

The Factors of the Conflict in Construction Works

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Abstract— This research is the analysis of the conflict causes, including processes of finding resolutions of the construction projects. By applying the documentary research methodology, collecting data onto documents and textbooks, analyzing and synthesizing the causes of the conflicts, lead to the disputes causing the incomplete constructions, and alternative resolutions. It is found that the causes of the conflicts are the three factors: individuals, documents, and environments (rules, regulations, and external factors). The conflicts can cause to delay. There are three groups of causes: 1) owners and consultants, 2) contractors, and 3) force major. Some causes can be compensated for money or time extension by selecting alternative resolutions of three severity levels: low, medium, and high levels. It is dependent on the parties. Hence, the factors of the construction work can be summarized as follows: 3CCL (3 Conflict, 3 Claim, 3 Level).

Keyword: Conflict, Disputes, Construction, Dispute settlement

I. INTRODUCTION

Construction is a process involving many parties. To accept any project's goals, the project management processes are needed. However, the goals include quality, cost, period, and various resources. [1] Mentioned that project management is "the process leading any project to its goals by managing qualities, costs, time, resources, and risks under the safety, health, and legal frameworks as well as occupational standards, and customer expectations." The construction usually separates the parties to project owner, contractors, designer, inspector, project consultant, and project manager who have specific roles if grouping them into big groups have project owner group, contractor group, consultant group. Constructions normally have errors. Nevertheless, the construction must meet rules including contracts, drawing, and other details as agreed. Therefore, it can be seen that many parties who work together have different roles. This can lead to conflicts. Some conflicts are not severe, but the conflicts may critically make the project unsuccessful. Actually, all parties try to prevent and solve the conflicts. However, the conflicts occur because of the different roles, rules, and environments. [2] Mentioned about the construction dispute that "Everyone construction parties do not want any obstacle to occur because it may lead to a conflict and dispute causing problems and unhappiness. However, obstacles may occur. The violence of the obstacles depends on situations, environments, and resolution methods."

From above in the construction there are persons, documents, laws, and environments. So that conflict has

become commonplace. [3] Defined that conflict refers to "the inconsistent opinions of more than one individual." Additionally, it can be stated that the cause of the conflict is the differences in thoughts, benefits, knowledge, understandings, feelings, incorrect communications, dissatisfaction, non-disclosure of some facts, and changes. These things usually occur in construction project. After a conflict occurs, any party with any different opinion will want all other parties to accept their opinion and then cause a dispute leading to project failure and lawsuit. [4] Presented the inappropriateness of dispute solving process from time extension claim. It is given that "the contract statements about the dispute solving processes of standard construction projects are obscure and unfair for constructors." This study shows the agreements used as a rule for the construction and disputes of government organizations. [5] Studied the cause of the dispute from lawsuit and provided contract improvement, conditions, regulations, and practice government in order to prevent and reduce conflicts. This study shows that the construction projects of the public sector have conflicts causing by many factors. The important factors of the conflicts leading to the disputes of the projects are caused by unclear and incomprehensive terms and conditions as well as the lack of important regulations. This caused the government officer to misunderstand facts and re-interpret contracts for their own benefits. [6] This research demonstrated the benefits for the public sector and the interpretation of the contract caused by the different benefits between the public and private sectors. If the benefits of each party are over-emphasized without considering the actual goals of the projects, then the projects may be adversely affected. The attempts to solve the disputes by arbitration contract, which were not successful. [7] By studying the problems in using the arbitration contract, who can be concluded that "the parties do not understand the arbitration principles and unclear frameworks for using the arbitration contract."

[8] Mentioned that making contracts and documents are very important processes that start from constructions planning, improving contract and regulations, which incur the contract has efficiencies and fairness in order to manage the projects appropriately.

II. OBJECTIVE

The study of the factors affect to the government's construction administration.

III. RESEARCH METHODOLOGY

This study is a qualitative research study applying the documentary research method and collecting relevant documents, textbooks, articles, and research studies in order to analyze and synthesize the factors of the conflicts of the

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construction works as well as the contents according to the descriptive research method.

IV. RESULTS

A. The Causes of the Conflicts

The conflicts of the construction works and resolutions have been continuously studied [9] from 1983 to 2014 in order to study the alternative methods for solving the conflicts and the trends for using the resolutions in the future with the theory of planned behavior (TPB). It was found that the 446 articles about dispute prevention were mostly unclear. There were 13 articles clearly studying the alternative procedures and resolutions. Ten of those articles obtained the data from the questionnaires and interviews. The other three articles presented the samples in Hong Kong, Taiwan, Singapore and Malaysia that are the country in South East Asia. This case shows that the trends of dispute resolutions are important and relevant to behavioral, basic, and control beliefs leading to acknowledgement, attitude, determination, and resolution selection behavior. [10] Mentioned that engineering knowledge needs empirical and phenomenal education in order to develop sustainable engineering works.

