

# An investigation of the influence of project organizational culture on construction project performance: A study on Vietnam

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# 論文内容の要旨

## **Abstract**

For years, studies have reported that construction project performance has been plagued by critical problems such as poor quality, cost overruns, time delays, unsafe execution, and client dissatisfaction. Several studies on the factors that affect construction project performance have been conducted over the years, such as identifying Critical Success Factors (CSFs). Thus, a number of potential factors that assist the understanding of the phenomenon of project success have been investigated individually. Culture is believed to be an essential determinant of management practice; thus, culture has recently been addressed by researchers as a key factor in project performance within the construction industry. Construction project organization is managed by multiple individuals who come from diverse backgrounds, which causes different human interactions and different expectations of a project. Hence, the behaviors and/or attitudes of the individuals involved in a project are complicated and significantly influence project success. The culture factor is believed to generate differences in participant behavior. Misunderstandings between people and between businesses can result from cultural differences, which in turn can lead to conflict and dissatisfaction among construction project participants and create conflicts relating to human interactions, which decrease organizational capacity to achieve project objectives. Thus, in project management, culture should be considered a significant factor in managing conflicts, enhancing quality outcomes, and promoting innovation. However, the role of project organizational culture remains unclear because there are insufficient studies that focus on finding empirical support for the supposed positive relationship between culture and project success. Therefore, the cultures that are best suited to the peculiar nature and needs of the construction industry have not yet been identified. This research was thus undertaken to examine the impact of project organizational culture on project performance.

**Chapter 1** introduces the context within which the research is undertaken. The aim and objectives is stated. The scope and the research methodology applied are also briefly explained.

*Research objectives:*

The essential research aim is to empirically examine how important is project organizational culture in determining the performance of construction projects and the nature of this determinant, and to develop a model that will assist construction project organizations to assess, in terms of performance, the possible outcomes of their cultural orientation.

To achieve this, specific objectives are as follows:

1.To review literature on understanding of the critical factors (CFs) influencing project performance and the role of culture;

2.To clarify what is project organizational culture (POC) in the construction context based on literature of universal culture and organizational culture knowledge;

3.To develop a conceptual framework that represents the relationship between project organizational culture and project performance;

4.To construct a project organizational culture framework, which is used for predicting the project performance;

5.To examine empirically the potential relationships between each specific cultural dimensions and the project performance; and

6.To develop a model that describes the relationships between project organizational culture and project performance and helps to identify cultural orientations that significantly contribute to enhance the construction project performance.

*Research scope:*

The problem statement and the research aims found the scope of this study. As such, the temporary project organization in term of delivering a construction project is focally investigated in this research. The unit of analysis is thus the construction project, which is focally examined across Vietnam.

In addition, this study is not intended to develop a completely new project organizational culture model. Rather, it intends to identify those cultural artifacts that affect the project performance at the project level.

**Chapter 2** presents the profile of the construction industry of Vietnam, the status quo of procurement system of the construction industry, and the factors influencing performance. In particular, this chapter seeks to highlight the poor performance

and weakness of procurement system that still exists in the Vietnam construction industry. Also, there has been insufficient emphasis and empirical research on the role of culture within the project organization in enhancing performance.

The findings show that there has been a massive increase in the investment since 2000s. Along with this increasing investment, the construction industry has been reported to confront by a number of critical issues related to project performance, which has been plagued by problems including poor quality, cost overruns, time delays, unsafe execution, and client dissatisfaction. In addition, the current poor procurement system is detected that takes place on stages of pre-bid, bid information, bid evaluation, and post award. The factors relating to management mechanism, project characteristics, procurement approach, external environment, and project culture are clarified as influences of project performance. Project organizational culture is recognized as influencing performance; however, efforts and empirical studies intended to improve project performance have focused less on this area. It is thus appropriate to study cultural influence within project context.

**Chapter 3** reviews literature on culture issue that is relevant to project organizational culture, which helps to set up the conceptual framework for the research design. Specifically, the literature was conducted in order to develop the theoretical framework for the project organizational culture. It is thus to start with the cultural studies in general; at the organizational level; and the previous studies on the project organizational culture.

The findings show that studies on POC have less empirical focus; instead of this, most of previous claims were subjectively based on qualitative analyses. It is thus appropriate to empirically investigate POC, which helps to provide a comprehensive understanding of culture impacts in project management. As such, a concept of POC was necessary to propose as the foundation for the next investigations.

**In Chapter 4**, the discussions focus on the development of a conceptual framework of the relationship between project organizational culture and performance and on the development of appropriate hypotheses.

A conceptual model of project organizational behavior was developed based upon the knowledge of organizational behavior and characteristics of construction procurement. This model provides theoretically the relationships between culture

orientations and performance of construction projects, which supports to drawn and test the research hypotheses. Also, empirical evidence based on data collection is offered for testing of the hypotheses.

