditions, contractual factors, construction technical factors, factors related to cost and factors related to work experience). El-Sayegh et al. (2020) studied the sources of construction disputes in United Arab Emirates (UAE) construction industry and identified 27 sources with variations initiated by the owner, obtaining permit from the municipality and material change and approval during the construction phase, as the most important sources. In Sri Lanka, Edirisinghe et al. (2020) identified 53 causes of disputes in the construction industry and grouped into seven categories (owner related, contractor related, design related, contract related, human behavioural related, project related and consultant related), and found that the genesis of disputes were lack of appropriate communication between parties and lack of team spirit.

Table 1 showed the 25 causes identified from the literature review. The causes were grouped into four categories, namely, management related, financial related, construction related and contract related, which followed the previous study conducted by Farooqui et al. (2014).

Table 1. List of identified causes from literature review

Category	Causes	1	2	3	4	5	6	7	8	9
Management Related	Poor Time Management	√		√	√	√	√	√	√	√
	Poor Site Management		√	√		√	√			
	Poor Quality Management		√		√			√	√	√
	Poor Cost Management				√		√	√	√	
	Poor Communication	√		√	√	√	√	√	√	√
Financial Related	Payment Issue	√	√	√	√		√	√	√	√
	Finance Issue		√	√	√	√	√	√	√	√
	Changes in the Economic Situation	√	√	√	√					√
Construction Related	Work Change Orders	√	√		√	√	√	√	√	√
	Unrealistic Expectations	√	√	√			√	√		√
	Unforeseen Site Condition		√		√	√	√	√	√	√
	Unable to Perform Task		√	√		√	√	√		√
	Lack of Experience	√					√	√		
	Incomplete Information	√	√		√	√		√	√	√
	Inclement Weather	√	√		√	√			√	√
	Failure in Sublet of Contract		√	√			√			
	Delay Issue	√	√	√	√	√	√	√	√	√
	Adversarial Relationship between Contractors	√				√		√	√	√
Contract Related	Unrealistic Tender Pricing			√			√			√
	Unfair Risk Allocation			√	√		√	√	√	√
	Poorly Written Contracts		√		√	√			√	
	Different Interpretations of the Contract Provisions		√	√			√	√		√
	Disagreement on Claims			√			√	√	√	
	Breaches of Contracts	√	√	√						
	Ambiguous Contract Languages	√		√			√	√		√

Source: [1] = Vo et al. (2020), [2] = Mahamid (2016), [3] = Farooqui et al. (2014), [4] = Equbal et al. (2017), [5] = El-Sayegh et al. (2020), [6] = Ekhaton (2016), [7] = Edirisinghe et al. (2020), [8] = Chua (2012), [9] = Cakmak and Cakmak (2014)

3. METHODOLOGY

This research adopted quantitative method similar as previous studies done by Vo et al. (2020), Mahamid (2016) and Farooqui et al. (2014). This research aims to investigate the perceptions of G7 contractors on the causes of dispute in Sarawak construction industry. Grade G7 contractors were selected as targeted respondents as they could handle larger scale of construction projects, which are more than USD2.3 million (approximately RM 10 million) (Hung, et al., 2016).

Online questionnaire survey was created by using Google Forms and distributed to G7 contractors companies through emails, with fortnightly follow-up to increase the response rate. The list of targeted respondents companies were generated through CIDB database, and further search on the companies' websites were conducted to identify the email addresses of the targeted respondents. This research adopted simple random sampling method. Two hundreds and fifty-four sets of questionnaires had been distributed to the respondents from August 2021 to October 2021, with 86 sets of valid responses returned. Therefore, the valid response rate in this study is 34%.

The questionnaire consisted of two sections. Section A related to the respondents' demographic details such as working places, year of working experience and educational level. Section B asked the respondents to choose the importance of variables by using six-point Likert scale, with 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, and 6 = strongly agree. Six-point Likert scale was adopted to ensure the accuracy of the variables (Losby & Wetmore, 2012).

This research adopted both descriptive statistics and Mann-Whitney U-test as the data analysis methods. Descriptive statistics were used to analyse the background of the respondents in terms of frequency, and the mean

value of the causes of the dispute that being asked in Section B. Mann-Whitney U-test was used to ascertain the existence of the significance difference between the viewpoint of contractors with less than or equal to 10 years working experiences (Group 1), and those with more than 10 years' experiences (Group 2). The p-value of less than 0.05 signifies statistical differences between these two groups (Aghimien et al., 2021). The causes of dispute had a Cronbach alpha value of 0.917, which almost close to one, proving research reliability.

This research did not collect sensitive personal data from the respondents and hence an ethical approval was not necessary. The analysed data presented in this research was non-identifiable for the individuals. The respondents were being informed that the participation was voluntary and no reference to specific individuals made available in the results presentation.

