

Approaches leading to a successful project: A Special Reference to Construction Industry in China

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Abstract

This paper analyses the approaches that lead to the success of projects in Chinese construction industry. The research data analysis reveals that the project manager is the crucial success factor for projects in the Chinese construction industry. Results also show that project success is the outcome of the project team effectiveness. Most respondents believed that project manager plays a crucial role in determining the project team effectiveness.

Introduction

In last few decades, the development of construction industry in China was rapid due to its dependence and relation with increase in the size of the national economy (Chen, 1997). However, the Chinese construction industry experienced a difficult period for many years before due to low quality of employee skills, inadequate planning and management, and long construction cycle (Chen, 1997).

Chen (1998) argued that the main challenge of Chinese construction industry was to improve the construction quality which could be attributed to weak management and inadequate skills. According to The State Statistical Bureau of China (1993), labor forces in the Chinese construction industry are massive; however, most of them are unskilled and only 8% of them are considered to possess technical skills. And more than 40% of them are farmers. In order to enhance the performance of the construction projects, the skillful and experience project managers were recruited from foreign countries in the last two decades to monitor the performance of the project. Additionally, the Project Supervision System (PS) has been introduced to ascertain the quality of construction industry in China (Tuuli & Rowlinson, 2009).

Chinese new construction market became the largest one in the world in 2011 and it has overtaken the USA's (Hammond & Anderlini, 2011). The construction industry was a huge success story in 2011 and the value it created was 22.6% more than the previous year (LuBan Consulting, 2012). The purpose of this research is to identify whether the project manager or project team effectiveness is the main factor that led the Chinese construction industry to overcome the challenges and achieve success in 2011. With this in mind, we identified three objectives for this research effort (Table 1).

Table 1 Three Objectives of this paper

Objective 1	To identify the relationship between the project manager and the success of the projects in Chinese construction industry
Objective 2	To investigate the impact of project team effectiveness on the success of the projects in Chinese construction industry
Objective 3	To identify the relationship between project manager and the project team effectiveness in Chinese construction industry

Based on the three objectives, the following three research questions were developed.

1. What is the relationship of project manager's competence and leadership style with project success?
2. What is the impact of conflict management on project team effectiveness, consequently, on the success of a project?
3. What is the impact of project manager's leadership role on the project team's effectiveness?

Rest of the paper is divided into four sections. First, we present literature review of the past research studies about the relationship between the project manager, project team effectiveness, and project success. In the second section, the research methodology has presented with a survey questionnaire as the most appropriate research method and target respondents such as the Chinese Building and Petro station projects were considered. In the next section, we present research results and analysis after analyzing the respondent data.

Finally, in the conclusion section, we discuss about limitations and recommendations.

Literature review

Project success has always been a popular topic in the project management literature (Cooke-Davies, 2001) and a number of research have already been conducted to identify the determinants of project success (Jetu & Riedl, 2012; Turner & Muller, 2005; Pinto & Slevin, 1988).

Project Manager Competence

Goleman (2004) showed that personal competence may be the main factor that determines the project success. It affects the way people behave and react in the work. He claimed that the leader should have self-regulation, motivation and social skills to motivate and communicate with team members. Lock (2013) suggested that project manager or leaders need to have skills in making clear decisions, delegating work wisely, and listening to the subordinates. Lock further suggests that they should possess general knowledge about the project and not necessarily specialized knowledge as their main duty is coordinating the activities and answering the questions from different subordinates.

Davis (1972) divided required competence for a successful leader into 4 different groups: social maturity and breadth, inner motivation and achievement drive, intelligence and human relations and attitudes. Ivancevich et al (1977) proposed six categories of the skills and characteristics that a successful leader should have, namely: physiological characteristics, social background, intelligence, personality related to work, and social interpersonal skills.

