

Critical Project Success Factors and its Empirical Studies on Project Management Practices

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Abstract

In the study of critical success factors in a Public Housing Building Project (PHBP) Adinyira et al. (2012) found that the critical success factors were time, cost and quality management; satisfaction, hand environmental safety; beneficiary affordability and design consideration; and cost of individual units and technology. These above mentioned critical success factors seem inadequate considering recent benchmarks for measuring project success by some scholars to include end-user benefit or user involvement, and cultural and political influence (Atif, 2012; Shenrar & Dvir, 2010). Considering that most projects in the MMDAs are classified under the construction category, the outcome of this research regarding critical success factors would be relevant to the MMDAs in Ghana. In another study undertaken in Imo State, Nigeria, Amade, Ubani, Omajeh, Anita and Njoku (2015) found the key success factors in the public sector construction industry were efficient and effective procurement processes/methods; effective communication management; sufficient planning; leadership abilities of the project manager; weather conditions; and effective coordination of project activities. However, planning served as the most significant success factor of construction projects. According to Baccarini, Salm and Love (2004), critical success factors of projects are a “set of circumstances, facts or influences which contribute to the project’s outcome” (p. 22). It is also defined as the key variables that a project manager must pay attention to in order to achieve its stated goals and objectives (Ika et al., 2010). Key success factors of projects have varied from one project to the other based on the nature of projects and the goals of the projects. Chan, Scott, and Chan (2004) identified key success factors for construction projects. These factors relate to project management practices, project procedures, human related factors, and external environments. Chan et al. (2004) were of the view that a project will be successful based on the following conditions: “if the: project complexity is low; project is of shorter duration; overall managerial actions are effective; project is funded by a private and experienced client; client is competent in preparing the project brief and making decisions; project team leaders are competent and experienced; and project is executed in a stable environment with developed technology together with an appropriate organization structure” (Chan, Scott & Chan, 2004, p. 155). As recent as these works may be, they have excluded the end-user benefit as one of the critical success factors, especially for a house building project. Although Amade, Ubani, Omajeh, Anita, and Njoku (2015) left out the end-user benefit in the analysis of critical success factors, the research, however, included some laudable factors including effective communication management, effective coordination of project activities and leadership skills of the project manager. It goes without saying that what measures determine a project success may vary from project to project (Adinyira et al., 2012). While that point is notable, the researcher believes that an important component of project success factors must include the user involvement and end-user benefit, however, both research works above excluded it. In essence, the researcher believed that a key stakeholder such as the end-user of a said project should be a reference for measuring project success among other critical success factors.

Keywords: Project Success, Project Management Practices, Empirical Studies

I. EMPIRICAL STUDIES ON CRITICAL SUCCESS FACTORS

Pinto and Slevin (1987) posit that critical success factors can be viewed as the major elements that are relevant for a strategy to be successful. They put it specifically as: “factors which, if addressed, significantly improve project implementation chances”. Pinto and Slevin (1987) jointly outlined a collective set of 10 critical success factors that determine the successful implementation of projects as:

Project Mission: Preliminary clarity of goals and general guidelines

Top Management Support: Willingness of top management to provide the necessary resources and authority/power for project success

Project Schedule/Plans: A detailed specification of the individual action steps required for project implementation

Client Consultation: Communication, consultation, and active listening to all impacted parties

Personnel: Recruitment, selection, and training of the necessary personnel for the project team

Technical Tasks: Availability of the required technology and expertise to accomplish the specific technical action steps

Client Acceptance: The act of "selling" the final project to its ultimate intended users

Monitoring and Feedback: Timely provision of comprehensive control information at each stage in the implementation process

Communication: Providing the required network and necessary data to all major stakeholders in the implementation

Trouble-Shooting: Being able to deal with unforeseen crises and abnormalities from the plan (Pinto & Slevin, 1987, p.23-24).

Traditionally, the success of projects is based on cost, time and quality (Atkinson, 1999). This approach usually neglected the satisfaction of key stakeholders involved in the project. However, recent scholars have different views on traditional project success factors. Mensah (2007) argues that the success of a project is strongly tied to both the project performance and project objectiveness. Mensah further adds that the performance of every project, therefore, is measured by certain criteria that are based on the objectives of the project from the onset. Besides the traditional success factors of a project (cost, time and quality), other criteria also used in determining project success include project scope, benefit to end users, benefit to national infrastructure, environmental impact, health and safety requirements, project team coordination, support from top management among others. These are considered to be the all-encompassing criteria for assessing project performance (Attarzadeh & Ow, 2008). The list of critical success factors might be inexhaustible since different projects have varied dimensions for measuring project success by varied stakeholders. However, some traditional critical success factors such as cost, time and quality are obviously prominent and would be a benchmark for all stakeholders concerning a project.

