

REVISITING THE CRITICAL FACTORS CAUSING FAILURE OF CONSTRUCTION PROJECTS IN VIETNAM

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The Vietnam construction industry has considerably developed since 1986 as a result of “Doi Moi” or all-round renovation process, stepping in the general development trend and the process of gradual globalization and regionalization. However, despite the pace of economic reforms, obstacles and risks have continued to plague the construction industry. This paper attempts to elicit the perceptions of construction professionals by revisiting some of these critical factors causing the failure of construction projects in Vietnam. A triangulated data collection approach involving 10 interviews and 45 questionnaires was administered to construction stakeholders to elicit their perceptions on the 20 factors causing the failure of the construction projects. The quantitative response data was subjected to descriptive statistics such as frequency analysis whereas, content analysis was used for the qualitative (interviews data). The results revealed that the ten most critical factors causing the failure of construction project were as follows: (1) “disregard of the significance of project planning process and project planning”, (2) “lack of experience in executing complicated project”, (3) “poor design capacity and frequent design changes”, (4) “lack of knowledge and ability in managing construction projects”, (5) “lack of financial capacity of owner” (6) “poor performance of contractors”, (7) “lack of a systematic approach to managing the project and entire organisation”, (8) “corruption and bribery in construction projects”, (9) “the delays in payment”, and (10) “economic volatility and high inflation”. The originality and value of this study lies with the identification of the lessons which are necessary for enhancing understanding and improving the awareness of project risks. This provides an appropriate approach to risk management, thereby tackling and mitigating the impacts of negative events in managing construction projects in Vietnam. The study further provides insights on the factors contributing to the failure of construction projects across the Vietnam construction sector.

Keywords: project failure, performance, critical factor, risk management, Vietnam, construction industry

INTRODUCTION

While factors causing failure of construction projects has been studied in other countries, the revisiting of studies undertaken in the context of Vietnam deserves particular attention. It cannot be denied that the Vietnam construction industry has considerably grown and significantly contributed to Vietnam economy during “Doi Moi” (Renewal) process. Vietnam’s economy has been growing impressively for the last two decades. The annual average rate of the economy has been at 7.3 per cent and

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the capital income has also increased five-fold from 1990 to 2010 (World Bank, 2011). In 2011, Vietnam's GDP was predicted to stand at 5.9 per cent with growing 5.5 per cent in industry and construction fields (World Bank, 2011). According to Uyen (2003 cited in Nguyen *et al.* (2004a), the construction industry has been one of the main sectors contributing to the growth of the Vietnam economy in recent years. However, despite its contribution, the same study established that construction project management has been fronted with many difficulties and constraints which negatively impact on the effectiveness of many construction projects. For example, 30% of total construction capital is not used properly for construction purposes during project duration because of poor management (Uyen 2003 cited in Nguyen *et al.* 2004a). The Vietnam's construction industry has been confronted by many complicated issues in management. This needs to improve so as to manage construction project successfully and smoothly.

A number of studies have argued that the adoption of risk assessment and management practices are closely aligned with overall project performance (Imbeah and Guikama, 2009; Nguyen, Ogunlana and Lan 2004a; Nguyen, Ogunlana and Dey, 2007). For example, in the context of Vietnam, Nguyen *et al.* (2004) state that construction projects are often confronted with many complexities which involve a range of uncertainties including deadline. In additional cost target or quality, this can result in risks within project management and cause the failure of a construction project. Similarly, Nguyen *et al.*, (2007) also refers to the ineffectiveness of the Vietnamese construction projects as a result of poor management and inefficient risk management application, with many projects failing to meet the deadline, and spending over. Regardless of the advocated and noted benefits of systematic risk management, this is not a new concept, and it continues to draw little attention for construction projects in Vietnam. Obviously, the lack of understanding and awareness of risk management can cause adverse impacts on meeting ultimate targets of construction projects.

The study aims to seek the perceptions of construction professionals by revisiting some of these critical factors causing the failure of construction projects in Vietnam. The study will inform the stakeholders of the reoccurring factors causing failure, and re-evaluate present strategies of overcoming these factors. It is also anticipated that some of the recommendations proposed would enhance the current and future projects' success rates, which would at least reduce risks relating to project management knowledge of labour workforce.

This paper will give an overview and status of construction project management in Vietnam. It will summarise and present brief discussions on the extant literature on risk management and critical factors causing the failure of construction projects. The paper will also outline significant issues that allow justification for revisiting critical, and discuss methodological approach and findings. In addition the paper illustrates the research methods, implications and limitations of the study. The implications and recommendations made and conclusions are summarised in the final section.

