Assessing the Influence of Project Success Factors (PSFs) on Project Performance among Organizations

By Sekou Marouf Magassouba & Muhammad Omar Al Thunibat

Abstract- The demand for project effectiveness in its early phase to enhance the success rate is increasing among project management professionals. Several success factors had been studied in the last decades to determine the issue of project success. However, the practice of determining the success of a project based exclusively on the criteria of time, cost, and quality is no longer relevant and deemed out-dated. Accordingly, identifying critical project success factors (PSFs) at the initial stage of a project to improve the likelihood of successful implementation remains the challenge for project managers within organizations. As a result, this paper provides meaningful theoretical framework of project success factors especially, project planning, and top management support, as well as their relationships with project success. It is expected that, the finding would contribute to fill the current research gap for future research projects, and it would contribute in great extent to the successful project implementation among organizations.

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I. INTRODUCTION

Project management is widely acknowledged as the most critical tool and technique used to achieve the strategic goals of organizations. Since last decades, a great discussions have been carried out on the issue of project success, and it is currently one of the most researched topics in the project management field (Cooke-Davies, 2000; Turner & Serrador, 2015; Anantatmula & Rad, 2018; Serrador & Reich, 2018; Müller, 2019). As time goes by, the conventional measurement of project success has always focused on tangibles, and traditionally based on whether it achieved time, cost, and quality specifications (Turner & Zolin, 2012; Anantatmula & Rad, 2018).

However, current thinking measure the overall success of the project about how well the project achieves its strategic goals, and the degree of satisfaction of its stakeholders (Turner & Serrador, 2015; Eskerod & Larsen, 2018; Sperry & Jetter, 2019). The high prevalence of using projects in various fields determines the increasing importance of project management, and consequently, the concept of successful project management refers to the effective integration, planning, organizing, reporting, monitoring, and controlling all aspects of the project which are vested to an individual or group within the organization (Cleland, 1999; Gauthier & Ika, 2012; Westerveld, 2003).

As the term "success" differs considerably among scholars (Pinto & Slevin, 1987; Shenhar et al., 2001; Gauthier & Ika, 2012; Joslin & Muller, 2015). The overall project success is a much wider concept than the conventional “Triple Constraint,” “Golden Triangle,” “Triangle of Virtue,” or the “Holy Trinity” criteria of time, cost, and quality/scope. For instance, there are several projects that have been completed within the expected time, cost, and quality, but still considered as unsuccessful; while there are also many other projects that have exceeded their initial time, budget, scope, and quality specifications, but ultimately viewed as successful. This paradox and interpretations of what constitutes success led to various dimensions of project success. It revealed that there is no single conventional measurement of project success ((Pinto & Slevin, 1988; Shenhar et al., 2001; Jugdev & Muller, 2005; Davis, 2017).

Moreover, the assessment of project success can vary based on the types, size, and scope of the projects. Over the triple constraint, the most well-known Project Success Factors (PSFs) that often affect project success include: project mission, top management support, project schedule and plan, stakeholders’ satisfaction, effective communication and procurement, monitoring and feedback, qualification of project managers, troubleshooting, etc. (Pinto & Slevin, 1988; Cleland, 1999; Bryde, 2005; Müller & Turner, 2007; Kerzner, 2009; Joslin & Muller, 2015; Badewi, 2016).

Furthermore, project success factors are considered as all the elements that are needed to form a context where project managers can deliver their projects successfully (Ika et al., 2011; Khang & Moe, 2008; Struyk, 2007). However, it is becoming more challenging to identify a set of PSFs that are common to every type of project. In that respect, different models of critical success factors were developed through project management literature (Pinto & Slevin, 1988; Westerveld, 2003; Bryde, 2003; Lewis, 2006). And it was found that the connection between the research on project success criteria and Project Success Factors (PSFs) was the most effective way to establish a successful...
project management framework (longer-term outcome). Understanding this notion from both practical and theory will lead to the development of a successful project management model (Shenhar et al., 2001; Cooke-Davies, 2002; Turner & Müller, 2007; Eskerod & Larsen, 2018; Sperry & Jetter, 2019).

Researches on project success factors identified different levers that project managers can employ to enhance the likelihood of project success (Pinto & Slevin 1988; Cooke-Davies, 2002; De Lone et al., 2003). Those approaches have emerged by grouping PSFs as a set; instead of focusing on a few factors alone. Thus, the current theoretical framework provides interaction between different groups of factors associated with the project success. The method involves the relationship between project planning, top management support, and project success (Nguyen & Wong (2009).