4. FINDINGS AND DISCUSSION

4.1. Background of Respondents

Respondents' background (refer to Table 2) revealed that 94.2% had at least diploma degree, which somewhat indicating their language and education proficiency, and the respondents may be equipped with basic dispute resolution and conflict management knowledge during their tertiary education. Approximately 18% of the respondents have more than 10 years working experiences in the construction industry. Majority of the respondents are from Kuching (32.6%) and Bintulu (31.4%), with minority from other cities: Sibü (16.3%), Miri (9.3%), and Betong, Sarikei, Kota Samarahan, Lubok Antu, Limbang and Lawas (10.4%). This seems to indicate that the responses received were mainly from the opinions contractors in Kuching and Bintulu. However, as Kuching is the capital city of Sarawak with most of the large scale projects, the results seem to be appropriate to provide an overview to Sarawak.

Table 2: Demographic details of respondents

Criteria	Sub-criteria	Percentage (%)
Level of education	SPM and below	5.8
	Diploma	15.2
	Bachelor degree	67.4
	Master degree	11.6
Working experience	Less than or equal to five years	54.6
	6-10 years	27.9
	11-15 years	7.0
	16-20 years	5.8
	More than 20 years	4.7
Workplace location	Kuching	32.6
	Bintulu	31.4
	Sibü	16.3
	Miri	9.3
	Others (i.e. Betong, Kota Samarahan, Lawas, Limbang, Lubok Antu and Sarikei)	10.4

4.2. General information on the dispute condition in Sarawak

Table 3 shows the general information on dispute condition that faced by the G7 contractors in Sarawak. Majority of the respondents (79.1%) ever experienced dispute in construction projects. This seems to indicate on the reliability of the results as most of the respondents could provide opinion based on their experiences.

Table 3: Conditions of dispute

Criteria	Sub-criteria	Percentage (%)
Involvement in dispute	Yes	79.1
	No	20.9
Frequency of dispute	0-5 times	51.2
	6-10 times	33.7
	11-15 times	10.5
	16-20 times	4.7
Involvement of stakeholder(s)	Engineers	70.9
	Quantity surveyors	61.6
	Developers	51.2
	Architects	31.4
	Others (consultants, subcontractors, workers)	7.2
Involvement on type(s) of dispute	Construction-related	70.9
	Financial-related	48.8
	Contract-related	47.7
	Management-related	38.4

The respondents were asked to select the frequency of disputes occurred throughout the entire construction process of a project, and 51.2% of the respondents selected the option of 0-5 times. However, 97.7% of the respondents who selected 0-5 times of dispute occurrence, were the respondents with less than or equal to 10 years working experiences. This may indicate that respondents with lesser years of working experience, may have less involvement in a project and/or involve in project with less complexity.

Majority of the respondents (70.9%) had involvement with construction-related dispute. This seems to be tally with the literature review findings with more causes of dispute identified under this category. Farooqui et al. (2014) supported that stakeholders' viewpoint and practices may lead to construction-related dispute in a project. Memon et al. (2014) further suggested that unforeseen site conditions and changes in specifications are the contributors to construction-related dispute.

4.3. Causes of Dispute

This research identified 25 causes of dispute, and the respondents were asked to rate their level of agreement on each of these causes that contribute to the disputes in their workplace, with the scale of 1 to 6 (1 = strongly disagree to 6 = strongly agree). Table 4 showed the descriptive statistics [i.e. mean, standard deviation (SD) and ranking], and Mann-Whitney U-test results. An overall mean value that above 3.50 indicated that the respondents regarded all causes as contributory factors in the Sarawak construction industry. Most of the SD were above 1.0 yet did not exceeded the ratio of 2:1 (i.e. maximum SD to minimum SD) (Othman et al., 2011), which govern the reliability of the results.

4.3.1. Management-related category

Under the management-related category, "poor communication" was ranked as the top. This finding seems to tally with the previous findings in Singapore, India and Vietnam (Chua, 2012; Equbal et al., 2017; Vo et al., 2020), as the findings revealed poor communication highly contributing to dispute occurrences. It is undeniable that the complexity of the construction industry, which involve multiple stakeholders, such as developers, contractors and engineers, required proper communication, to avoid misunderstanding and disputes. Discrepancy occurs in Turkey as this factor was ranked as last in the study that conducted by Cakmak and Cakmak (2014). This may due to the differences in the culture of Sarawak and Turkish construction industry.

"Poor time management" was ranked as second under this aspect. This seems to imply that time overrun, delay in work progress and probably the failure of contractors in securing EoT from clients, are possibly the key causes of dispute to the contractors. This finding seems to be similar as the findings in Chua (2012), Ekhaton (2016), and El-Sayegh et al. (2020) in Malaysia and Singapore, Nigeria, and United Arab Emirates (UAE) respectively.