LITERATURE REVIEW

Overview and status of construction project management in Vietnam

There is a plethora of studies pointing to the construction project management related problems in Vietnam (Nguyen *et al.*, 2004b; Luu *et al.*, 2008a; Ling *et al.*, 2009; Ling and Hoang, 2010). By and large, some of the studies have reported on and

acknowledged the situation of poor management in construction projects in emerging countries, including Vietnam (Luu *et al.*, 2008a). If not they have demonstrated the links between failure of large construction projects and poor management during project duration. This has often lead to project delays, cost overruns, labour accidents, low quality and disputes between parties (Nguyen *et al.*, 2004b). Other studies such as Ling *et al.* (2009) have attributed the problems to lack of high-quality project managers within the Vietnamese construction industry. Accordingly, this has acted as a barrier for construction firms in recruiting appropriate applicants for complicated projects; especially in projects which are invested by foreign capital. This has resulted in foreign firms often resorting to holding training courses in project management for their staff. This helps them to recognize that a good project management competency is so important to construction projects.

Ling *et al.* (2009) found that, Vietnamese construction companies are lagging behind foreign companies not only in management capability, but also in financial capacity, experience in complex projects, knowledge in advanced design and construction technology. Other setbacks acting as constraints have focussed on the corruption and complications of the legal system for construction companies. This applies especially to foreign firms working in Vietnam (Ling *et al.* 2009, Ling and Hoang 2010 and Nguyen *et al.* 2004b). Problems such as complicated and burdensome regulatory procedures cause severe difficulties and confusion for both local and foreign practitioners (Ling *et al.* 2009). According to Ling and Hoang (2010), it highlights the weakness of the legal system in Vietnam. This is often manifested through its ineffectiveness and inadequacy of the legal framework. For example, construction firms have to work in an environment where government policy changes quite frequently. Laws and regulations are inconsistent. In addition, it is not productive to apply Vietnam's court system in commercial disputes due to its ineffectiveness.

Risk management in construction projects in Vietnam

Given the established linkages between risk management and project success, the following subsection provides a summary of the studies within the area of risk management as conducted in Vietnam. In their seminal study Edward and Bowen (1998), observed that research on construction project risk management occurred from 1960s. The result of research is well established as an application process. Accordingly, a systematic approach of risk management is required in order to minimise failures and maximise benefits. However, the lack of a systematic and efficient risk management system is one of the major factors leading Vietnamese construction projects to failure (Nguyen *et al.* 2007).

The consequence of risks in Vietnam construction projects is similar to common situations of construction projects worldwide. The risks often lead to delays and cost overruns in projects. Risk management is not carried out effectively (Nguyen *et al.* 2007, Le *et al.* 2008, Nguyen *et al.* 2004a, Nguyen *et al.* 2004b, Luu *et al.* 2008b). It is therefore predictable as these issues have been attracting the interest of many researchers and practitioners. Nevertheless, time and cost constraints often occur frequently in developing countries. Vietnam is not an exception (Nguyen *et al.* 2007, Le *et al.* 2008). Drawing upon Vietnam and other selected countries as an example, Le *et al.* (2008) established that, delays and exceeded budgets in construction projects not only cause loss of financial benefits, but more seriously cause the decreasing belief of citizens, especially in projects funded by government.

As mentioned in previous sections, Vietnam construction market is dynamic and open to both domestic and international investors. This makes the construction project risk management in Vietnam to become more and more competitive. It also gets complicated as there are a wide range of factors impacting the project success. As stated by Nguyen et al. (2007), Project managers today have to deal with various risks from political, financial, legal risks to risks coming from the differences in practices of local and foreign stakeholders. All these risks will have impacts on achieving project objectives if they are not managed efficiently. Particularly, it is suggested that international firms' effectiveness in identifying and managing political, economic and legal (PEL) risks will enhance the chance of project success in Vietnam (Ling and Hoang 2010). The authors namely list major PEL risks that include corruption; bureaucratic administrative system; termination of public projects; fluctuation of exchange; interest and inflation rates; inconsistent regulations and inadequate legal framework.

Summary of key critical factors identified in the Vietnamese Construction Industry

Table 1 denotes a summary of selected studies on the critical factors causing failures of construction projects in Vietnam. As can be seen from Table 1, there are nine critical factors which had been cited by more than half of the studies reviewed. The highly cited factor was “poor design capacity and the frequent design changes” by three quarters (6) of the studies. This was followed by half (50%) for “bureaucratic administrative systems”.

