

The Reduction of the Impacts in the Contract Management for Government Construction Projects

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Abstract

This article is the analysis of the guidelines for reducing the impacts of the government's construction contract management by synthesizing the factors of the delay of the construction projects. The quantitative methodology was used for conducting the field data collection with the three sample groups: government officer, contractor and consultant groups. The severity index was used in order to reduce the impacts. The factors sequence 1, 2, 4 and 5 need improvements in terms of procurement and in the initiation step of project. The factors sequence 3 is about stakeholders requiring occupational standards for reducing conflicts in all construction processes. The management must be systematic. So that, in the management should start from the initiation step of the project such as planning, documentation preparation, stakeholder coordination, and compliance with construction and other relevant laws.

Keywords: construction, government, effect, construction law

BACKGROUND AND THEORIES

The construction industry is considered as an economic index. It consists of components that include trading materials, equipment, workers and machine as well as real estate and technological developments. [1]By studying the construction industry in Austria, it was found that it directly affects the country's economy and society with the approximate revenue of 30 billion dollars or 10% of the GDP. That 10% increased the GDP to 2.5%. [2] The construction industry also develops the country. For the industrial developments in China, the Chinese government has emphasized on the rapid developments for the last 30 years. Firstly, it started from organizational management and construction productivity improvement. Secondly, the procurement, employment and competition mechanisms were created by improving the efficiencies of construction projects. Lastly, technological and project management innovations were created in order to improve the efficiency and effectiveness of the construction project management.

For the construction industry in Thailand, it is considered as important as that in other countries. For the trend of the construction industry in 2015, the industry was quite stagnant

because of the slow project bidding process of the government. However, the construction projects of infrastructures were hastened in 2016 in order to reach the GDP of 3.8% and compensate the decelerated household economy and exports. The PPP Fast Track project preparation method was also used in order to reduce procurement processes [3]. The government's policies in Thailand were also created in order to stimulate the economy. Annual budgets focused on infrastructure construction projects by three organizations: Department of Highways, Department of Rural Roads and Royal Irrigation Department [4].

The disbursement of the government's projects was hastened in order to stimulate the overall economy of the country, and it was very important. Currently, the factor of the successes of construction projects is the compliance with construction contract plans. If the contract management is defective, the construction projects will be delayed. [5] By surveying the delays of the PPP construction projects in Nigeria, it was found that most problems were caused by corruptions with the five main factors: the uncertainty of the government's policies, the absence of the unity for setting policies, the political security, the lack of the understanding on the principle of PPP, and the excessive expenses. In Thailand, there are studies about the delays of the industrial projects affecting the economic development. [6] It was found that the problems were caused by the lack of the resources of the project owners, consultants and contractors.

The constructions in Thailand do not only need efficient management, but the compliances with relevant laws (e.g. the Building Control Act, Engineering Act, and Ministerial Regulations) are also required. Different laws have different objectives, governance goals and periods. By considering the laws relevant to constructions, it was found that there are many governance organizations. It can be stated that these are the construction laws that are ones of the causes of managerial problems. [7] The models of the conflicts in the construction projects were made according to the types of the causes, stakeholders and severity levels with the 3 CCL construction work model. The cause of the effects on the government's construction contract management led to the conflicts. [8] The causes of the conflicts leading to court cases were mentioned and summarized into three periods as follows. The pre-contract period had six causes. The contract period had 11

causes. The post-contract period had eight causes. The mentioned data are relevant to management. Studies must also be relevant to project contracts. [9] The dispute resolution process for the extension of the deadlines in standard construction contracts was mentioned. The extension was unclear and unfair. There were two additional opinions about the inappropriateness of middle engineers and the dispute resolution regarding construction periods. The issues affected planning, operations, expenses, and the risks taken by construction companies. The importance of the agreements on constructions also directly affected projects regarding documents. [10] The statements in contracts that cannot be argued by contractors according to the Office of the Prime Minister on Procurement were mentioned. The principles of the Civil and Commercial Code including honesty, intention interpretation in civil cases, and contract interpretation can be applied to the considerations of the conflicts. The effective orders of contract documents were also emphasized in the cases of conflicts.

[11] Studied the construction contracts affecting government construction project. Most were resulted from incorrect contracts due to in-process construction plan. Moreover, there were other causes. The factors could be divided into two groups: internal factors and external factors. Internal factors were project initiation until project termination processes. External factors were natural conditions and man-made phenomena as mentioned in [12]. The details were classified based on project relationship. [13] Studied factors affecting construction project costs. The factors were classified into 7 groups with the total of 38 factors. Important factors were design problems resulted from approval delays, document conflicts etc. In Egypt, [14] studied delay factors from 9 factor groups from the total of 99. The result showed payment problems among project owners and employees including planning inefficiency. The consulting group was transition delay.

