



Effect of organizational culture on delay in construction

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Abstract

Delay is one of the most common problems in the construction industry. This study aims to explore the relationship between a construction company's organizational culture and delay. A questionnaire survey was administered to construction companies located in the U.S. and India in order to collect data on their organizational culture and the amount of delay that they experienced in their projects. The results of this study show that construction organizations in the U.S. are dominated by "clan" culture whereas those in India are dominated by "market" culture. The study also shows that the percentage of delay relative to project duration is lower in the U.S. compared to India. Despite the fact that delays are caused by a multitude of reasons often mentioned in the literature, statistical analysis indicates that there is also a significant relationship between organizational culture and the magnitude of delays. This relationship could be useful for a construction company in cultivating an organizational culture that is expected to reduce project delay. It could also be of benefit to international contractors relative to their expectations vis-à-vis time performance in projects undertaken in different countries.

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1. Introduction

Delay has always been one of the major problems in the construction industry. Delay in a construction project has severe consequences on most project goals (Enshassi et al., 2010; Kazaz et al., 2012). Over the years, professionals and researchers have investigated various aspects of delays such as their contribution to disputes and adverse relationships among the project participants (Al-Khalil and Al-Ghafly, 1999), their causes and entitlement issues (e.g., Fallahnejad, 2013; Mahamid et al., 2012; Abd El-Razek et al., 2008), their effects in project performance (e.g., Sambasivan and Soon, 2007; Odeyinka and Yusif, 1997; Aibinu and Jagboro, 2002), and delay analysis techniques (e.g., Hegazy and Menesi, 2008; Shi et al., 2001; Arditi and Pattanakitchamroon, 2006, 2008). Regardless of the issues investigated, delays' magnitude, causes, and remedies

may be different in different countries. For example, studies exist in the literature (e.g., Al-Kharashi and Skitmore, 2009; Sambasivan and Soon, 2007; Frimpong and Oluyowe, 2003) revealing that different causes of delay are experienced in different countries. In addition to studies that point to causes that are beyond the control of the project participants (e.g., adverse weather conditions and a declining economy), and causes that are initiated by the owner (e.g., design changes and delayed payments), quite a few studies found that many of the causes of delays are contractor-related (e.g., poor site management, subcontractor problems, poor scheduling, financial difficulties, and limited experience).

The specific question to be answered here is: "Why do construction companies experience different causes of delay in different countries?" Some researchers claim that a possible reason is national culture. For example, according to Lewis (2005), the perception of time is different in different cultures. In some western cultures (e.g., the U.S. and the Anglo-Saxon world in general), there is a linear vision of time and individuals cannot

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bear to be idle. Individuals dominated with western cultures think that things are done more efficiently if they do one thing at a time within a fixed schedule. In contrast, in some eastern cultures (e.g., India and Asian countries in general), individuals perceive time as cyclic, not linear, where the same opportunities or risks will present themselves in the future. Individuals dominated by eastern cultures do not prefer to make quick decisions or to treat a current deal on its present merits (Lewis, 2005). On the other hand, according to Naoum et al. (2015), organizational culture affects the approach to decision-making, the quality of communication, and working relationships. Can it also affect the delays experienced in different circumstances? This leads to the question: “Can it be that the different causes of delay experienced in different countries are related to the culture of construction companies?”

Even though there are signs of a possible relationship between time and organizational culture, none of the studies in the literature discusses whether there is a relationship between a construction company’s organizational culture and the delay they experience in their projects. The objective of the study is to fill this gap. It is hypothesized that the organizational culture of construction companies may affect delays in the projects undertaken by these companies. Understanding the relationship between organizational culture and delay could be useful in cultivating the right organizational culture that can reduce delay in construction projects. It is important to explore this relationship particularly because of the great impact of the construction industry on the economy of a country. Reducing delay in construction projects will effectively increase construction productivity and will affect the economy positively.

In order to investigate the relationship between the organizational culture of construction companies and delay in their construction projects, the situations in the U.S. and India are investigated in this study by surveying personnel working in the scheduling departments of construction companies in the respective countries. There are two reasons for performing the study in the U.S. and India. The first one is related to the magnitude of delay in construction projects in these two countries. According to a report prepared by the [United States Government Accountability Office \(2013\)](#), the delays experienced by the Department of Veteran Affairs in their largest medical-center construction projects ranged from 14 to 74 months, resulting in an average of 35 months per project. On the other hand, the annual report published by the [Ministry of Statistics and Programme Implementation \(2016\)](#) states that the time overrun in construction projects in India ranges from 1 to 261 months. These two reports show that the range of delays in the U.S. and India substantially differs from each other. The second reason is related to the national culture of the U.S. and India. A widely quoted study by [Hofstede et al. \(2010\)](#) about national culture revealed that American and Indian individuals’ scores on the dimensions of national culture are quite different. Therefore, two countries that are radically different from each other in terms of culture and delay in construction are the best candidates to be elected for this study.

The next section presents an overview of delay in construction, organizational culture in general, and organizational

culture in the construction industry. This is followed by outlining the research methodology and discussing the findings of this study. Finally, the paper ends with a conclusion that summarizes the findings, makes recommendations for schedulers, discusses the limitations of the study, and provides future research directions.

2. Theoretical background and literature review

2.1. Delay in construction

Even though achieving substantial completion within the specified period in the contract is an obligation for a contractor, construction time can be affected by unexpected events during the execution of the project. Unexpected events may be contractor-related (e.g., ineffective project planning and scheduling, rework due to errors), owner-related (e.g., change orders, delay in progress payments), consultant-related (e.g., lack of experience of consultant in construction projects, inaccurate site investigation), labor-related (e.g., absenteeism, low productivity), design-related (e.g., omissions in project design, design errors), material-related (e.g., late delivery of materials, escalation of material prices), equipment-related (e.g., equipment breakdowns, improper equipment), project-related (e.g., complexity of the project, changed conditions), and external-related (e.g., natural disasters, changes in government regulations and laws) (Arditi and Robinson, 1995; Shi et al., 2001; Kim et al., 2005; Sweis et al., 2008; Gunduz et al., 2013a). The delay caused by these unexpected events in an activity can occur in three forms (Keane and Caletka, 2015): (1) delay to commencement, (2) extended duration, and (3) suspension during performance. Delays can be categorized into three groups, namely (1) excusable compensable delays, (2) excusable non-compensable delays, and (3) non-excusable delays. An excusable compensable delay can be defined as the delay that is caused by actions that are outside of the contractor’s control but within the owner’s control (e.g., owner-directed changes, design revisions). Having an excusable compensable delay entitles the contractor to an extension of time and financial recovery. An excusable non-compensable delay is caused by actions for which neither the owner nor the contractor is responsible (e.g., severe weather conditions, labor strikes). This type of delay entitles the contractor to an extension of time only. A non-excusable delay is the delay that is solely caused by the contractor (e.g., lacking the proper equipment to perform the work, improper allocation of resources). Since the contractor is responsible for the delay, the contractor will not be entitled to an extension of time or damage compensation (Arditi and Pattanakitchamroon, 2006; Gould, 2012; Keane and Caletka, 2015).

There is extensive literature on causes of delay in construction. In this study, thirty-nine journal papers were reviewed in order to provide a better understanding to the causes of delay in construction. [Table 1](#) presents the major causes of delay in projects undertaken in twenty-three different countries, and sheds light on the most and least common causes of delay in construction. The most common causes of delay in construction are delays in owner

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