RESEARCH METHODS

The main objectives of this study were to elicit the perceptions of construction professionals. By revisiting some of critical factors causing the failure of construction projects in Vietnam, a triangulated data collection approach (mixed methods) involving interviews and questionnaire was adopted for this study. The following subsections now describe the methodology undertaken for each of the methods.

Measurement instrument

The questionnaire was designed based on the extensive literature review and encompassed all the critical factors causing the failure of construction projects (Table 1). In general, the questionnaire was divided into the following three sections as follows; **Section one: Background information** - This section comprised three questions pertaining to the general demographics as follows: (i) type of organisation; (ii) designation; and (iii) length of experience; **Section two: The importance of risk management** - This section comprised two questions associated with (i) the respondent's perception on the importance of risk management; and (ii) responsibility for managing risk; and finally **Section three: The practice of risk management** - This section comprised of five questions associated with the practice of risk management as follows: (i) approaches; (ii) standards; (iii) obstacles; (iv) achievement of project objectives; (v) ranking of 20 critical factors categorised into the following four groups as follows; (Table 3). For sub section (v), the respondents were asked to provide the ranking of each of the 20 critical factors (Table 1) as identified from the review of the literature that may lead construction projects to failure. The ranking was based on a sliding scale (based on the severity of extent) from 1 to 20, where 1 was the most serious and rank 20 as the least serious. The results presented in this paper only relates to the first and second sections of the questionnaire. It was beyond the scope of this

study to report on all the findings. The full listing of the critical factors, associated ID and the four categories are shown in the following sub section.

Table 1: Critical factors causing the failure of construction projects

ID	Critical factors causing the failure of construction projects	Le <i>et al.</i> 2008	Ling & Bui 2010	Ling & Hoang 2010	Ling <i>et al.</i> 2009	Luu <i>et al.</i> 2008a	Luu <i>et al.</i> 2008b	Nguyen <i>et al.</i> 2004b	Nguyen <i>et al.</i> 2007	Number	Agreed Frequency	Ranking
01	Poor design capacity and the frequent design changes	x	x		x	x	x		x	6	75%	1
02	Financial difficulties of contractor	x	x		x		x	x		5	63%	2
03	Obsolete or unsuitable construction methods	x			x	x	x	x		5	63%	3
04	Incompetence of project team					x	x	x	x	4	50%	4
05	Poor site management and supervision	x	x				x	x		4	50%	4
06	Slow payment of completed works	x	x			x	x			4	50%	4
07	Financial difficulties of owner	x	x		x		x			4	50%	4
08	Corruption			x	x	x		x		4	50%	4
09	Bureaucratic administrative system			x		x		x	x	4	50%	4
10	Interest and inflation rates	x		x			x			3	38%	10
11	Lack of accurate historical information	x	x					x		3	38%	10
12	Unpredictable government policies and priorities	x	x	x						3	38%	10
13	Lack of experience in complex projects		x		x		x			3	38%	10
14	Inadequate legal framework			x	x					2	25%	14
15	Incompetent subcontractors	x	x							2	25%	14
16	Slow site handover						x	x		2	25%	14
17	Defective works and reworks	x					x			2	25%	14
18	Owners' site clearance difficulties						x	x		2	25%	14
19	Lack of capable owners						x	x		2	25%	14
20	Improper planning and scheduling							x	x	2	25%	14
TOTAL		11	9	5	7	6	13	11	4			

Survey administration

The questionnaire and responses were distributed and received via email. The targeted key respondents were drawn from the Vietnam construction industries including officials in government bodies; lecturers of universities; managers; consultants; designers and site supervisors working for Vietnamese or foreign construction companies. As the survey was conducted in Vietnam, this required the questionnaire to be translated into Vietnamese with the same purpose described in interview for the research section.

Statistical methods

The obtained raw data from the questionnaires was input and analysed using the *IBM Statistical package for social sciences* (SPSS) computer programme version 20.0.0. SPSS was used to look at single variables that focussed on descriptive statistics for preliminary data analysis and frequencies.

The 'frequencies' procedure was applied to the literature review and actual descriptive (questionnaire) survey.

According to Forza (2002), this type of analysis is normally used to ascertain the number of times various subcategories of phenomenon occur. Accordingly, in conducting the literature review on the critical factors causing the failure of the construction projects, the number of times (frequencies) that these studies mentioned the identified twenty critical factors causing the failure of construction projects was determined. Furthermore, this was based on the selected eight studies in Table 1, the ranking and establishment of the importance of these risk or critical factors was achieved (Table 1).