Accordingly, this study investigates the influence of project success factors, namely project planning and top management support on project performance. Hopefully, the findings would provide for project managers, members, suppliers, sponsors, committees, or task forces an advanced technique and tool for successful project initiating, planning, tracking, monitoring, and controlling within organizations.

II. Literature Review

a) Theoretical Framework

The issue of delivering a successful project in a dynamic environment had been recognized in the project management literature (Collyer & Warren, 2009; Killen & Petit, 2012). As project management is relatively a growing discipline, the concept of project success is ever open to interpretation and debate among project management scholars (Pinto & Slevin, 1987; Cooke-Davis, 2014; Turner & Muler, 2007; Shenhar et al., 2001).

First of all, project success is used to enhance the performance of the organization, and therefore ensure its stability (Engwall & Jerbrant, 2003; Davis & Cobb, 2010). So, managing adequately potential change and uncertainty of the project is vital for successful project delivering (Lim & Mohamed, 1999). For instance, if project managers can effectively manage different stakeholders, then they can reduce uncertainty and risks in a dynamic environment. Then the effective management of stakeholders generates a good advantage for projects, which will allow organizations to create more value than its competitors and ensure a successful return on investment of the project (Beer & Tekie, 2005; Uribe & Uriburu, 2018; Oyeyipo & Ojelabi, 2019).

As a result, this study developed a simple theoretical framework to investigate the influence of project planning and top management support on project success the review showed how each approach would be integrated and unified with the objectives of the present study, and how they would improve the likelihood of project success. The theoretical framework of this study involved two popular management theories, especially the Theory of Constraints (TOC) and the multidimensional theory of top management as follow:

- **Theory of Constraint (TOC)**

  The primary role of project managers in a successful project is managing properly the constraints attached to the project (Kishira, 2018). Traditionally, project success was measured using the “triple constraints” of time, cost, and scope/quality (Müller & Jugdev, 2012). These critical factors are mutually dependent, and therefore, a change in one will have a resultant effect on at least one other part.

  The Theory of Constraint (TOC) is used to track the project plan, to manage the limited resources, and to keep the scope within the specifications (Steyn, 2002; Hammad & Ryan, 2018). TOC helps to identify project risks, to enhance its social development and improve its technical requirements. Cleland et al. (2009) reported that organizations should focus more on performing the project plan and to identify the major constraints that prevent the project from success. Also, Johansen et al. (2006) argued that detailed project planning would not predict the constraint-based problems accurately (delays, overbilling, or changes in scope); instead, it would bring the process up by improving the efficiency of each phase of the project. Moreover, the application of TOC, as mentioned by Rand (2000), needs a supportive organizational policy, sufficient resource availability, and a realistic project timeline as it includes a sequence of progressive enhancement of project situations. The objective is to explore the weakest links in the project management plan and apply the proper strategy to deal with those constraints.

  The method of TOC is employed throughout the project life cycle on project planning to reduce potential delays, cost overrun, and change in scope as reported in PMBOK Guide (PMI, 2013). In the initiation, planning, and execution phase, project managers can minimize uncertainties and risks by using prior techniques and strategies which have been successful in the past. Then, the challenges for project managers during each stage would be to keep project cost, schedule, or specifications on the track and to implement any corrective actions to address issues. The technique will be a continual process improvement until the closing stage where the final review of the project and documentation of “experience learned” is conducted (Cleland, 1999; Rand, 2000; Sari & Siboro, 2019).

  Furthermore, the approach of TOC provides a comprehensive solution to address the issue of delays during the project execution. The solution involves a
realistic and solid project planning, effective tasks execution process, adequate methodology for operations, and good control procedures for the overall performance of the project (Momanyi & Sang, 2019). As the main objectives of this study is to investigate the impact of project success factors on project success, the application of TOC will be the way of enhancing the efficiency and effectiveness of the project. (Goldratt & Cox, 1984; Ahlemann et al. 2013; Sarkar & Patel, 2018). On the other hand, the structure and complex nature of projects made the creation of different project management tools, such as Program Evaluation Review Technique (PERT) and Critical Path Method (CPM). With the support of these two mathematical models, it is has been possible to optimize the programming and implementation processes of project, to estimate time, as well as to cope the length of project uncertainties (Rand, 2000; Sari & Siboro, 2019; Bangphan & Phanphet, 2019).

Additionally, through the literature of project management, we found a number of TOC research as applied theory (Izmailov & Kozhemiakin, 2016; Thürer & Stevenson, 2018). And likewise, this current review demonstrates that the essence of using the TOC approach in improving the performance of project is relevant, and its contribution in the optimization of project planning processes is vital to achieve the strategic goals of the project, to estimate the entire completion time of the project, to control, and keep the ongoing project plan on track (Steyn, 2002; Ahlemann et al. 2013 Hammad & Ryan, 2018).