A successful project may be assessed differently by different stakeholders. This is because the benchmark for measuring success varies among stakeholders. It is therefore not surprising that stakeholder differences are one of the major challenges of project management (Amponsah, 2012; Ofori, 2013). According to Shenhar and Dvir (2011), although project management is one of the most discussed issues, scholars are yet to conclusively agree on the notion of project success. The commonly discussed measurement of success, especially from the project manager's perspective, would mostly likely be project efficiency. However, it is the view of most researchers that project efficiency, which implies meeting time, scope, and budget goals, is not enough to ascertain project success (Adinyira et al., 2012; Ahadzie & Amoa-Mensah, 2010). Despite the extensive measures of success being recommended, there has not been any empirical relationship between efficiency and overall success or, better still, single out efficiency to be important in the entire project success (Serrado & Turner, 2015).

Kenny (2003) argues that, in an attempt to assess project success within an organization, it is best to analyze not only the efficiency of the project management processes employed but the effectiveness as well and how it drives an organization's strategic goals. In the light of distinguishing project efficiency and effectiveness, Serrador and Turner (2015), through a survey of 1,386 projects, found that project efficiency reasonably correlates strongly to total project success (correlation of 0.6 and R² of 0.36). They conclude through their analysis that efficiency is neither the only aspect of project success nor an aspect of project success that can be ignored. Osorio, Quelhas, Zotes, and Shimoda (2014), outlining the critical success factors in project management using the Brazilian energy sector as a case study, compiled the views of some scholars on the difference between project efficiency and effectiveness. In the opinion of Patah (2010), how well a project was conducted is known as efficiency and effectiveness and this entails the contribution of the project in the attainment of the organizational goals. While Dweiri and Kablan (2006) assert that effectiveness is assessed by considering the level at which the project objectives have been achieved. Efficiency is measured by considering the amount of time, cost and quality criteria of the project. The common understanding from these definitions is that, for a project to be deemed successful, it must be both efficient and effective. In this research, a model to incorporate critical success factors in the case of MMDAs in Ghana has been developed to guide the various MMDAs as well as future research work.

Recent research has rendered these earlier assertions invalid: instead, it considers the phenomenon of project failure or success as multidimensional and it relates to different levels of analysis (Molloy & Stewart, 2013). Molloy and Stewart (2013) point to the fact that only the respective stakeholders can actually confirm or disconfirm the effectiveness or efficiency of a particular project. For instance, in the case of MMDAs in Ghana, a donor agency that seeks to provide a classroom block in a particular community within a particular budget, scope and time frame upon completion and handing over to the assembly in question may conclude that the project has been successful. The expected effectiveness of the project in meeting its intended objectives of increasing school enrolment may be on course. Notwithstanding the efficiency and effectiveness of the classroom project, the mortality rate of the said community may be high and, as such, a maternity clinic would have been a better social intervention than the

classroom block. Can we then conclude that the project has been effective and efficient but not successful since some scholars have argued that the beneficiaries should be the focus of every project (Amponsah & Darmoe, 2014; Bellasi, Kondra & Tukel, 2007).

The missing gap in this instance is the stakeholder differences. While some projects undertaken by the MMDAs have good intentions, it may not necessarily be reflective of the inhabitants of the said MMDAs, especially for donor funded projects. In fact, the same could be said for the locally funded projects in the MMDAs; thus, making community members passive recipients of the project and not active participants, especially in the initiation and planning stages. Ramataboe and Kisubi (2005) explain that communities (direct beneficiaries) in most cases know what they want and, in some cases, they have more technical expertise in some of the areas than the donor themselves. They also understand the local institution and their people better than anyone.

This study also considers the argument of long term or short term success of a project. For instance, during the construction of Akosombo dam by Ghana's first President, Dr. Kwame Nkrumah, some stakeholders and critics thought that it was wasteful for a country like Ghana to construct such a dam since our electricity needs at that point were moderate (Eshun & Amoako-Tuffour, 2016). Over 50 years later the Akosombo dam project remained the backbone of power generation to Volta River Authority for onward distribution to the respective power distributors, then to the various regions until the onset of the recent energy crisis dubbed "dumsor" (on and off) (Eshun & Amoako-Tuffour, 2016).