“Poor site management” was ranked as third, with an overall mean value of 4.76. This may be due to the fact that the contractors are somewhat responsible to the residents nearby to the construction site, in ensuring that the ongoing construction project would not receive complaints from the residents, in terms of noise (i.e. construction is not allowed to be carried out at night time) and pollution (i.e. proper waste disposal). However, the site management issue seems not regarded as the important cause of dispute as reported in the findings of Farooqui et al., (2014), Ekhtor (2016), and El-Sayegh et al. (2020), in Pakistan, Nigeria and UAE respectively, as all three studies ranked this cause as the least important cause of dispute.

The Mann-Whitney U-test revealed a significant difference between the viewpoints of respondents with working experiences not exceeding 10 years (Group 1) and more than 10 years working experiences (Group 2), on the “poor cost management”, with a p-value of 0.045, which is less than the threshold of 0.05. The more experienced contractors seem to view this cause of dispute as the least contributory factor if compared to the less experienced contractors. There might be a possibility that the more experienced contractors take cost overrun, such as rising material cost and unforeseen circumstances as a general issue and are aware of the possible ways to resolve if a dispute arose.

Table 4. Key causes of dispute in Sarawak construction industry

Causes	Overall		Group 1		Group 2		Mann-Whitney		
	Mean	SD	Rank	Mean	Rank	Mean	Rank	Z	Sig.
Management-related category									
Poor Time Management	4.84	1.061	2	4.86	2	4.73	1	-0.844	0.398
Poor Site Management	4.76	1.051	3	4.80	4	4.53	3	-0.823	0.411
Poor Quality Management	4.67	1.163	5	4.75	5	4.33	4	-1.299	0.194
Poor Cost Management	4.72	1.144	4	4.83	3	4.20	5	-2.001	0.045**
Poor Communication	4.93	1.060	1	4.97	1	4.73	2	-0.418	0.676
Financial-related category									
Payment Issue	5.05	1.187	1	5.01	1	5.20	1	-0.134	0.893
Finance Issue	4.74	1.108	2	4.86	2	4.20	3	-2.006	0.045**
Changes in the Economic Situation	4.72	0.990	3	4.79	3	4.40	2	-1.299	0.194
Construction-related category									
Work Change Orders	4.88	0.913	2	4.89	4	4.87	1	-0.279	0.780
Unrealistic Expectations	4.44	1.144	8	4.46	8	4.33	7	-0.581	0.561
Unforeseen Site Condition	4.83	1.160	5	4.90	3	4.47	3	-1.676	0.094
Unable to Perform Task	4.83	1.043	4	4.92	2	4.40	6	-1.160	0.246
Lack of Experience	4.74	1.200	6	4.82	6	4.40	5	-1.388	0.165
Incomplete Information	4.86	1.086	3	4.89	5	4.73	2	-0.244	0.807
Inclement Weather	4.22	1.341	10	4.27	10	4.00	10	-0.531	0.595
Failure in Sublet of Contract	4.62	0.984	7	4.70	7	4.20	8	-1.639	0.101
Delay Issue	5.10	0.983	1	5.24	1	4.47	3	-2.888	0.004**
Adversarial Relationship between Contractors	4.27	1.045	9	4.31	9	4.07	9	-0.604	0.546
Contract-related category									
Unrealistic Tender Pricing	4.38	1.118	5	4.39	6	4.33	4	-0.078	0.938
Unfair Risk Allocation	4.50	0.967	2	4.54	2	4.33	3	-0.692	0.489
Poorly Written Contracts	4.41	1.202	4	4.45	3	4.20	5	-0.816	0.415
Different Interpretations of the Contract Provisions	4.33	1.023	6	4.42	4	3.87	7	-2.149	0.032**
Disagreement on Claims	4.92	1.098	1	4.96	1	4.73	2	-0.801	0.423
Breaches of Contracts	4.49	1.234	3	4.41	5	4.87	1	-1.263	0.207
Ambiguous Contract Languages	4.33	1.079	7	4.38	7	4.07	6	-0.989	0.323

4.3.2. Financial related category

For the financial-related causes of dispute, “payment issue” was ranked as the top, followed by the “finance issue” and “changes in the economic situation”. “Payment issue” may seem as of utmost important to contractors as contractors require progress payment from clients for the recovering of labour and material costs. A delay in payment could possibly create dispute between client and contractor (Chua, 2012). In Pakistan, Farooqui et al. (2014) found payment issue as the least contributing factor towards dispute, as proper guidelines and working environment may made this factor least crucial.