Social skills were considered as the crucial competency by many researchers. Roland and Sylvain (2013) defined social skills as a set of skills that inspires others to be more efficient. The project manager needs to be sociable in order to communicate with team members (Turner & Muller, 2005). Carrot-and-stick method is not enough to enhance the team performance and leaders need to be sociable to solve problems and communicate in an appropriate manner (Goleman & Boyatzis, 2008). The importance of the social skills of leadership is not new. In 1920, Edward Thorndike, the psychologist at Columbia University identified that the main reason for the failure of leadership is lack of social skills. Ireland (2006) suggested that social skills were used to achieve better leadership performance that embraced communication, conflict management, negotiation, and team development.

Communication skill is considered as one of the social skills. Shukla (2005) argued that there are three types of abilities that a successful project manager should have and they are conceptual, analytical, and technical. The manifestation of these abilities depends on communication skills of the project manager. Communication skills help the project manager to express social ability more successfully. Payne (2005) believed that with better verbal communication skills a manager would have less communication nervousness. The project manager can interact with team members effectively with good communication skills (Abbasi, Siddiqi, & Azim, 2011).

Leadership style

“Leadership is defined as the ability to affect the behaviour of the others to achieve the objectives and leadership style is the way that leader accomplish the influence” (Nicholas & Steyn, 2008, p547). Special leadership behaviour is developed by some project managers in order to enhance the success of the project. Cooke-Davies (2001) treated project management as a success factor, but did not consider the project manager’ leadership style in the list of success factors. In contrast, Morris (1988) highlights poor leadership style as a contributing factor of project failure. He believed that poor leadership has negative correlation with the outcome of the project. Pinto and Slevin (1988) identified the main reason for the omission of the project managers as a success factor is that project managers are too modest to categorize themselves as a critical success factor.

Muller and Turner (2007) identified that different leadership styles for various types of projects. Maylor (2010) argued that there is no single “recipe for leadership” that the project managers can apply to every project and be successful. Therefore, in order to contribute to the success of a project, the project managers need to adopt different leadership style according to the various situations. Nixon, Harrington and Parker (2012) stated that transformational and transactional leadership styles are the two popular leadership styles can be used to develop an appropriate leadership style.

Over the past few decades, the six schools of leadership have changed gradually and two types of leadership were identified by the visionary school, they are transformational and transactional leadership styles (Wu, Yang & Chiang, 2012). These two types of leadership were perceived as relationship-oriented and task-oriented (Fleishman, 1953; Halpin & Winer, 1952).

Keegan and Den Hartog (2004) defined the transformational leadership style as the ability of the leader to create a shared vision with team members based upon the relationship rather than the rewards. The transformational leaders achieve the objectives by inspiring and motivating their subordinates. Employees found that if the project managers who are transformational leaders exert a lot of extra effort to the project (Bass, 1997) and likely to contribute to the success of the project. On the other hand, Thite (2001) described transactional leadership style as a traditional view of leadership style in which the leader rewards their subordinates according to the performance with the main focus on the contractual agreement.

The usefulness of the leadership style depends on the type of the project and the phase of the project life cycle. Higgs and Dulewicz (2004) discovered that transformational leadership style is more suitable for complex projects while transactional leadership style is more appropriate for simple projects. The transformational leaders can react to the change more effectively; therefore, it is more effective for complicated projects. Frame (1987) and Turner (1999) argued that, to be effective, different leadership style should be applied at different phases of the project life cycle. Prabhakar (2005) advocates *switching* the leadership style to match the phases of the project life cycle and to remain on top during the dynamically changing situations in the project, which he terms as *switch leadership*.

Project team effectiveness

Past research focused on the project team effectiveness, the impact of conflict management on the effectiveness of the project team, and consequently on the success of the project as well. Parker (1990) suggested that not every group is a team and not every team is effective. The conflict management skill can

be used to enhance the team effectiveness thereby project success. For instance, Muzio et al (2007) listed conflict treatment as the factor that determines the project team effectiveness. They argued that conflict, if handled appropriately, would contribute to the project team effectiveness and success of the project.