The NDC government under President John Dramani Mahama had completed a massive project known as the Kwame Nkrumah Circle interchange at the heart of the capital, Accra. His government had come under criticism as some stakeholders claim the project had been over budgeted; others say it is not the priority of the country at the moment (myjoyonline.com, 2017). This is what President John Mahama said during one of his campaign tours in the Central Region in September 2016: "There is a group in society, who makes it their duty to criticise development that takes place. Groups and individuals, who antagonized Ghana's first president over certain projects he embarked upon, would have asked for forgiveness if they were alive to witness the fruitfulness of those projects currently" (peacefonline.com, 2016). Notable among these projects would be the Akosombo dam, which serves Ghana's electricity needs, Tema Motorway, Tema oil refinery among others, which had similar criticisms at the time of initiation and implementation.

In his opinion, Ofori (2006) highlights what constitutes project success as a positive balance between cost (budget), time (schedule) and quality (specifications). However, Ofori did not consider all stakeholders in measuring what constitutes project success. His measure of project success, thus, delved only on the project managers' perspective. Earlier, Boyd (2001) puts forward the following five key indicators for assessing project satisfaction, irrespective of project duration, scope or size:

- Delivering the product that the customer needs
- Delivering quality that matches the price
- Delivering the project according to agreed time frame
- Having a system of resolution that is fair to both
- Delivering the desired degree or feedback that the customer desires (p. 423-425).

Shenhar and Dvir (2007a) also outline five project success dimensions and measures to include:

- The first is project efficiency (meeting schedule goal, meeting budget goal)
- The second project success dimension covers team satisfaction (team morale, skill development, team member growth, team member retention)
- The impact on customer or beneficiaries, for instance, meeting functional performance, meeting technical specifications, fulfilling customer's needs is the third benchmark for measuring project success
- Business success, which implies the commercial success of the project and how much market share it creates was classified as the fourth dimension for measuring project success
- The final dimension, according to research, was the preparation for the future, for example, whether the said project creates a new market, or a new product line or it develops a new technology (p. 96).

Fortune and White (2006) outlined 27 critical success factors from 63 publications and among these factors identified in the study, support from senior management had the highest number of citations (39) followed by clear and realistic objectives with 31 citations, detailed plan kept up to date (29 citations), while good communication and feedback had 27 citations, and user or clients' involvement was cited 24 times out of the 63 publications. Surprisingly, adequate budget and good leadership, which some scholars would rate as a critical success factor in any project, had only 15 and 11 citations respectively. The critical success factor (CSF) with the least citations was the issue of different viewpoints with only three citations. One of the important critical success factors outlined by Fortune and White is the support from senior management. The researcher considers senior management support as the pivot of every successful project, especially in the case of MMDAs in Ghana where senior management has the final say in most decisions concerning the projects. For instance, in awarding the contract for various projects, senior management of respective MMDAs may ignore the advice of project consultants or other stakeholders, thus making the project dead on arrival because of the bias in the choice of contractors. This is especially the case of political contractors who win contractors not based on competence but on their political connections. The end result is that senior management may not be able to assess the project objectively because of political victimization by the ruling government (Damoah, 2015). Having clear and realistic objectives is another important critical success factor, however, the challenge may be whether all stakeholders agree the objectives are clear and realistic enough for them.

The 27 critical success factors outlined by Fortune and White interestingly did not follow the previous prominent critical success factors as identified by most scholars to include cost, time and quality. A look at literature reveals that support from senior management, which has a high citation among the critical success factors, may not be the case in developed countries, however, it is familiar with developing countries such as Ghana. This further confirms the fact that project success is a multi-dimensional issue and various stakeholders have a different reference for measuring project success. Whereas an issue such as political influence or interference can be considered a critical success factor in Ghana, it may be the least critical success factor elsewhere; thus, enforcing the socio-cultural difference among countries or stakeholder as a critical success factor. For instance, the "Ghana man time" or GMT phenomenon, which has become synonymous with activities and events implies a little disrespect for time is acceptable among most Ghanaians. In the execution of most projects, therefore, there is little or no respect for timelines and deadlines. There are few punitive measures taken against artisans who arrive late or project team members who do not front for scheduled activities (Bunyaminu & Mahama, 2016).

Despite growing lists of critical success factors, Osorio et al. (2014) opined that successful projects are still rare. Some scholars have also argued that CSF are general and do not contain sufficiently specific knowledge to support better decision making by the project manager (Zwikael & Globerson, 2006). In a recent study, Shenhar and Dvir (2007a) assert that critical success factors vary depending on the type of project and industry in question. This implies that CSF for profit making business may not be the same for non-profit making business and, in this case, MMDAs. It was not clear which sectors or types of projects resulted in the above rankings and frequency for the various CSFs. Thus, the above assertions give room for identifying a unique set of CSF for MMDAs in Ghana for either donor or locally funded projects.