Interviews

The aim of conducting interviews was to understand the research issues from the interviewees' perspective in order to discover information from participants prior to scientific interpretations (Brinkmann and Kvale, 2009). Interviews not only provide enormous amounts of data, but also bring to researchers an insight of the problems deeper than other researcher instruments (Birmingham and Wilkinson, 2003). The interview process was conducted following five stages as suggested by Birmingham and Wilkinson, (2003, p. 44): (1) draft the interview; (2) pilot the interview questions; (3) select the interviewees; (4) conduct the interviews and (5) analyse the interview data. The following sub section presents a brief discussion of some issues associated with five highlighted stages.

Ten interviews were conducted between industry and the academic community. As pointed out in stage 3 of the process, this required selection of the interviewees (see subsequent section). Hence the importance of taking a flexible approach for the interview to be successful. Against that background, the semi-structured interview was selected for this research. The noted advantages of this approach, such as flexibility, and enabling the researchers to make a closer relationship with their participants, are well documented in Birmingham and Wilkinson (2003).

Stage one: drafting the interviews

A set of criteria for drafting interview questions was undertaken. This was to ensure that the questions posed were relevant to the research circumstance, comprehensive, easy to understand as well as facilitate collecting useful feedback. In view of that, interview questions were structured in four sections as follows: (1) Background information - This contained two demographical questions associated with tenure such

as length of time of working in the construction industry, and professional background; (2) The second section was composed of two questions and aimed at ascertaining the importance of risk management in construction projects. (3) The prevailing practice of risk management in the Vietnam construction industry was addressed through three questions in this part. (4) The main question associated with this paper was addressed in the fourth section titled “constraints and risks in managing construction projects in Vietnam”. In particular, two questions were posed: (i) in your opinion, which objectives of the construction project are usually not achieved in Vietnam?; and (ii) In your opinion, what are the major factors which could lead the construction projects to failure?. The findings reported in this study relate to the first and fourth sections of the interviews.

Stage three: selection criteria of Interviewees

Interviewees were selected on a number of criteria ranging from experience and professional background. This resulted in 10 participants drawn from both academia and industry. The selection process via phone or email for the interviewees was carried from July to August 2012.

Stage four: conducting the interviews

The interviews were carried out from September to October 2012. All interviews have been held in Ho Chi Minh City, the largest city in Vietnam, and lasted for 1 to 1.5 h. Each interviewee had a clear interpretation of purpose, content of the interview as well as their risks; rights and benefits for participating in the research. This is compliance with the commitment of the researcher to Human Research Ethics Committee before taking the interview.

SURVEY RESULTS

Characteristics of sample (respondents)

Nearly a third (31.1%) of the respondents were project managers, followed by site supervisors (24.4%) and designers (20.0%). It would have been more desirable if the majority of the respondents were associated with the monitoring of the projects. Proportions of the respondents in terms of the type of the organisation were: private company (55.6%), state-owned organisation (24.4%), and government departments (11.1%). The minority 2.2 % (1) were drawn from “100% foreign invested enterprise and joint venture with foreign company” (6.7%).

Analysis of the top-ten critical factors causing failure

Table 2 shows the list of the ranked factors including the 20 factors sorted in ascending order according to their impact on causing the failure of construction projects. As can be seen from Table 2, the “disregard of the significance of project planning process and poor project planning” factor was ranked first with the mean score (6.24).

This finding is also consistent with literature on Vietnam (Nguyen *et al.* 2004b; 2007). Consequently, due to emerging countries, Vietnam lags behind advanced countries worldwide in construction project risk management in terms of experience, knowledge and technology. Moreover, projects managers also have to deal with various risks in relation to all economic, political and social aspects. Nevertheless, Vietnam is gradually integrating into the common development stream of the world. Many managers and practitioners working in Vietnam construction industry have recognised the important role of risk management in obtaining the project goals and objectives. In particular the success of their organizations in general. Interestingly, although

corruption and bribery are considered the most major obstacles in carrying out projects (Nguyen *et al.* 2004b; Thuyet *et al.*, 2007; Ling and Hoang, 2010), the factor relating to “corruption and bribery in construction projects” was only ranked in the 8th position (MS = 9.52).

The top-ten critical factors as identified in Table 2 were further classified according to these four categories: (1) knowledge and technical issues; (2) management issues; (3) financial issues; and (4) social and legal issues. The ranking of these factors is shown in Table 3.