**Chapter 5** presents the research methodology adopted for undertaking this study. Arguments are presented justifying the choice of qualitative and quantitative approach. The data collection and data analysis are explained.

The qualitative approach is adopted to develop the theoretical conceptual framework and research hypotheses, which derived from literature review, observations, and preliminary interviews. The study starts with a comprehensive literature review that focally examines the areas of project performance; critical factors affecting performance; organizational culture and organizational behavior. This forms the basis for the development of a conceptual model of the relationship between culture and performance. A quantitative questionnaire survey of practitioners (i.e., contractors and project management personnel of clients) is followed to collect data on specific cultural attributes and performance, and analyses are conducted to investigate correlations between variables.

The data analysis is preliminarily undertaken with using descriptive statistics to provide useful insights. The further specific analyses are factor analysis, ANOVA, correlation analysis, and other statistical tests of significance. To facilitate the analyzing, an appropriate statistical analysis software (i.e., R) is employed to conduct the analyses. Also, a suitable and productive modeling technique is used in the form of multiple regression analysis, which helps to develop comprehensive models that depict the nature and extent to which project organizational culture influences construction project performance.

**Chapter 6** analyzes the characteristics of the projects that were surveyed, and also present an analysis of the data on project organizational culture. Further, an evaluation of the relationships between the cultural orientations and the project characteristics and procurement approach is also conducted to assess the role of the predecessor's aspects on successor as proposed by the conceptual framework.

The findings show that the characteristics of project such as project participants, project size, and fund of project do not influence on project organization culture. However, we have demonstrated that worker orientation is significant different in project type with regard to transport infrastructure and building facility. The study also reveals that the bid evaluation principles in regard

to fair and transparent competition, no intervention of bid process, trust on past performance of bidder, reasonable capability of constructor on site were positively correlated with project organizational culture. This statistical revelation indicates that the bid evaluation could therefore be the significant factor motivating participants to enhance positive behaviors during the course of project.

**Chapter 7** assesses the performance of construction projects in the Vietnam, where performance is the degree to which the project objectives are achieved. The performance of the construction project was assessed on the basis of the various outcomes pursued by stakeholders. As discussed in chapter 4, this research adopted eight primary performance indicators including satisfaction of client with quality, satisfaction of client with time, satisfaction of client with cost, satisfaction of client with safety and environment, profitability satisfaction, labor productivity, lessons learned, and overall performance. Discussions on these various outcomes are presented in this chapter.

It is noted that the project performance levels found in this survey study were overall on average, offering the room that participants can be better in collaborating for improvement the overall performance levels. As such, a further investigation of the participants' behavior during the course of project is needed in identifying orientations for the improvement.

**Chapter 8** investigates the extent to which the differences in cultural orientation are associated with the differences in performance outcomes. The potential relationships between the project organizational culture and the project performance outcomes are explored, determining whether or not any significant association exists. A model of the relationships, which describes each cultural dimensions accounting for (represented by the relative importance index) explaining the variation in the corresponding performance, is developed and presented in this chapter to help identify best practice cultural orientations.

The findings note that three predictors—goal alignment and trust (C1), contractor commitment (C2), and worker orientation (C5)—positively relate to both overall outcome and participant satisfaction, which may indicate that projects with higher levels of these predictors also have higher levels of participant satisfaction and overall performance. It is also noted that cooperative orientation contributes to enhancing labor productivity; while, the results of our study were unrelated to the variables included in the leadership commitment factor (C4). The finding also

demonstrates that contractor commitment (C2) plays the most vital role in most project outcomes.

**Chapter 9** is thus devoted to the process of validation to confirm (or disconfirm) the findings of the research.

This chapter provided evidences for the research validation through analyzing four main aspects of validation (i.e., internal validation, construct validation, validity of statistical conclusions, and external validation). It is noted that the findings of the validity process confirm the claims of this research.

**Chapter 10** summarizes the main findings and limitations of the research. Also, some recommendations are provided to both practitioners and further researchers.

In summary, this study was conducted to identify a project organizational culture framework from the perspective of work-practice based that is grounded in the difficulties experienced across the construction industry. This cultural framework was then used to analyze the significant associations between cultural dimensions and different aspects of project performance. These dimensions can be used to explain project performance, which were developed through the models that describe the relationships between project organizational culture and project performance and helps to identify cultural orientations that significantly contribute to enhance the construction project performance in Vietnam. The implication that can be drawn from this is that culture issue must be considered as a key factor in enhancing performance of the industry. Again, beyond providing justification for the calls for cultural change in the project organization, this research has also identified the direction of such change, and some of the drivers that need to be considered in trying to bring about such change.