Past research suggests that project team effectiveness has a high correlation with project performance. Over the years, more and more project managers identify the importance of the project team effectiveness and it is considered as a critical factor in the overall success of the project (Jetu & Riedl, 2012). Macaulay and Cook (1995) identified team's commitment, focus, and strength can be developed and maintained as a result of project team effectiveness. It indicates that project success is the outcome of the effective project team. Furthermore, Belout (1998) argued that effective project team management is highly correlated with time, quality and budget.

Conflict management

Conflict management is identified as the criterion that could cause project failure. Iyer and Jha (2005) asserted that it is not adequate to only identify and maximise the potential benefit of the critical success factors; it is equally important to minimise the possible negative impact of critical failure factor, such as, conflict. Conflict is an outcome of the differences; for example between the contractors and project team, in objectives, opinions, and the values (Nicholas & Steyn, 2008).

Nicholas and Steyn (2008) found that internal conflict can contribute to the failure of the project as a team member may not be able to make the right decisions and perform the right task. In reality, the project team is usually inherited (Maylor, 2010) and project managers cannot select the team members of their preference. Mostly, the team members are borrowed from the other departments and they have different style of working (Meredith & Mantel, 2012). Consequently, conflict management is essential for project team effectiveness. Holahan and Mooney (2004) opined that conflict has powerful and indirect correlation with the project success.

Relationship between project manager's leadership role and project team's effectiveness

A number of past research studies discussed about the impact of the project manager's leadership role in the project team's effectiveness. Nixon, Harrington and Parker (2012) found that a leader is one of the contributors to the team performance and leadership is highly correlated to the project team's effectiveness. According to Keller (1992), when the leadership is strong the staff has a greater sense of mission, purpose and importance of the project and as a result, leadership contributes to the success of the project. Mael and Alderks (1993) added that members' confidence in the team and perception of team effectiveness can be ameliorated by the cohesive leadership. Also, Zaccaro (2002) argued that team leadership is one of the characteristics of the effective team performance. Thamhain (2004a&b) suggested that the project manager plays a crucial leadership role in combining the project team.

As discussed above conflict management is correlated with the effectiveness of the project team and a leader plays an important role in handling the conflict. Sedairy (1994) suggested that one of the responsibilities of project manager is to manage conflict and lead the project team to be more effective (Randeree & Chaudhry, 2007). Randeree and Chaudhry argued that handling conflict is one of the leadership roles of project manager and leadership plays a crucial role in conflict management. Therefore, project manager's leadership has close connection with project team effectiveness.

Clear team goal was identified as the crucial characteristic of effective teamwork. Zaccaro (2002) identified the importance of the leadership role in defining clear team goals, specific team roles, and strategies to help team members less sensitive to the stress. Vaill's (1982) research on highly effective teams suggested that all the team members are committed to team goals. As the team members are never confused about their individual roles, many uncertainties could be eliminated. and the team effectiveness can be enhanced (Nicholas & Steyn, 2008). Kirkman and Rosen (1999) stated that having a clear goal is crucial for the project team to orient towards common objectives. Iyer and Jha (2005) found that clear goal is considered as one of the project success factors.

To sum up, project manager's competence and leadership style are the determinants of the project success, and the project manager needs to enhance project team effectiveness by managing the conflict. Further, the project manager's role and project team effectiveness are related.

Using the literature review findings, eight Hypotheses were proposed (see table 2) for testing to understand relations among the project manager, project team effectiveness, and project success.