- **Multidimensional Theory of Top Management**

  The multidimensional theory of top management refers to the development of project managers' skills to ensure project success properly. Project success is broadly discussed in project management literature (Pinto and Slevin, 1988; Cooke-Davis, 2002; Serrador & Reich, 2018; Zuo & Nguyen, 2018). Researchers identified various success factors influencing projects, among which top management support is considered as one of the most critical (Pinto and Slevin, 1988; Ziemba & Oblok, 2013). The support of senior management is determinant to ensure success; in contrast, the lack of support from the top management may also constitute one of the primary causes of project failure (Zwikael, 2008).

  As this study adopted Boostra (2013) multidimensional theory of top management, with the dimensions of resources provided, structural arrangements, communication, power, and expertise, top management support reveals to be a fundamental project success factor (Zwikael, 2008; Shao & Hu, 2016). The basic principles of this integrated approach are system adaptation, improving organizational effectiveness, effective controlling procedures, implementing organizational change, and strengthening the stakeholder’s support and involvement (Boonstra, 2013).

  The support from the top management is fundamental for the project team in achieving project goals (Crawford, 2009; Liu & Chua, 2015; Ali & Israr, 2018). Through the functional structure of organizations, top management facilitates an adequate team formulation, resource allocating, and successful project delivering (Belassi & Tukel, 1996). Senior managers should establish and perform an appropriate project implementation process, procedures, and structures in that respect.

  Similarly, top management support is essential in a successful project. The theory had been consistently deployed to deal with the project team to achieve project goals. (Chen & Popovich 2003; Boonstra, 2013). From this point of view, top management should keep regular communication lines with various groups of stakeholders, promote the company-wide acceptance, practice incentive support toward the project team, and manage potential organizational changes (Boonstra, 2013).

  Practical top management support is the foundation of successful project execution. Project managers in providing structural arrangement, power, and authority, financial and human resources are then contributing unquestionably to project success (Morgan, 2012). Top managers use their power to influence the project, protect the team members, facilitate the potential system changes, and identify the needs, roles, and responsibilities of project stakeholders (Hwang et al. 2012; Young & Poon 2013; Boonstra, 2013). The responsibility of top managers in project performance is capital, and recent investigations acknowledged it as one of the most critical success factors (Badewi, 2016; Ali & Israr, 2018; Ahmed, 2019).

  **b) Hypotheses Development**

  The development of hypotheses aims to highlight the relationship between constructs involved in the study, as well as to establish their influence on project performance in order to improve the likelihood of project success. Therefore, the following hypotheses are formulated:

  i. **Project Planning and Project Performance**

  Project planning had gained great attention in previous studies as critical success factors associated with project success among organizations (Cleland, 1999; Dvir et al., 2003; Iyer & Jha, 2006; De Snoo et al., 2011). For instance, Hwang et al. (2013) conducted a study on CSFs affecting project success in public construction projects in Singapore. Their findings showed that improper project planning, lack of coordination among project activities, as well as inadequate competence among the project planning team would affect project success. Frisch (2009) also assessed possible barriers in scheduling; he found that
a lack of rigorous team training on schedule and insufficiency of resources often influence project performance.

Iyer and Jha, (2006) conducted another study on planning performance in Indian construction projects; they found that factors such as the commitment of different project stakeholders, support of project owners, and competence of project teams in planning were regarded as factors contributing significantly to project success. They also revealed that adopting proactive scheduling with realistic programs and a practical open communication approach is critical in planning and help to achieve the project’s goals. Moreover, Snoo et al. (2011) assessed the factors impacting project success from a planning perspective and the number of stakeholders. They found that project schedules did not seem to be adequately considered by both project managers and their planners, as many criteria were dismissed while developing and implementing a project plan. The authors developed a measurement framework on scheduling performance, and they categorized the factors affecting planning performance into four main groups: factors focused on the schedule outcomes, factors focused on the scheduling process, indirect scheduling performance factors, and influencing factors.

Consequently, Wang (2008) and King et al. (1986) examined different factors influencing project planning processes within organizations, especially factors causing delay during the planning and implementation phase. They revealed that changes in the requirements of project stakeholders, ineffective scope definition, and an ambiguous initial or outline plan were the top factors causing delay to a project. Dvir et al. (2003) developed the relationship between project success and project planning from the view of project stakeholders. They reported that stakeholders have a significant impact on project planning procedures and adequate identification of key stakeholders since the first milestone of planning is fundamental to deliver a successful project.