An important goal of important construction works are the quality. Normally, quality is relevant to construction cost. For instance, the construction cost of a five star hotel is about 35,000 - 50,000 baht per square meter. However, that of a three star hotel is about 18,000 – 27,000 baht. Actually, the quality is deeply related to the purchasing procedure that is considered as a managerial part of the construction works. [11] Mentioned that the relationships between quality and construction project management are about roles, teams, reliability, communication standards, and cooperation as well as explained the diagrams for setting appropriate quality strategies starting from individuals, purchasing procedures, obviousness, goals, solutions and improvements, mutual solutions, education and culture, and common benefits. Finally, the remarks about the importance of quality from the conflicts and disputes for complex projects were given according to the appropriate quality, cost, and fairness.

The delay of the construction works is caused by conflicts. The conflicts are caused by many factors since construction works are difficult to be predicted. There are various problems regarding climates, construction locations, economic changes, items, project owners’ decisions, and other components. [12] Studied the delay of the public utility construction projects in Mecca, Saudi Arabia.

By comparing the projects with those in Arabian countries, it was found that the causes of the delay include land ownership, plan changes, and underground public utility system. For the contractors, the factor is the lack of experiences. By comparing these with the analysis results in Arabian countries, 49.2% of the delay was caused by the project owners and 36% of that was caused by the contractors. This study shows that conflicts causing the delay did not always have to be caused by any group of individuals or anyone relating to the projects. These are consistent with a research study about construction management. [13] The factors of the effects on the contract management of the

public sector in Thailand can be divided into two groups: internal and external factors. Both studies separated the factors by considering that the case of the underground public system is an external factor, while the lack of the experiences of the contractors is the internal factor.

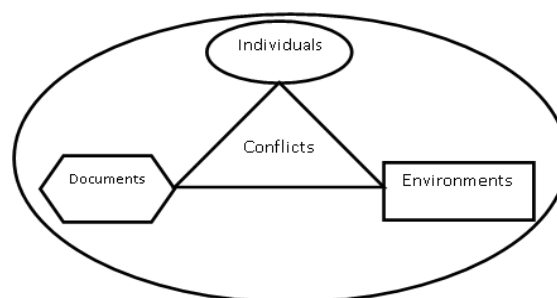
The causes of the conflicts leading to the disputes were differently studied. The factors of the conflicts were grouped and studied by collecting quantitatively and qualitatively data as well as statistics in the past. [14] Studied the causes of the delay of the construction projects in Egypt by considering seven groups including project owners, consultants, contractors, materials, labors and machines, internal factors, and external factors. There are 43 factors. The statistical methods were used for summarizing the causes into five levels. The very high level is for the project owners. The high level is for the contractors.

The medium level is for the external factors. The low level is for the consultants, labors and machines, and internal factors. The very low level is for materials. This study is a guideline for preventing possible conflicts for new projects with the methods for finding the causes of the disputes and applied mathematical methods including Analytic Hierarchy Process (AHP) and Analytical Network Process (ANP) in order to identify the causes of the disputes. [15] Applied ANP to the seven groups of the causes of the disputes: project owners, contractors, designers, contracts, human behaviors, internal factors, and external factors. Totally, there are 28 factors. However, the factors are different from [14]. By mainly using the operating factors, the main causes are the contractors at the significance level of 0.301548.

By using the method different from the previous study, the results are significantly different. The causes that were the project owners are changed into the contractors. A significant result from both studies is that the consultants and designers in some projects use different groups. This case usually causes incorrect communication and collaboration as well as delay. Thus, it is a cause of disputes.