“Finance issue” which includes the financial failure, is one of the key causes of dispute. Clients with little financial strength has risk in paying contractors for the project (Edirisinghe et al., 2020), while contractors with weak financing may have difficulties to pay for the construction materials and labour (Chua, 2012). The Mann-Whitney U-test showed the significant difference between the view point of Group 1 and Group 2 respondents, with p-value of 0.045. It is worth noting that the more experienced contractors (Group 2) viewed this finance issue as least contributory causes of dispute compared to contractors with lesser year of experiences (Group 1), which is similar to the “poor cost management” issue under the management-related category.

Inflation and construction materials’ cost fluctuations may lead to an unpredictable economic situation. This might normally increase the construction project cost compared to the price quoted during the tender period, and hence added the burden to contractors for submitting variation order to clients, for claiming additional construction material cost. Since the beginning of 2021, Covid-19 and increasing global market prices had caused the surged in Malaysian cost index of building materials (DayakDaily, 2021), which burdened the contractors without the clause of price variation in contract, as the engrossment of price increment would lessen contractors’ profit margin (Chua, 2022).

4.3.2 Construction-related category

“Delay issue” such as delaying in materials transportation, delaying in consultants’ inspection and delaying in drawings deliverance, could cause dispute to arise from the viewpoint of contractors, as this could affect the project progress. Such delay could possibly lead to contractors’ claim being delayed and hence increased their risk of project delay (Mahamid, 2016). Cakmak and Cakmak (2014) reported that the construction industry in Turkey is quite matured and the issue of late delivering site possessions seldom occurred, and hence the finding reported this cause of dispute as the least important. The Mann-Whitney U-test result showed a p-value of 0.004, which indicated a significant difference between the viewpoint of Group 1 and Group 2 contractors.

“Work change orders” is one of the key causes of dispute to G7 contractors in Sarawak construction industry, as such changes could possibly affect contractors’ schedule and timeline. Edirisinghe et al. (2020) supported that major changes in the orders such as design and materials, could lead to projects’ cost and time overrun. Chua (2012) stressed that the occurrences of dispute between consultants and contractors arose from consultants’ major design errors, which forced contractors to recalculate the construction cost.

“Incomplete information” was ranked as the third most agreed causes of dispute. Such finding is supported by Cakmak and Cakmak (2014), Edirisinghe et al. (2020) and El-Sayegh et al. (2020) in Turkey, Sri Lanka and UAE respectively. Incomplete information on specifications and drawings might increase contractors’ financial risk and hence causes dispute (Chua, 2012). Mahamid (2016) further elaborated that incomplete information may lead to errors in estimation, and may further affect the tender bidding outcome of contractor.

4.3.3 Contract-related category

“Disagreement on claims” was ranked as the top cause of dispute under contract-related category. This seems to imply that the respondents may experience on the claims rejection due to various reasons such as exaggerated claims, which further leads to the potential financial loss and hence dispute. Chua (2012) supported this finding by reporting this as the first ranked causes of dispute in Malaysian and Singaporean construction industry.

“Unfair risk allocation” with a mean value of 4.50 was ranked as second under the contract-related category. The respondents seems to concern on the involvement of risk across a construction project would not be distributed fairly across different stakeholders. Cakmak and Cakmak (2014), Ekhatior (2016), and Edirisinghe et al. (2020) found

similar findings in Turkey, Nigeria and Sri Lanka respectively. This seems to imply that such unfair risk allocation could be a common cause of dispute.

The Mann-Whitney U-test revealed that “different interpretations of the contract provisions” had a significant point of view between Group 1 and Group 2 respondents, with a p-value of 0.032. It is worth noting that the more experienced contractors (Group 2) ranked this as the least agreed causes of dispute out of the all 25 identified causes of dispute. There is a possibility that this group of respondents experienced in dealing with contract provisions and master with skills when disagreement arose. Mahamid (2016) stressed that the possible conflicts arose between project’s stakeholders could be leading to disputes.

5. CONCLUSIONS

This research found “delay issue” as the top key cause of dispute that mostly agreed by the G7 contractors in Sarawak construction industry. The findings identified the significant discrepancies between the viewpoint of contractors with lesser years of working experiences and more than 10 years experiences on four causes, namely: poor cost management, finance issue, delay issue and different interpretation of contract provisions. As contractor is one of the stakeholders involved in construction process and directly liaised with clients, their viewpoint on causes of dispute could potentially help to reduce the cases of dispute which in turn decrease the time and cost overrun issues. These findings could serve as guideline for the G7 contractors in mitigating future construction dispute, which faced in the large-scaled construction projects. The construction stakeholders and government shall work together in ensuring reduction on the dispute cases to enhance the country’s economic growth. Future study could look into semi-structured interview with contractors and a specific case study, to further detail their opinions on the dispute occurrences and possible mitigation strategies, for developing a comprehensive framework of dispute resolution.

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