The project success is quite an elusive concept of project management, considering the varied expectations and interpretation of the individuals or group in a particular project: each would have a different perception of project success (Cleland & Ireland, 2004). According to Lim and Mohamed (1999), achieving some already set goals is seen as project success by those directly involved in it. However, other stakeholders may have different opinions based on beneficiary satisfaction.

An outstanding example of different stakeholders having a different perception of a successful project is Sydney Opera House (SOH) project (Thomsett, 2002). Even though the budget was 16 times more than what was initially set forth and the duration took four times longer to complete than initially planned, the completed project had such a significant impact that the project challenges were forgotten. As indicated by Ray (2015), SOH is an example of a project that was completely mismanaged, had unbelievable cost and schedule overruns, but resulted in a building that is a world renowned landmark and the envy of all that have seen it. The project was a big success for the people as it is the busiest performing arts center in the world with over 1500 performances attended by 1.2 million patrons each year. It is also one of the most popular attractions in Australia and has over 7 million visitors each year (Ray, 2015). However, the SOH project was, at the same time, seen as a big failure from the project management perspective (Thomsett, 2002). The case of the SOH project brings another dimension for measuring project success to mind, which is whether

the respective project will be beneficial in future while considering the immediate benchmark for measuring the success of the said project (Thomsett, 2002).

A similar story can be said about the Tema motorway in Ghana, a 19 km highway linking the national capital, Accra and the industrial area. It also links to the Tema port, the major port from the colonial days. It was built by Ghana's first President, Dr. Kwame Nkrumah in 1964, however, at the time of construction and inauguration, it received little applause from various stakeholders. Some cited the cost involved in building such a road while others bemoaned its relevance when only a few cars used the route to Tema port on a daily basis (myjoyonline, 2017).

However, 60 years after independence, the same motorway and perhaps similar stakeholders would dare not condemn the project. It currently needs expansion considering the number of cars that use the route on a daily basis and the increased number of commercial or industrial and residential buildings along the road to the Tema harbor. This confirms that some of the stakeholders who serve as a benchmark for measuring project success may not always be right after all (Bunyaminu & Mahama, 2016; Damoah, 2015).

II. DIFFERENCE BETWEEN THE CRITICAL SUCCESS FACTORS FOR DONOR FUNDED PROJECTS AND LOCALLY FUNDED PROJECTS FOR THE MMDAS

A simple T-test analysis was used to determine the difference between critical success factors for donor or locally funded projects for the MMDAs. For all the 11 variables used to address this research objective, six of the paired t-test revealed a statistically significant difference between the CSF for both donor and locally funded projects among the MMDAs. However, the remaining five revealed that there is no statistically significant difference between CSF for both donor and locally funded projects.

The six variables that had revealed a statistically significant difference included Pair 1 (end-users being satisfied with the project at the time of delivery/implementation), Pair 2 (for end-users being satisfied with the project over its operational life cycle and are also deriving benefits), Pair 3 (donor agencies deciding on the project team formation), Pair 6 (projects being run according to planned budget), pair 8 (funding agencies being satisfied with the project outcomes) and Pair 10 (effective planning and control for the project).

The five variables that revealed there is no statistically significant difference between CSF for both donor and locally funded projects included Pair 4 (effective and efficient use of resources), Pair 5 (projects being completed according to schedule), Pair 7 (project deliverables having long time span benefits), Pair 9 (release of adequate resources and funds the project) and Pair 11 (political influence in the award of project contracts).

The mean scores revealed that there was a lot of convergence of respondents' level of agreement with critical success for both donor and locally funded projects. For instance, the release of adequate resources and funds had the highest mean scores for both donor and locally funded projects implying that the majority of the respondents agree that it is a critical success factor. Another similarity is the outcome for effective planning and control for projects as a critical success factor. Both donor and locally funded projects had mean scores above 3.5 indicating a convergence of responses from participants.

For instance, the mean score of 3.93 (donor funded) and 4.03 (locally funded) from the analysis of the data indicates that both donor and locally funded projects consider funding to be critical to project success. With regards to planning and control, the mean scores of 3.85 and 3.88 respectively indicate that planning and control is a critical success factor for both of them. The mean scores for both donor and locally funded projects were 3.93 and 4.14 respectively indicating that end-user benefits and satisfaction with the project is a critical success factor for both of them.

The major variables with divergent responses for donor funded project include the formation of a project team by the funding agency with a mean score of 3.33 implying the respondents disagreed that it was a critical success factor for donor funded projects in the MMDAs. The issue of political influence in the award of contracts for donor funded projects had the least mean score (3.14) indicating that the participants do not agree that the variable is a critical success factor in this case. Thus, for locally funded projects, the only variable with an average mean score below 3.5 is the issue of political influence in the award of contracts. This implies that participants do not agree that it can influence the project success for locally funded projects.

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