Table 2: Critical factors ranking causing the failure of construction projects

ID	Critical factors causing the failure of construction projects	Mean	R
07	Disregard of the significance of project planning process and poor project planning	6.24	1
02	Lack of experience in executing complicated projects	7.18	2
01	Poor design capacity and the frequent design changes	8.36	3
04	Lack of knowledge and ability in managing construction projects	8.70	4
11	Lack of financial capacity of owner	8.91	5
03	Poor performance of contractors/ sub-contractors	8.91	5
08	Lack of a systematic approach to manage the project and entire organisation	9.42	7
18	Corruption and bribery in construction projects	9.52	8
15	Delays in payment	9.91	9
12	Economic volatility and high inflation	10.45	10
06	Ineffectiveness in managing construction site	11.09	11
09	Lack of effective communication system in implementation of projects	11.24	12
14	The ambiguousness of contractual terms and conditions	11.33	13
17	Lack of transparency in procurement process	11.45	14
13	Lack of capacity in forecasting market demand and trend	11.76	15
05	Out-dated construction technology and facility	12.00	16
19	Bureaucratic government system in relation to regulations on project procedure	12.58	17
10	The ineffectiveness in resolving disputes and conflicts among project stakeholders	12.58	17
20	The instability and inefficiency of government policies and legal system	13.15	19
16	Low ethics in doing business of project participants	15.21	20

As can be seen from Table 3, there were four factors related to the knowledge and technical issues in the top-ten category – the “lack of experience in executing complicated projects” factor placed second (MS = 7.18), “poor design capacity and the frequent design changes” placed third (MS = 8.36), “lack of knowledge and ability in managing construction projects” placed fourth (MS = 8.70) and “poor performance of contractors/ sub-contractors” placed fifth (MS = 8.91). The rankings are also consistent with the observations made during the interviews.

On the other hand, the result obviously proved that the biggest problem leading Vietnam construction projects to failure is issues associated to project management elements. These being knowledge; technical skill of project managers as there are 4 in 5 factors of “knowledge and technical issues” category occupied the top five of the

ranking table. The remainder of the factors as identified in Table 3 were confirmed by the Interviewees as being of paramount importance.

Table 3: Categorisation of the top ten factors causing the failure of construction projects

Category	ID	Critical factors causing the failure of construction project	R
Knowledge and technical issues	01	Poor design capacity and the frequent design changes	3
	02	Lack of experience in executing complicated projects	2
	03	Poor performance of contractors/ sub-contractors	5
	04	Lack of knowledge and ability in managing construction projects	4
Management Issues	07	Disregard of the significance of project planning process and poor project planning	1
	08	Lack of a systematic approach to manage the project and entire organisation	7
Financial and economic issues	11	Lack of financial capacity of owner	5
	12	Economic volatility and high inflation	10
	15	The delays in payment	9
Social and Legal Issues	18	Corruption and bribery in construction projects	8

IMPLICATIONS & LIMITATIONS

Relative to the critical factors causing failure of construction projects, the study has a number of managerial implications for the researchers, policy makers and practitioners (top management) within the Vietnamese constructional related organisations. Given that the majority of the highly ranked critical factors affecting the construction projects were drawn from the category of ‘knowledge and technical issues’. It is recommended that, for construction companies to improve and enhance their competency in the construction project management, a concerted effort in specialising in risk assessment and management practices is required.

CONCLUSIONS & RECOMMENDATIONS

This paper provided an overview of the construction professionals in Vietnam on the critical factors causing failure of construction projects. Research established that, despite the all-round renovation process or “Doi Moi” undertaken in Vietnam, the construction industry is still plagued by the same critical factors as identified from eight studies spanning a period of 2004–2012. These views were further reinforced by all of respondents. Generally, the major or critical factors were associated with knowledge and technical issues. The most pressing five factors were as follows: (1) disregard of the significance of project planning process and poor project planning; (2) lack of experience in executing complicated projects; (3) poor design capacity and the frequent design changes; (4) lack of knowledge and ability in managing construction projects; and (5) lack of financial capacity of owner. Furthermore, the issue of corruption and bribery is concerning despite being mid ranked in the survey.

Recommendations for further research

The following recommendations are proposed with regards to further research: (i) an investigation into the application of risk management techniques in each phase of project life cycle thereby enhancing the applicability in practice of managing construction projects; (ii) investigate typical critical factors in accordance with the

type of organisations, especially private companies, 100% foreign invested enterprise and joint venture with foreign company because these companies are often confronted with many risks. This might have different critical factors rather than companies associated to state; and (iii) identification of risk management strategies for each of specific cases mentioned above.

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