According to construction project delay factors in Malaysia [15], it was found that the factors were financial shortage of contractors and delay disbursements. The research results revealed RII 100% and 97%, respectively. From the opinion surveys from contractors and consultants [16] in Jordan, the delays were from project owner intervention, inexperienced contractors, financial problems and disbursements. The research provides delay-solving suggestions by increasing importance on procurement and project owner intervention control. In terms of delay causes and problem severity rating [17], it was found that the highest severity affected group was project owner group and the lowest severity affected group was material group.

OBJECTIVE

In order that study how the reduce impacts of government construction contract management and to analyze the

possibility towards effective contract management.

RESEARCH METHODOLOGY

This research is a quantitative research. It consists of three important steps. The first step is literature review from documents, textbooks, articles and related works to collect factors causing project delay. The second step is to conduct questionnaires through factor analysis from the first step. Factor-relating questions are synthesized as guidelines to reduce impacts in government construction contract management and check correctness by three experts. Sample size was set by the data on the number of e-GP registered traders with the government [18] by setting the least number of sample size as suggested by equation [17];

$$n_o = \frac{p \times q}{v^2} \quad (1)$$

$$n = \frac{n_o}{1 + \frac{n_o}{N}} \quad (2)$$

n_o is the initial sample group, p is the ratio of target group, q equals $1-p$, v is the maximum discrepancy value [17] which equals 10%, n equals sample group, N is the total population [18], the total number of juristic person is 43,433 and in either company limited or public company limited forms equal 23,158. When they are substituted in equation (1) and equation (2), the sample size is 25. The three target population groups are government sectors as employers, contractors as employees and project consultants as controllers. Thus, the total sample size equals 75. Prior to data collection through questionnaires, the data were collected for reliability testing using Cronbach's method of 0.93 and the reliability value of 86.49 percent.

The third step is data analysis. It is the analysis of efficiency increase in government construction contract management with severity index

$$SI = \frac{\sum_{i=1}^5 w_i X_i}{AN} \times 100 \quad (3)$$

w_i is an efficiency, increase rating indicator on government construction contract management. There are five ratings: 1. no increase in efficiency, 2. slight increase in efficiency, 3. moderate increase in efficiency, 4. high increase in efficiency and 5. maximum increase in efficiency. X_i is the number of responses in each criterion. A is the highest criterion and N is the total number of questionnaires.

ANALYSIS

According to the data collection on efficiency, increase guidelines on government construction contract management from the total questionnaires of 155, 97 questionnaires were usable. From the sample size of 75 (129%), the government sectors were 32 (32.99%), consulting and controlling sectors

were 33 (34.02%) and employees were 32 (32.99%). Those with below 10 years of experience were 37.11%. Those with 10-20 years of experience were 42.27%. Those with more than 20 years of experience were 20.62%. These data were from SI testing and Ranking Top five for the improvement of government contract management.

Table 1: Top five for the improvement of government contract management

Improvement the construction management in Government projects	SI
1. The contracts must state the size and details of the construction projects.	82.27%
2. The construction technique must meet the construction principles.	82.06%
3. The stakeholders of the projects must understand the inspection system according to professional standards.	81.44%
4. Construction quality must be consistent with the construction value.	80.82%
5. Pattern and item preparations and examinations must be consistent.	80.00%

From Table 1, it shows the severity analysis results of efficiency increase in government construction contract management as guidelines to reduce impacts on government construction contract management. The first step is to create proper size and construction detail for the construction contract. Most government construction contract follow templates set by Procurement Committee. Some details may not be appropriate. The second, fourth and fifth steps are to arrange contract documents including specifications, forms, prices, construction steps and payments. All are important and must be done accurately. They must be consistent with engineering standard to reduce future impacts. The third step is that relating parties must understand testing system according to vocational standard. Sometimes, errors may occur due to no understanding in construction system as vocation standards and engineering facts are required, as supported in [19]. Three main criteria for government construction contracts are personals, documentation and related laws.

CONCLUSION

This research is an analysis on how to reduce impacts on government construction contract management through delay-causing factor analysis and management guideline synthesis to reduce SI ranking impacts with the first five important steps. The first, second, fourth and fifth must be operated before procurement. The third step is concerned with understanding in vocational standard system. So that the Contract Management for Government Construction Projects should

reform contract agreement, documentation (as part of the contract) and personals must cause the least errors to reduce the construction project impacts.

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