Regarding the cause of the conflicts, various variables were studied from the stakeholders, individual behaviors, operating characteristics, documents, environments, laws, external factors, and force majeure. Sub factors were set according to situations and contexts. Statistics also had to be used. When analyzing and synthesizing different data at different locations and time from different people, it is found that there are three actual factors of the conflicts: individuals, documents, and environments (laws, external factors, and regulations). The three factors are related. If any conflict between factors occurs, then a relationship will be created as shown in Fig.1

Fig. 1 Causes of the Conflicts



B. Dispute Resolution Process

Regardless of dispute resolutions, stakeholders are affected significantly or insignificantly. An important thing is when any dispute is resolved. The result affects potential business damage. [16] Studied the potential damage factors after the dispute resolution for contractors. The factors include the lack of future collaboration and bad reputation. These two things potentially affect the contractors' business. For example, they do not get job offers from their old customers. The customers in the dispute news normally do not want this to happen to their future projects. For project owners, the most important thing is the delay. In the cases of department stores, there are clear opening dates. However, the department stores cannot open on those dates. Consequently, not only interest that are affected, but the co-investors are also affected. Hence, conflict resolution is very important for analyzing the causes and consequences in order to rationally find conflict resolutions.

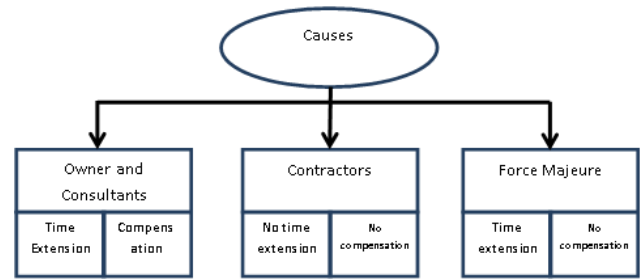
To consider disputes, the understanding in the disputes regarding the delay is necessary for considerations. [17] Studied about the delay and extension of the construction contracts in India. The gaps between the understandings in the reasons for the time extension caused errors leading to conflicts. Therefore, instant software was developed into to consider the construction period extension by dividing the construction works into two groups: time extendable and non-extendable groups. In the extendable group, there are seven factors including delivery, advance payment, construction plan examination, accident, strike, job changes, and additional jobs. This program can help the project managers to consider things thoroughly and instantly.

In Malaysia, the delay of the construction projects can affect the national development plans.

[18] Examined the causes of the delay in order to prevent damage in the future. The delay can be divided into three groups: 1) compensable group caused by the project owners and consultants, and 2) non-compensable group caused by natural disasters, protestation, contract amendment, and transport delay. This study considered only the claims for compensations in Pakistan. [19] Studied the causes of the time extension in the case of the claims for compensations from 27 factors by ranking the causes. The first cause is an external factor including laws and legal orders. The second cause is the construction plan changes. The third cause is unprepared capitals. Regarding natural disasters, the contractors can extend the construction period without being compensated for the damages.

To analyze the causes of the delay, disputes may occur if analyzers do not understand the principles and reasons. The causes of the delay can be divided into three groups: 1) owners and consultants, 2) contractors, and 3) force majeure. As can be seen in Fig. 2, two issues (i.e. period extension and compensation) must be separated. Some causes cannot be compensated, but time can be extended. Some causes can be compensated and time can be extended at the same time. This is dependent on evidences, facts, and documents used for considerations.

Fig. 2 Causes of the Delay



[20] Studied the processes for extending the construction time and compensation. Evidences and reliability are needed for the recording process (master plan(s) required), construction process, resources, and analysis of the effects from amending the documents used in the projects. The constructors must take these actions in order to claim for rights. These processes must be regularly and continuously used. These start from making plans by teams, providing information by everyone, identifying the causes of the delays that can be used for claiming for rights, recording the causes as evidences for continuous claims without waiting until the projects are complete.

The efforts to make the resolutions for the disputes in the construction works in Egypt [21] from causes by collecting data and dividing the resolution processes into eight processes starting from non-severe processes to prosecution. These include negotiation, compromise, fact finding, and consideration by any dispute committee, trial, jurisdiction, and prosecution. There are five dispute analysis groups including contract management, contract documents, finance, project management, and other reasons in order to create DRExM program package in order to find resolutions and help project stakeholders to manage the disputes before prosecution.

By synthesizing the causes of claiming for rights to extend the construction periods and compensations, the important components are the understanding in the principles and responsibilities for their own actions in order to consider the claims fairly and prevent disputes. If any dispute occurs, then the alternatives for resolving the conflicts can be separated into three severity levels: low, medium, and high levels (Fig.3). To resolve the dispute; it is dependent on the attitudes, behaviors, acknowledgement, behavioral control, and determinations of the disputes to choose the disputes and mutual benefits.