Table 2, 8 Hypotheses referring to three research questions

H0 (1), There is no significant difference between the mean values of various experience group's responses to "project manager's competence is positively correlated with the outcome of the project."
H0 (2), There is no significant difference between the mean values of various respondents with different job title referring to "project manager's leadership style affects he overall performance of the project significantly."
H0 (3), There is no significant difference between the mean values of various respondents with different job title referring to "Transformational leadership style is more effective than the transactional leadership style in determining the success of the project."
H0 (4), There is no significant difference between the mean values of the responses of the various gender group toward conflict management is one of the determinants of project team effectiveness
H0 (5), There is no significant difference between the mean values of the responses of the various gender group toward project success is the outcome of effective project team
H0 (6), There is no significant difference between the mean values of the responses of various job titles referring to the way project manager manage its work inspires the team to better project performance
H0 (7), There is no significant difference between the mean values of the responses of various job titles referring to clear team goal affect the team effectiveness positively.
H0 (8), There is no significant difference between the mean values of the responses of various job titles referring to project manager play a vital role in handling the conflict within the project team.

Research Methodology

To address the knowledge gap about the project manager's leadership style and competence in project literature, this research effort is directed to explore their role as the critical success factors for the Chinese construction project. A primary questionnaire was designed to gather data pertaining to relations among project manager, project team effectiveness and project success in Chinese construction projects.

Research Methods

Primary and secondary research methods are commonly employed. Stewart and Kamins (1993) defined a secondary research method as the secondary data that has already been collected by the other researchers for different purpose, However, Glass (1976) argued that secondary data is not up-to-date and the purpose of collecting data might be varied. For instance Odusami et al's (2003) conclusion was based on the Nigeria construction industry while the targeted construction industry in this paper is in China; therefore the upshot might be different from Chinese construction industry. The primary research is needed to complement the drawbacks of the secondary research method in this paper (Veal, 2011).

Qualitative and quantitative methods are the two methodologies that can be used to collect primary data. Questionnaires are generally categorized as quantitative research while Bouma and Atkinson (1995) argued that the qualitative elements could be encompassed in the questionnaires as well. The combination of qualitative and quantitative questionnaires was considered as the most appropriate method for this research effort. There are a number of reasons why questionnaire is the most appropriate method; firstly, large amount of data can be collected from any number of targeted respondents in a short time. Secondly, there are no geographical boundaries. Additionally, the data can be tabulated and quantified quickly and it is easier to analyze the data that is collected using quantitative method rather than pure qualitative method (Krishnaswami & Satyaprasad, 2010).

Questionnaire design

Schwarz (1999) suggested that questions should only include terms that are familiar to the target groups. Therefore, the questionnaire was designed in English and translated into Chinese to make it easier for the targeted respondents in China. A total 20 questions were developed to address research objectives and hypotheses.

The questionnaire was divided quantitative questions and qualitative questions. Question 1 to 4 targeted information about respondents' age, gender, job title and working experience. Likert's five-point scale was chosen for questions 5 to 19 (1 referring to strongly disagree, 2 to disagree, 3 to neutral, 4 to agree and 5 for strongly agree). This Likert's five-point scale is expected to capture the level of agreement and disagreement of respondents, which is better than Yes or No question (Dawes, 2008). Question 20 is an open-ended qualitative question, designed to further investigate respondent's opinion about the project manager's significant competence.

Sample Selection and data collection

An industry-wide survey of Chinese construction industry resulted in collecting data from different construction projects. To make the data more representative, the targeted participants were chosen from different geographical regions such as, Beijing, Nanjing, Xiamen and Hong Kong. Project management professionals working in the construction project of Building and Petro station in different areas of China was considered as the targeted respondents for this study as the scale of the Chinese building construction projects is growing rapidly. More and more building construction projects are implemented in each city and they represent major percentage of Chinese construction (Zhida Consulting, 2012).

The questionnaires were sent to around 300 targeted respondents and 135 of them responded to the questionnaire (the response rate of 45%). Of those who responded, 21 of them did not answer the last open-ended question. SPSS software is considered as the most appropriate software for this study

Boone and Boone (2012) recommend appropriate statistical analysis tools for Likert’s five-point scale questions as shown in Table 3. Mean was used to measure the central tendency; however the mean value only tells one part of the story and standard deviation compliments it with the variability of the responses. The One-Way ANOVA test can be used to determine whether there is any difference between the mean values of diverse groups.

