



Identification of variables that impact project success in Brazilian companies

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Abstract

This research aims to analyze the relation between project management maturity and the project success. Moreover, the moderating effect of top management support and the assignment of a dedicated project manager were analyzed. The methodological research approach was a survey of 336 professionals in the field of project management conducted in Brazilian organizations. The results show that project management maturity is significantly related to all vertices of the iron triangle (time, cost and technical performance) dimensions of success. However, it is not related to the customer satisfaction dimension. The two moderate variables, top management support and dedicated project manager, have significant impact on the time success dimension but not on customer satisfaction. It suggests focus on efficiency aspects rather than effectiveness aspects.

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1. Introduction

Projects in current business environments are considered not only solutions to technical problems but also a way to improve business and to implement changes (Andersen and Jessen, 2002).

Project management is designed to ensure the success of a project, which, according to Jha and Iyer (2006), is a subjective concept that depends on the perspective of the individual who is evaluating that success (Carvalho, 2014).

Traditionally, compliance with cost, schedule, and quality/performance (meeting specific requirements of the project) has been used as a criterion to measure project success (Barclay and Osei-Bryson, 2010; Meredith and Mantel, 2000; Pinto and Slevin, 1987). These dimensions, known as the “iron triangle”, though often criticized, are still considered the gold standard for measuring project success (Papke-Shields et al., 2010). Accordingly, a focus on these factors suggests that project management is expected to be

more concerned with organizational efficiency than with organizational effectiveness.

To better understand the causes of project failure, researchers explored a number of project management dimensions, including how projects are conducted and the internal and external contexts in which projects are executed (Papke-Shields et al., 2010). Over the last three decades, many authors have used different lines of research to identify the variables or conditions that lead to successful projects. Among these lines of research, the greatest number of publications is related to critical success factors (Fortune and White, 2006) and project management maturity models (Berssaneti et al., 2012; Jiang et al., 2004). The current business environment shares the general assumption that the adoption of project management methodologies driven by international bodies of knowledge (BOKs) and the achievement of maturity in this field result in improvement of both organizational performance and project performance.

Although businesses have been engaged in project management for more than half a century, its contribution to performance is still not acknowledged outside the group of professionals who believe in project management (Aubry and Hobbs, 2010). Some

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empirical studies support the general view (Besner and Hobbs, 2013; Chou and Yang, 2012; Hong et al., 2011; Kerzner, 2006) and highlight the challenges associated with the implementation of project management methodologies (Ala-Risku and Kärkkäinen, 2006). However, scholars argue that the contribution of project management methodologies to enhancing performance is a controversial subject that requires in-depth research (Aubry and Hobbs, 2010).

There is a lack of empirical and structured researches (Grant and Pennypacker, 2006) to address the relationship between project management and performance. There is the need to move on the predominant exploratory qualitative research to confirmatory quantitative approaches. This paper aims to fill the research gaps and to answer the research question “*what are the variables that influence project success?*”. This study analyzes the relationship between organizational maturity in project management and project success. Moreover, the relationships between two critical success factors (top management support and dedicated project manager) and the success of executed projects are also analyzed. A quantitative research approach was applied, using a survey-based research, involving 336 project management professionals from companies in different sectors of the Brazilian economy.

This paper is divided into five sections. Section 2 presents a synthesis of the theoretical discussions regarding project success, critical success factors (CSFs) and maturity. Section 3 presents the methodological approach used in the field research. Section 4 presents an analysis of the results, and Section 5 presents the conclusions and limitations of the study.

2. Literature review

This section aims to present a review of the pertinent and relevant literature related to the research topic. The concepts used in this study, which include project success, critical success factors, and maturity models in project management, are first presented.

2.1. Project success

The goal of project management is to ensure the success of the project. However, companies face new challenges when adopting project management methodologies, for example, in construction projects, as suggested by Ala-Risku and Kärkkäinen (2006), or in information systems (IS) projects, as suggested by Barclay and Osei-Bryson (2010).

Furthermore, success, as a subjective term, is dependent on the perspective of those who are measuring it (Jha and Iyer, 2006). According to Barclay and Osei-Bryson (2010), a key challenge in IS projects often includes the lack of clearly defined objectives and the mismatched stakeholders’ expectations (project sponsor, external consultant, staff and executive management). Moreover, the success criteria can vary from project to project as they are dependent on the context and on the perspectives of the various construction stakeholders (client, consultants, and contractors), according to Toor and Ogunlana (2010). Corroborating this assumption, some authors, such as Chou and Yang (2012) and

Vries (2009), who have applied the stakeholder salience theory and identified a strong influence based on the interests of various stakeholders, recommend the use of stakeholder analysis.

Factors such as time, cost, and quality are traditionally used as criteria for measuring project success (Pinto and Slevin, 1987; Mullaly, 2006; Papke-Shields et al., 2010). These criteria comprise the “*iron triangle*” (Meredith and Mantel, 2000; Pinto and Slevin, 1987) in which a project is considered a success when the cost is very close to the initial budget planned, the estimated schedule is met, and all deliveries meet the requirements established by all parties involved in the project. However, there is no consensus regarding the success criteria among researchers (Jha and Iyer, 2006) because there are many variables that can affect success, such as the context of the internal organization and the external environment in which a project is performed, and can influence both the outcome and the success of a project (Papke-Shields et al., 2010). In addition, over the years, the three criteria (time, cost, quality), often called the basic or traditional criteria, have been criticized because they seem inadequate. Some authors consider them excessive, while others consider them incomplete (Yu et al., 2005). Accordingly, several efforts have been made to overcome the inadequacies. These attempts can be grouped into two different approaches: (1) adding more dimensions to the traditional criteria (iron triangle), exploring the variables that can impact success; and (2) reducing various criteria to a single evaluation criterion, the financial criterion (Yu et al., 2005). The second approach considers that time and quality are project cost variables (Yu et al., 2005). This study is aligned with approach 01, exploring variables that impact project success.

With respect to the context of an IS project, Barclay and Osei-Bryson (2010) adopted the following performance evaluation criteria as objectives: develop quality reputation, maximize revenue, maximize staff competences, maximize efficiency, and maximize record keeping. Jugdev et al. (2007) highlight the relationship between project management and the capability of the firm based on the VRIO (valuable, rare, inimitable, organizational) framework from the research based view.

The literature review suggests that project management is expected to be more concerned with efficiency than with effectiveness. However, Rauniar and Rawski (2012) argue that the failure to strategically manage important projects can limit the competitive growth of a business.

Because of the complexity of the project success concept discussed above and the lack of consensus among authors in the field, the traditional dimensions of the “*iron triangle*”, albeit criticized, are still considered central to the measurement of project success (Papke-Shields et al., 2010). Agarwal and Rathod (2006) stated that cost, time and quality (functionality) are still important criteria for evaluating the performance of software projects from the professional’s point of view, and these criteria have been used in several studies, both alone and in combination with other measures.

The present research used the basic dimensions, denoted as efficiency by Shenhar and Dvir (2007). Project performance was evaluated according to the planned budget, the schedule, the technical specifications (product/service requirements), and

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