Fig. 3 Severity Levels of the Dispute Resolution Process

High	Arbitration or Prosecution
Medium	Fact-finding, Consideration by any dispute committee(s), and Trial investigation in court
Low	Negotiation and compromise

C. The Analysis of the Relationship between the Conflict and Dispute Resolution

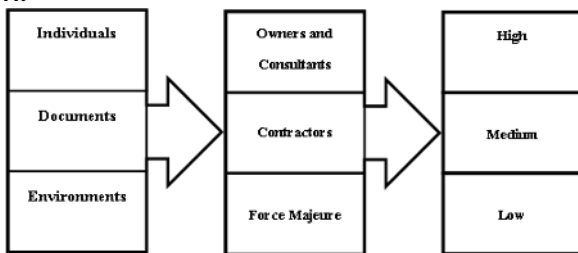
Regarding the analysis the factors of the conflicts in construction works, the conflicts can occur at any time. The

conflicts have different severity levels. To research into the problems in the construction works, most studies considered the delay that is mostly caused by conflicts. Conflicts can be divided into three severity levels: low, medium, and high levels. The three levels are caused by three factors: individuals, documents, and environments (laws, external factors, and regulations) as shown in Figure 1. The different severity levels can result in different resolutions. For instance, conflicts may lead to disputes. Hence, dispute resolutions need legal processes. On the other hands, conflicts at low level may be resolved by only negotiation.

For the construction disputes that may be caused by delay, the delay may not be always caused by conflicts. It may be caused by any other reason such as natural disaster or external factor. There are three groups of the causes of the delay: 1) owners and consultants, 2) contractors, and 3) force majeure as shown in Figure 2. The delay caused by different groups has different conclusions and considerations about time extension and compensation. If the stakeholders understand the causes of the delay and accept the mistakes and each other, the disputes resolutions can be the alternative processes at the low to medium severity levels as shown in Figure 3. If the stakeholders understand the important principles for claiming for the time extension and compensations, the alternative process will be at high level.

The relationships of all factors start from the conflicts' severity levels increase and lead to disputes. This will directly affect the selection of the dispute resolution selection from the three conflicts (3 Conflicts) to the three claims (3 Claims) and to solve the problems according to the alternative processes at the three severity levels (3 Levels) as shown in Fig. 4 that is the model of the conflict in a 3CCL construction work model.

Fig. 4 Model of the Conflicts in the 3CCL Construction Work



V. CONCLUSION

Constructions normally have errors. Nevertheless, the construction must meet rules including contracts, formats, and other details as agreed. Therefore, it can be seen that many parties who work together have different roles. This can lead to conflicts. The conflicts are usually caused by arguments about qualities, time periods, and construction values that can lead to conflicts if there components are not judged. Nevertheless, there are three actual factors of the conflicts: individuals, documents, and environments (laws, external factors, and regulations). The three factors are related. The conflict can cause delay. Normally, the sources of the claims for compensations and time extension can be divided into three groups: 1) owners and consultants, 2) contractors, and 3) force majeure. Time and money must be

separately considered.

To resolve the conflicts or disputes, it is dependent on cases. There are alternative processes that can be divided according to the severity levels: low, medium, and high levels. The important components of the dispute resolution are dependent on the claimants' attitudes, behaviors, intentions, and mutual benefits.