Table 3 Analysing tools for Likerts' Five-point scale questions

Measure	Tools
Central Tendency	Mean
Variability	Standard deviation
Other Statistics	ANOVA, t-test, regression

Result and Analysis

Reliability and Internal Consistency

In order to test the reliability and internal consistency of this questionnaire, Cronbach's alpha was computed. According to Nunnally (1978), the acceptable Cronbach’s Alpha value is from 0.6 to 0.8 and those higher than 0.8 are considered meritorious. The value of Cronbach’s Alpha for the 19 closed-ended questionnaire questions in this paper is 0.666 (Table 4). It shows that the 19 closed-ended questions are fairly consistent and reliable and therefore, responses can be trusted.

Table 4 Cronbach's Alpha for 19 questions

Reliability Statistics

Cronbach's Alpha	N of Items
.666	19
.716	15

In order to assess the reliability and internal consistency of the 15 Likert style closed-ended questions related to research objectives, further analysis was conducted and, the Cronbach Alpha value was found to be 0.716, which is higher than 0.666 for all the 19 questions. It indicates that there is a higher degree of internal consistency for questions that are important for this study.

Characteristics of respondents

Firstly, the majority of the respondents are 23 to 34 years old and 20.2% of the respondents are aged about 22. It comes as no surprise because a number of people who do not finish the school join the construction industry and people are eligible to work at the age of 18 in China. The response rate for gender is similar;

there is no significant difference between male and female. Most of the respondents are mainly project team members. As expected, about 52% of respondents have less than five years working experience because majority of the respondents are in the age group of 23-34 years.

Project Manager Competence

Table 5 shows mean and standard deviation values of each question. For instance, mean value of 3.65 indicates that majority of the respondents agreed rather than disagreed that project manager’s competence is positively correlated with the outcome of the project. However, with the standard deviation at 1.016, the responses to this question vary. Further analysis showed that 58 respondents agreed that project manager’s competence is positively correlated with the outcome of the project, and this finding is similar to what, Goleman (2004) found that project manager’s competence is the determinants of the performance of the project in his research paper.

Table 5: Result of mean and standard deviation for competence questions

	Project manager's competence is positively correlated with the outcome of the project	The importance of the competence is depended on the type of project	Social skill is more crucial than specialist skill in determining the success of the construction project	Communication skill is a crucial social competence that a project manager needs to have
N Valid	133	134	134	133
Missing	2	1	1	2
Mean	3.65	3.82	3.45	4.19
Std. Deviation	1.016	.734	.985	.780

Responses to other questions are similar except for the question on communication skill as a social competence (analysis of the open-ended question indicates that there are a number of respondents who have listed social skills as a crucial competency).

Table 5 shows that most respondents agreed that importance of the competence is dependent on the type of project and communication skill is crucial for project managers. About 86% (114 respondents) of them agreed or strongly agreed that communication is an important skill to have in Chinese construction industry and this finding is in agreement with the past research findings (Shukla, 2005; Payne, 2005 & Singh 2013).

One-way ANOVA result for the question about project manager’s competence show that the significant value is 0.063, which is greater than 0.05. Therefore, H0 (1) cannot be rejected; there is no statistically significant difference between the mean values of various groups. Respondents agreed that project manager’s competence is positively correlated with the outcome of the project.

Finally, the open-ended question was designed to further investigate participants’ view of the crucial competence that a project manager needs to have in order to enhance the performance of the project in Chinese construction industry. Many respondents listed more than one crucial competence, *communication*

has been listed more than 54 times, it reveals that many respondents consider communication as a crucial competence for being a successful project manager and this finding is in agreement with the past research findings (Abbasi et al, 2011; Shukla, 2005 & Payne, 2005).

4.4.2 Leadership style

Past studies show that the project manager’s leadership style was largely ignored in the list critical success factors (Turner & Muller 2005; Pinto & Slevin 1988; Baker, Murphy & Fisher 1988). Three questions were designed to assess the impact of leadership on project (Table 6).