The application of the project plan and practice was previously discussed in the project management context, and the main objective of planning was then to ensure that the project work was implemented as originally planned. It means to define goals adequately, to identify tasks, to monitor progress, and to provide the basic foundation for measuring success throughout the project lifecycle as stated by (Ahuja & Thiruvengadam, 2004; Baldwin & Bordoli, 2014).

Moreover, according to Cleland (1986), the connection between project planning efforts and project success is based on three aspects: project requirements, technical specifications, and management processes or procedures. This idea was supported and developed by (Dvir et al., 2003). In their different studies, they found a positive connection between the three requirements and project success. They explained that project managers, contracting officers, or the end-users explore project planning requirements with the perspective of the final results of the project. So although planning does not ensure the success of a project, a lack of planning could lead to its direct failure Cleland, (1986).

Accordingly, the positive relationship between project planning and project success had been established in the project management field (Wang and Haga, 2008); Dvir and Shenhar, (2003). The effort invested in the project planning phase and the degree of performance achieved, determine whether or not the project was successful. The project stakeholders will judge success by asking whether or not project goals were completed within the planned specifications (Andreas, 2016). However, a project plan in advance cannot overcome all unforeseen events, risks, or uncertainties, but having a plan with threats is still better than getting any plan. Thus, the main challenge for project managers remains their ability and aptitude to keep the project plan on track, within the time and budget, and quality (Baldwin & Bordoli, 2014). As a result, keeping in view these relationships and alongside the literature review, the following hypothesis is proposed:

_Hypothesis 1:_ Project planning has a significant and positive effect on project performance among organizations.

ii. **Top Management Support and Project Performance**

The present study adopted the function of top management established by Boonstra (2013) as an instrument to examine the relationship between top management support and project performance. The top management support theory developed by Boonstra (2013) through exploratory research identified top management support as a multidimensional construct. Relatively, many studies found that top management support is among critical success factors (Besner & Hobbs, 2008; Lester, 1998; Whittaker, 1999; Zwikael & Globerson, 2004; Johnson et al., 2001; Boonstra, 2013).

The previous literature on project management revealed that top management support contributes highly to project success (Besner & Hobbs, 2008; Zwikael & Globerson, 2004; Johnson et al., 2001). Belassi and Tukel (1996) have mentioned that most of the critical success factors are quite different across industries, but top management support is still the most relevant, and common success factors within organizations. It means that the more top management support is practiced in the organization, the higher the level of success will be.

Moreover, the demographic profile such as position, experiences, personality, leadership, or attitude of project executive would ensure project success, but...
Unfortunately, few studies had been written about these questions. Baccarini and Collins (2003), Bryde and Robinson, (2005) reported that success criteria vary across industries. And with limited time and resources, it is essential to identify effective top management support procedures that are specific to each project or industry.

Top management commitment is a crucial enabler for successful project implementation. Senior management support is essential for setting up the vision, mission, goals, strategies, and integration of the project within the organizations (Stein & Pinto, 1986). Top managers are critical to the project success when they are highly supportive in providing sufficient human, material, and financial resources to the project team (Young & Poon, 2013).

Additionally, top management support is the degree to which senior managers understand the importance of the project's purpose and the extent to which they are willing to achieve it. Several studies pointed out top management support as one of the most influential success factors in the project management field (Henard & Szymanski, 2001; Cooper & Kleinschmidt, 2007; Talke et al., 2010; Graner & Müller-Behr, 2013). One of the roles of senior management support consists of providing sufficient resources for the project team and keeping continuous communication line with stakeholders to support project goals (March & Simon, 1958; Talke et al., 2010; Boonstra, 2013; Kerzner, 2019). And as stated by Kerzner (2019), support from the top management brings confidence to the project team and guides them toward successful project delivery. Thus, the following hypothesis is proposed:

**Hypothesis 2:** Top management support has a significant and positive effect on project performance among organizations

**III. Conclusion**

The primary concern of project management is to improve its conceptual and theoretical foundations. Therefore, this paper provided the review of the literature to show the relationship between Project Success Factors (PSFs) and project performance. Through the literature, we found a positive impact of PSFs namely, project planning and top management support on project success. The empirical review concludes that project planning and top management support have a significant influence on successful projects. The findings are significant in providing more detailed information regarding the concept of successful project management. Consequently, the findings would assist project managers, team, and employees as well as the general public in gaining a better perspective of project management. Also, The study would be useful in identifying critical success factors in a way that can be reflected positively on the project performance. Finally, findings of this study would help in developing new techniques and tools to fill the gap in the relevant literatures in improving the project delivery performance.

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