Factors Effecting Performance of Projects: A Conceptual Framework

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Abstract— a conceptual framework is developed to reflect key factors which affect the performance and outputs of projects. It is based on extensive reviews of literature, especially journals and books. The things which influence performance and outcomes were teased out in this process. Literature suggests that there are three main factors that affect project performance and outcome, namely organizational culture, project management culture, and the project manager. Some elements of organizational culture are values, norms, artifacts, and leadership. Some elements of project management culture are strategic emphasis, top management support, PM methodology, stakeholder's commitment, communication system, and project review and learning. Some influencing aspects of the project manager identified are competencies and skills, capability, self-sufficiency, and leadership style. In order to highlight and show the connection between these three factors as well as prepare ground for a future investigation of how these factors affect project output, it was important to develop a conceptual framework that brings together these three factors in a logical manner. This paper focuses on the development of the conceptual framework and proposes lines of inquiry which can be researched further. The conceptual framework is particularly recommended to Abu-Dhabi Police to help improve the performance and outcomes of their projects.

Index Terms— Project manager, Organizational Cultre, Project management Culture, Organizational Values,Project, Conceptual Framwork, Factors effecting project.

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1 INTRODUCTION

CONSTRUCION projects are executed to accomplish certain outcomes. Firstly, most projects will involve either the creation of new facilities or the upgrading or refurbishment of existing facilities. Projects range from the small to the mega size and common to all is the utilization of resources. Each project would have an overarching objective that the facility or facilities arising from it should be fit for purpose by enabling certain functions to be carried out therein. Other objectives of projects would then concern, say completion on time, to a certain budget, quality, etc. These objectives become the yardsticks with which project completion is often assessed. It is thus ideal to specify these objectives upfront. Most contract documents would reflect the objectives of a project even if the information is not in one place.

When construction is finished and facilities are ready to be handed over to the client, it is often ideal to check if the objectives of the project have been achieved. A prudent client would carry out such an assessment. Literature suggests that clients are not always happy with the outcome as one or more objectives are often either not achieved or under-achieved. At the beginning of a project, most clients and contractors would have the intention of achieving these objectives. So, some things intervene to affect the achievement of objectives. These intervening influences are the subject matter of this article and literature was used to tease these out as a prelude to an empirical study. Sections 2 and 3 of the article will discuss the factors which influence project outcomes. Section 4 will then develop a conceptual framework on the basis of sections 2 and 3. Based on this framework section 5 will posed some research questions that are particularly useful to Abu Dhabi Police before the conclusion is made in section 6.

2.1 FACTORS AFFECTING THE OUTCOMES AND PERFORMANCE OF PROJECTS

According to Stare (2011) different reasons may lead to a project's failure, such as an unclear characterization of the objectives, an insufficient project schedule, many changes, inadequate control, ineffective communication, an unclear role of the stakeholders, or no top management support. These reasons are all related to the organizational system and can be associated with one of three main aspects: organizational culture, project management culture and the project manager (see Figure 1).
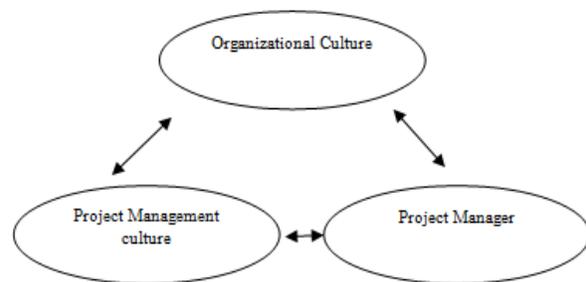

Figure 1: An Organizational System [29].

Figure 1 illustrates that a project manager's performance will be affected by organizational culture and project management culture within the organization. So changes in any aspects of the organizational system will have an effect on the perfor-

mance of the project manager and the project outcome as well. Previous studies have identified several attributes which affect the performance and outcome of projects [10]. Generally the attention of different researchers who have described and explored factors affecting projects' performance and outcomes has been mainly directed at three main streams. The first stream emphasizes the project manager's characteristics [48; 50; 24; 14; 2]. Literature demonstrates that a project manager's skills, competencies, leadership, and motivation influence project success. The second research stream emphasizes organizational factors. References [4; 6; 43; 30] have investigated several organizational cultural variables that influence project success such as organizational strategy, structure, system, culture types, and behavioral patterns. The third research stream emphasizes project management culture where authors references like [25; 3; 52; 34; 29; 18; 22; 21; 35; 34] have indicated that project management culture is important to project success. Table 1 gives details of these three aspects.