Table 6: Result of mean and standard deviation for leadership questions

	Project manager's leadership style affects the overall performance of the project significantly	Transformational leadership style is more effective than the transactional leadership style in determining the success of the project	The effectiveness of the leadership style is depended on the complexity of the project
N Valid	134	134	131
Missing	1	1	4
Mean	4.09	3.59	3.37
Std. Deviation	.818	1.005	1.098

From the table 6 above, it can be seen that the mean value of the first question is more than 4, which suggests that the project manager’s leadership style affects the overall performance of the project significantly in the Chinese construction industry. This finding is similar to Geoghegan and Dulewicz’s (2008) research findings that leadership style of the project manager is a crucial project success factor.

One-way ANOVA result for the question about project manager’s leadership style show that the significant value is 0.03, which is smaller than 0.05 and therefore, H0 (2) can be rejected; there is a statistically significant difference between the mean values of different respondents with different job titles.

Furthermore, the mean value for each group as shown in Table 7 supports the above finding. Respondents who are categorized as “others” neither agreed nor disagreed that project manager’s leadership style have an impact on the success of a project.

Table7 Mean value of various job title groups

	Project team member	Project manager	Project support officer	Others
Mean	4.1	4.312	4.29	3.645

Most respondents agreed with “transformational leadership style is more effective than the transactional leadership style.” One-way ANOVA tests show that significant value is 0.317, and therefore, the H0 (3) cannot be rejected; there is no significant evidence shows that respondents with different job titles have

various opinions upon this question.

4.5 Impact of conflict management on project team effectiveness and project success

Results captured in Table 8 show that the mean value is significant (4.01) for the question pertaining to *project success is the outcome of the effective project team*. This result is congruent with past research. Macaulay and Cook (1995) concluded that the success of a project can be enhanced by an effective project team. More recently, Jetu and Riedl (2012) listed project team effectiveness as the critical success factor for the success of a project. Table 10 also depicts that the project team effectiveness is highly correlated with the project success with a mean value of 3.93.

Table 8: Result of mean and standard deviation for research question two

		Conflict management is one of the determinants of project team effectiveness	Internal conflict is considered as the reason for the ineffective team performance	The combining conflict model is more efficient than a single mode	Project team effectiveness is highly correlated with the project success	Project success is the outcome of effective project team
N	Valid	134	133	134	132	133
	Missing	1	2	1	3	2
	Mean	3.79	3.75	3.71	3.93	4.01
	Std. Deviation	.786	1.062	.916	.840	.812

As per our results, about 74 % of the respondents agreed that conflict management is one of the determinants of project team effectiveness which is supported by previous research findings (Nicholas & Steyn, 2008; Holahan & Mooney, 2004) that conflict is the determinant of the project failure and conflict management can contribute to project team effectiveness.

One-way ANOVA test to identify whether there is any significant difference between the mean values of various gender groups (Table 9). Both the significant value are greater than 0.05, therefore, the H0 (4) and (5) cannot be rejected; there is no significant difference between the mean value of these two questions in different gender groups,

Table 9: Result of One- Way ANOVA test

	Sig
Conflict management is one of the determinants of project team effectiveness	.125
Project success is the outcome of effective project team	.231

4.6 Project manager’s leadership role and project team’s effectiveness

As shown in Table 10, the mean value of the all the three questions are in the range of 4, which suggest that participants agreed with all the questions. Therefore, there is a close relationship between project manager’s leadership role with project team effectiveness and project performance. Findings of Nixon, Harrington and Parker (2012) have identified project manager as one of the contributors to the team performance and high project team effectiveness.