REFERENCES

- [1] Prasong Tharachai, Code of Project Management, Parbpim Limited Partnership., Bangkok, Thailand, 2009.
- [2] Visit Ajchayanonkit. (2013). Disputes in Construction. Retrieved July, 17,2013, from <http://www.buildernews.in.th>
- [3] Office of the Judiciary, Alternative Dispute Resolution Office. (2013). 100 Questions of Mediation. Bangkok: Kampai Imaging Co., Ltd.
- [4] Pitch Sutteerawathana and Natee Suriyanon. (2000). Construction Contract: Dispute-Settlement Procedure in Extension of Time for Completion. The Journal of King Mongkut's University of Technology North Bangkok, 10(2) , 51-58
- [5] Jaraewat Sarichewin, Thaworn Thirawetchayan and Kongkoon Tochaiwat, "A Stud of Construction Disputes in Thai Public Authorities: Causes and Solution Guidelines", 16th National Convention on Civil Engineering, Mahidol University, Bang Lamung, Chonburi, Thailand, 2011.
- [6] Chakkrit Ponooy, Causes of Contractual Disputes in Public Construction Contract, M. Eng. Thesis, King Mongkut's University of Technology North Bangkok, Bangkok, Thailand, 2008, pp. 389.
- [7] Lieutenant Anon Thaijumnong. (2005). Pre-Arbitration Process : Problem and Guideline for Dispute Resolution : A Case of Government Construction Contract. Master of Civil Engineering, King Mongkut's Institute of Technology North Bangkok.
- [8] Chaiwat Pooworakulchai, Serree Tuprakay, Waranon Kongsong and Krisda Phisonyabuth, " The Construction Contract Affecting Government Construction Project", The 12th International and National Conference on Engineering Education (INCEE12), The 36th Council of Engineering Dean of Thailand, Nakonnayok, Thailand ,15-17 May 2014,pp. 99-100.
- [9] Chia Kuang Lee., Tak Wing Yiu.,& Sai On Cheung. (2016). Selection and use of Alternative Dispute Resolution (ADR) in construction projects- Past and future research. International Journal of Project Management, 2016(34), 494-507. Retrieved June 5, 2016, from <http://www.sciencedirect.com>
- [10] Waranon Kongsong., Serree Tuprakay., and Krisda Phisonyabuth. " Study on Philosophy of Engineering in Empiricism and Phenomenalism", The 12th International and National Conference on Engineering Education (INCEE12), The 36th Council of Engineering Dean of Thailand, Nakonnayok, Thailand ,15-17 May 2014,pp. 99-100.
- [11] Mostafa Babaean Jelodar., Tak Wing Yiu., Suzanne Wilkinson. (2016). A conceptualization of relationship quality in construction procurement . International Journal of Project Management, 2016(34), 997-1011. Retrieved June 5, 2016, from <http://www.sciencedirect.com>
- [12] Ghazi Saad A Elawi., Mohammed Algahtany., & Dean Kashiwagi. Owners' perspective of factors contributing to project delay: case studies of road and bridge projects in Saudi Arabia. International Conference on Sustainable Design, Engineering and Construction 2016 (145)1402-1409.Retrieved June 5, 2016, from <http://www.sciencedirect.com>
- [13] Chaiwat pooworakulchai., Waranon Kongsong.,& Kijbodi Kongbenjapuch.(2016). The Effects of Government's Construction Contract Administration. International Journal of Engineering Research And Management (IJERM). Volume-03, Issue-03, March 2016, 39-43. Retrieved June 1, 2016, from <http://www.ijerm.com>
- [14] Mohamed M. Marzouk., Tarek I. EL-Rasas. (2014). Analyzing delay causes in Egyptian construction projects. Journal of Advanced Research 2014(5) 49-55. Retrieved November 15, 2014, from <http://dx.doi.org/10.1016/j.jare.2012.11.005>
- [15] Emre Cakmak., Pinar Irlayici Cakmak. (2014). An analysis of causes of disputes in the construction industry using analytical network process. 2nd World Conference on Business, Economics And Management-WCBEM 2013. Social and Behavioral Sciences 2014(109) 183-187. Retrieved June 5, 2016, from <http://www.sciencedirect.com>
- [16] Wenxue LU., Lihan Zhang., & Jing Pan. (2015). Identification and analyses of hidden transaction costs in project dispute resolutions. International Journal of Project Management, 2015(33), 711-718. Retrieved June 10, 2016, from <http://www.sciencedirect.com>
- [17] K.C. Iyer., N.B. Chaphalkar., & G.A. Joshi. (2008). Understanding time delay disputes in construction contracts. International Journal of Project

- Management, 2008(26), 174-184. Retrieved December 15, 2014, from <http://www.sciencedirect.com>
- [18] N. Hamzah., M.A. Khoiry., I. Arshad., N.M. Tawil., & A.I. Che Ani. (2011). Cause of Construction Delay-Theoretical Framework. The 2th International Building Control Conference 2011. . Retrieved December 18, 2014, from <http://www.sciencedirect.com>.
- [19] S. Shujaa Safdar Gardezi., Irfan Anjum Manarvi., & S. Jamal Safdar Gardezi. (2014). Time Extension Factors in Construction Industry of Pakistan. Fourth International Symposium on Infrastructure Engineering in Developing Countries, IEDC 2013. 2014(77) 196-204. Retrieved December 20, 2014, from <http://www.sciencedirect.com>.
- [20] Khaled Ahmed Ali Alnaas., Ayman Hussein Hosny Khalil., & Gamal Eldin Nassar. (2014). Guideline for preparing comprehensive extension of time (EoT) claim. HBRC Journal, 2014(10), 308-316. Retrieved November 18, 2014, from <http://ees.elsevier.com/hbrcj>
- [21] A.A. Elziny., M.A. Mohamadien., H.M. Ibrahim., & M.K. Abdel Fattah. (2016). An Expert system to manage dispute resolutions in sonstruction projects in Egypt. Ain Shams Engineering Journal, 2016(7) 57-71. Retrieved June 10, 2016, from <http://www.sciencedirect.com>