Table 1 Factors affecting the outcome and performance of projects:

Project Success Factor	Elements of a Factor	Researchers
Project Manager	Competencies and Skills Capabilities Self-Efficiency Leadership Style	Anantatmula, 2010; Dvir et al., 2006; Lackman, 1987; Prabhakar, 2005; Turner and Müller, 2005; Wellman, 2007; Muller and Turner, 2007
Project Management Culture	Strategic emphasis Top management support Project management methodology Different stakeholder commitment and involvement Communication system Project review and learning	Graham and Englund, 1997; Plussis, 2004; Plussis and Hoole, 2006; Lindbergh, 2009; Stare, 2011
Organizational Culture	Values Norms Artefacts Leadership	Armstrong, 2009

The three factors in Table 1 are discussed more below.

2.2 THE PROJECT MANAGER

Reference [17] studied delays of projects in UAE and they found that delays of UAE projects are due to the shortage of skills and manpower, inadequate supervision, poor leadership, and shortage of materials and equipment on sites. Differ-

ent researchers have studied the influence of the project manager's characteristics (competencies and skills, capabilities, self-efficiency) on the performance of projects. For example, References [27; 12; 50] found that there is a significant correlation between the performance of the project manager and project success. In addition reference [14] looked into the relationship between the project manager's personality and leadership style, project types, and project success. They concluded that project managers are attracted to certain projects that fit their skills and personality; therefore they are more successful in these projects. Moreover, reference [51] found that the project manager's personality, leadership style, characteristics and skills have a strong influence on project success. In line with these studies, reference [2] found that the project manager's managerial skills and leadership style play a critical role in establishing trust among the project team, which affects project outcome and performance. Reference [24] conducted a research into the factors that contribute to an effective project manager; and concluded that leadership style is the most important attribute of an effective and positive project manager. So several aspects of the project manager impact on and contribute to project success.

2.3 PROJECT MANAGEMENT CULTURE

Several researchers have investigated organizational factors which influence the performance and outcomes of projects. References [18; 34; 35; 29; 48] addressed the notion that project management culture is a culture within organizations that considers projects as the main tool to achieve their visions. Reference [38] supports this view. Project management culture provides project managers with policies, processes, structure, tools and resources, to achieve project constraints [47; 9; 29]. According to reference [17], project management culture is an effective tool in achieving organizational strategic objectives. In addition, different researchers have argued that there is a positive relationship between project management performance (project management culture practices) and project success [7; 33].

2.3.1 COMPETENCIES AND SKILLS OF PROJECT MANAGER:

One of the factors that influence project success is hiring competent project managers [33]. Reference [38] defined project manager competency as the following; knowledge (what project manager knows about the management of the project), performance (how project manager use his or her knowledge), personal (what is the behavior of the project manager when managing the project). According to the reference [39] "Competent project manager consistently apply their project management knowledge and personal behavior to increase the likelihood of delivering project that meet stockholder's requirement" (page 2).

PMCD framework (Project management competency development) was developed by PMI to define successful project manager's competencies. PMCD is consistence with a PMBOK

Guide. PMCD consist 15 unites of competencies which are: integration management, scope management, time management, cost management, quality management, risk management, human recourse management, communication management, procurement management, achievement and action, helping and human service, impact and influence, managerial, cognitive, and personal effective.

Another competency model was developed by Boston University Corporate Education Centre, which focuses in three major categories: technical, personal, and business and leadership. In this model, these three categories are divided into 19 unites [56]. In addition: reference [16] developed a model called SSQ to specify and measure project manager'. Their model consists of 23 unite of competencies which are: Accountability for others , Conceptual Thinking, Conflict management, Continuous learning, Customer focus, Decision making, Developing others, Diplomacy, Empathetic outlook, Flexibility, Goal achievement, Influencing others, Interpersonal skills, Leading others, Objectives listening, Personal accountability, Planning and organization, Problem solving, Resiliency, Results orientation, Self management, Self starting, Teamwork.

2.4 ORGANIZATIONAL CULTURE:

An Organizational culture has a significant impact on its performance and achievement [3]. Kotter and Heskett (1992) found that there is a positive relationship between the organization culture and long term economic performance [3]. Different researchers and theorists have differing definitions of organizational culture [34]. Yazici (2009) defined organizational culture as the set of values, beliefs, and behavioral norms that show how work is done in the organization. According to reference [48] organizational culture is "a pattern of basic assumptions-invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration- that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think and feel relation to those problems" (page 17). Hofstede (2001) defined organizational culture as a collective and shared assumption by employees in an organization [24].