Table 10 Result of mean and standard deviation for research question three

		Statistics		
		The way project manager manage and lead its work inspires the team to better project performance	Clear team goal affect the team effectiveness positively	Project manager play a vital role in handling the conflict within the project team
N	Valid	131	132	133
	Missing	4	3	2
	Mean	4.01	4.25	3.98
	Std. Deviation	.846	.714	.798

Of the respondents, 105 of them suggested that project manager plays a vital role in handling the conflict within the project team in the Chinese construction industry and consequently on the project team effectiveness; therefore, the project managers’ leadership role is one of the determinants of project team effectiveness. Randeree and Chaudhry (2007) and Sedairy’s (1994) argued that one of the responsibilities of the project manager is handling the conflict.

One-Way ANOVA test results (Table 11), show that the significant values are above 0.05, and therefore, $H_0(6)$, $H_0(7)$ and $H_0(8)$ cannot be rejected.

Table 11: Result of One- Way ANOVA test

	Sig
The way project manager manage its work inspires the team to better project performance	.697
Clear team goal affect the team effectiveness positively	.085
Project manager play a vital role in handling the conflict within the project team	.815

5. Findings and Conclusions

Our research results suggest that there is a close relationship among the project manager role, project team effectiveness and project success. Results suggest that project manager’s competence is highly correlated with the project success in the Chinese construction industry, and concur with Goleman’s (2004) findings. Most participants of the research study underlined the importance of communication skill for the project manager in leading the project to success. Past studies concur with these findings that communication skill is

important for project managers (Abbasi et al, 2011; Shukla, 2005 & Payne, 2005) and communication skill is a core competence to handle the problems and lead the project to success (Shukla, 2005; Payne, 2005 & Singh 2013).

Additionally our findings reveal that project manager's leadership style affect the success of the Chinese construction project and are in agreement with Muller and Turner's (2007) research findings. Similar to past research findings (Keegan & Hartog 2004, Thite 2001, Bass 1997, and Frame 1987), our results show that transformational leadership was considered as more effective leadership style than transactional leadership style in determining the success of a project. They concluded that it is more effective to motivate project team members with the relationship rather than the rewards.

However, there is a disagreement between the literature review findings and results of this research effort that the effectiveness of the leadership style depends on the complexity of the project. Higgs and Dulewicz (2004) argued that transformational leadership style is more suitable for complicated projects while transactional leadership style is more appropriate for simple projects.

Our results show that project team effectiveness is highly correlated with the project success, which is supported by Macaulay and Cook (1995), and Jetu and Riedl's (2012). Macaulay and Cook (1995) concluded that the success of a project can be enhanced as a result of effective project team. Jetu and Riedl (2012) listed project team effectiveness as the critical success factor for the success of a project.

Our results also show that conflict management is one of the determinants of project team effectiveness, and this finding is supported by past studies (Nicholas & Steyn, 2008; Holahan & Mooney, 2004) that claimed conflict is the determinant of the project failure and conflict management can contribute to project team effectiveness and consequently, enhancing the performance of the project.

In conclusion, the relationship of project manager and project team effectiveness with the project success, the relationship between the project manager and project team effectiveness was explored with the data collected through questionnaire. Our research results indicate a close relationship among these factors in the Chinese construction industry. These findings are in agreement with several past studies including Harrington & Parker, 2012; Chen & Tjosvold, 2002; Thamhain, 2004a&b. Furthermore, Over 105 respondents suggested that project manager plays a vital role in handling the conflict within the project team in the Chinese construction industry.

6. Limitations of the Study

Although the research objectives have mostly been met, a few limitations exist. First, is the language issue of translating the questionnaire into Chinese and translating results back into English. It could be possible that the original intent might not have been represented accurately and omission of crucial information may have emerged. Second, a questionnaire as a research tool has limitations. For example, if the targeted respondents have any doubts or concerns about the question, they cannot find the people to consult on time. Third, the data were only collected from selected cities of China such as Beijing, Nanjing, Xiamen and Hong Kong with an assumption that respondents represent the population of the study. The result can be more representative and accurate if the data is collected from more cities to include a greater number of construction projects in China. Finally, Cronbach's alpha value of 0.761, could be a bit higher than

acceptable level. More actions can be taken to enhance the Cronbach alpha such as increasing the number of questions.

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