Armstrong (2009) stated that an organizational culture refers to abstractions across the entire business and it has a significant effect on employees' behaviors [3]. Generally, organizational culture is the way things are done in the organization [19]. Organizational culture can be described in terms of: values, norms, artifacts and management style [3]. Values are beliefs in what is good for the organization and what should, or is expected to, happen. Values can be expressed in: care of others, competence, competiveness, teamwork, customer services, and performance. Norms are unwritten rules that guide employees how to act and behave. Norms tell employees what to do, say, believe, and wear. Artifacts are aspects that are visible and tangible to employees in the organization. Artifacts can be the working environment, the language used in the communication channels, and the way visitors or new employees are welcomed. Management style is what called leadership style. Different managers adopt different leadership styles according to the situation, while some managers stick with the same style in different situations. According to reference [2], leadership styles include:

Transactional Leadership: leaders specify and make clear what is required from their employees, specifying the rewards for completing the job to motivate their employees, and take collective action when there are problems.

Transformational Leadership: leaders have clear vision and use this to motivate employees to accomplish more than what is expected from them, manage employees to move away from their own interests to the interests of the organization, and create leaders from their employees.

2.4.1 VALUES:

Values are the core of the culture and can be expressed as the beliefs and ideals to choose between two options such as; good and evil. In addition, values are the standards that guide employees' conducts in different situations. [24]. Effective organizations develop a clear and comprehensive set of values so that everyone is aware of and can be contribute [23]. Abu-Dhabi Police defined its values as the following: integrity and honesty (maintaining the highest levels of integrity and honesty at all times, and will preserve human rights), justice (providing fair and tactful services to all segments of society), recognizing achievements (appreciating and evaluating achievements made by individuals and by the community, by encouraging team spirit and motivating initiatives at all levels), effective communication (believing that effective communication with the public and private sectors is of vital importance to accomplish our coveted goals), excellence (making sure to pursue excellence in all our work and ensure that our activities are assessed effectively and efficiently) [1].

3. PROJECT PERFORMANCE AND OUTCOME CRITERIA:

Projects differ in value, size, and complexity; therefore every project has different performance criteria [46]. Muller and Jugdev (2012) conducted a study focusing on the evaluation of project success [37]. They concluded that views and perceptions of projects' success differ by "individual personality of whom is viewing project success, nationality, project type, and contract type" (page 768).

Project performance and outcome can be evaluated using different performance indicators such as cost, quality, client satisfaction, and business satisfaction [8]. However, time, cost, and quality are the three main performance evaluation dimensions [17]. Different researchers developed alternative frameworks to measure project success. Pinto and Mantel (1990) recommended measuring process implementation, the apparent value of the project, and the customer's satisfaction by the end of the project [40]. Shenhar et al. (2001) suggested a comprehensive framework for assessing project success. They suggested that project success should be assessed according to short-term objectives and long-term objectives. Their framework includes: efficiency (finishing project within planned

duration and cost); customer benefits from the final product; business success; and planning for future (market opportunities) [50]. All of these dimensions were modeled as dependent on time and technological uncertainty. Different PM studies are cited in Shenhar et al.'s (2001) framework, such as [7; 37]. Project performance and outcome has globally been measured as completing the project within time, cost, and according to specifications [46]. Additionally, meeting customer expectations was added to that list [36]. In addition, Doolen et al. (2003) suggested adding the level of project team satisfaction by working together [14] . Dvir et al. (2006) divided project performance into two constructs: project efficiency (meeting cost, time, and specifications), and project effectiveness (meeting customer satisfaction and project team satisfaction) [15].

4. CONCEPTUAL FRAMEWORK:

The UAE government placed great emphasis on different industries like construction, to minimize their dependence on oil revenues. The UAE is the largest construction market among the Gulf Community Countries (GCC); the UAE's construction value is approximately USD 41bn, with USD 549mn as planned projects [12]. In addition to that, UAE is ranked number four globally in terms of growth over the short and medium terms [33]. This increases the relevance, importance and duty of care of the project management concept in the UAE.

The project management concept is a relatively new concept for Abu-Dhabi Police, because the Engineering Department of Abu-Dhabi Police was established in 2003. Since 2008, Abu-Dhabi Police has seen a period of spectacular boom in terms of construction activities [1]. To ensure achieving successful police projects in Abu-Dhabi, the project management culture needs to be taken care of [54]. Different reports have continued to deplore the poor performance of Abu-Dhabi Police construction projects. As a result, performance improvement has become the number one priority of different initiatives in the Abu-Dhabi Police Engineering Department (EPA) [49].

Many building construction projects have started since 2008 in Abu-Dhabi Police. Abu-Dhabi Police have carried out more than 120 projects since 2009. Analysis of completed and ongoing projects indicates that 95% of Abu-Dhabi Police projects exceed the planned time and costs. According to Abu-Dhabi Police project management office [49], different reasons led to the project's failure, such as an insufficient project schedule and cost, many changes, inadequate control, ineffective communication, unclear stakeholders' role, no top management support, and late processing of contractors' payments. All of these reasons are part of organizational system figure 1 [34]. Abu-Dhabi Police have spent a lot of money in training, hiring specialist project management consultants and buying software [1]. However, applying an effective project management training program does not guarantee success of projects [52], and project outcome and performance do not depend only on the project manager and his or her team's abilities [25]. Organizations may spend a lot of money training their project teams, but they discover that their projects do not meet their expecta-
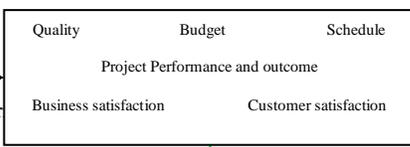
tions. Project performance is affected and influenced by three aspects, which are: organizational culture, project management culture and project manager characteristics [34].

This study seeks to help Abu-Dhabi Police understand how project performance is affected not only by the ability of the project team, including the project manager, but also by project management culture, and organizational culture. In addition, it proposes to help the Abu-Dhabi Police find which aspect of the organizational system (project managers, organizational culture, and project management culture) most affects the project performance and outcomes.

The conceptual framework is based on the organizational system that proposed by Lindbergh (2009) and the findings from the literature review. In the development of a conceptual framework which captures what influences project performance and outcome. It is important to include the contributions of the project manager, project management culture, and organizational culture in this consideration. In addition, it is important to broaden and categorize these factors to provide a comprehensive framework to investigate the influence of these factors on project performance and outcomes. The relationship between these three aspects (project manager, project management culture, and organization culture) and project performance are conceptualized and depicted in Figure 2. It shows that there is an interaction between project manager, project management culture, and organizational culture. At the same time the project manager, project management culture, and organizational culture affect project performance and output (time, cost, quality and others). Elements of these three factors are listed in Table 1.

By combining together project manager, project management culture, and organizational culture, it is possible to develop a conceptual framework for this research that demonstrates factors affecting project performance and outcomes. This conceptual framework is shown in Figure 2. It captures the three factors that influence and affect project outcomes and performance. The first factor (project manager) includes elements such as competencies and skills, capabilities, and self-efficiency. The second factor (project management culture) includes elements such as strategic emphasis, top management support, project management methodology, different stakeholder commitment and involvement, communication system, and project review and learning. The third factor (organizational culture) includes elements such as values, norms, artefacts, and leadership.

The conceptual framework gives an understanding of how factors listed in Table 1 affect project performance and frameworks a useful basis for focusing attention on specific and certain factors and elements.

Figure 4.2: A framework for conceptualizing factors affecting project performance and outcomes

search as affecting project performance and outcomes are inter-related in fundamental ways.

5. RESEARCH QUESTION:

This conceptual framework provides a helpful means to focus attention on specific factors in future research. It is possible to assess the extent to which factors in Figure 2 impact on project performance and outcomes. It will be possible also to find out which of these aspects has greater impact on project performance and outcomes. This argument is particularly relevant to Abu-Dhabi Police because projects in Abu-Dhabi Police are similar to other projects and are affected by all aspects listed in Figure 2.

It is thus proposed to evaluate the triadic influences between Abu-Dhabi Police Values and project managers' competencies in the context of Abu-Dhabi Police. Empirically explore the recommended values for Abu Dhabi police.

6. CONCLUSION:

The conceptual framework was developed to show different aspects and factors that affect project outcome and performance. The model in figure 2 shows that project's outcomes are influenced by three aspects, namely project manager, organizational culture, and project management culture. In addition, it is significant to note that factors identified in this re-

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