2024 Scienceline Publication

Journal of Civil Engineering and Urbanism

Volume 14, Issue 3S: 206-211; September 25, 2024 ISSN-2252-0430

DOI: https://dx.doi.org/10.54203/jceu.2024.21

Stakeholders Influence on Construction Project Success

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RESEARCH ARTICLE

PII: S2252043024000021-14

Received: June 25, 2024

Revised: September 02, 2024

Accepted: September 05, 2024

ABSTRACT

For the past decade Botswana's construction industry has been embroiled in a lot of controversies based on construction project constraints. These are characterized by construction project delays, budget overruns as well as scope creep and some of these construction projects have been deemed unsuccessful by different stakeholders. To find a mitigating factor for these problems, construction project constraints must be investigated beyond just the triple constraints to provide a solution for the Botswana construction industry. Therefore, the overall purpose of this study was to investigate how construction project constraints and stakeholders influence the outcome of a project. The study adopted a qualitative approach through face-to-face interviews with selected stakeholders such construction professionals, clients and other beneficiaries in the Gaborone and greater Gaborone areas. Thematic analysis was used to analyze data. The findings of the study established that the success of a construction project is subjective and is based on who is being asked, the construction professionals, the client and other beneficiaries had different perspectives on success of a project. The study revealed that initial constraints in a construction project tend to be carried along to the final stages of a construction project. However new few construction project constraints also emerge at the final stages of a construction project. The study found that stakeholders such as the client and other beneficiaries have a significant impact on construction projects due to their influence both positive and negative depending on the level of engagement.

Keywords: Factors of project success, Project constraints, Stakeholders, Triple constraints

INTRODUCTION

A construction project is a temporary endeavor in which multi disciplines in the built environment collaborate for a common goal within a defined start and finish time by factoring in the triple constraints (Sunke, 2009). Historically project success has been linked to the iron triangle of time, cost, and quality (Barnes, 1988). A case can be put that balancing only the triple constraints may at times prove to be futile, its critical for project managers to balance beyond the iron triangle. Therefore, there is need to analyze the impact and negotiate other sides of the construction project constraints to deliver a service or product (Prakash, 2021). Many topical issues which have implications for the construction industry have so far only been discussed, but few to a significant extent in the context of industrialized countries regarding construction project constrains (Ofori, 2000). The main objective of construction projects is to complete the construction on time and within budget without sacrificing quality (Sweis, 2013). For most construction industries including that of Botswana, the attributes of cost, time and quality are often elusive. While the industry has been commended in improving and upgrading construction and civil engineering infrastructure, some reports indicate otherwise (Sentongo, 2005). Therefore, the objective of the study was to investigate the influence of stakeholders on construction project success. The rest of the paper is structured as follows: presentation of the background followed by methods, results and lastly conclusions.

Background

This section discusses the project constraints, triple constraints, other project constraints and shift to project success, project stakeholders and how this affect project success.

- **Project constraints**

A constraint is an aspect that limits system performance in each environment (Mayer et al., 1995). Most studies when they discuss project constraints in construction project management, focus mostly on the triple constraints of time, cost, and quality. However, construction projects have become more complex and as such have become multiple constraints based (Mishra and Mallik, 2017). Therefore, the section will seek to highlight on the iron triangle and discuss other project constraints that affect construction projects.

- **The triple constraints**

The theory of the triple constraint states that: the triple constraint, is a triangle of time, cost and performance that bounds the universe within which every project must be accomplished (Dobson, 2004). The triple constraints were originally conceived as a framework to enable project managers to evaluate and balance the competing demands of cost, time, and quality as illustrated in Figure 1 (Atkinson, 1999). Subsequently the triple constraints became the de facto method that defines and measures project success with the general perception amongst project managers, that a successful project is based on these three criteria alone (Shenhar and Dvir, 2007).

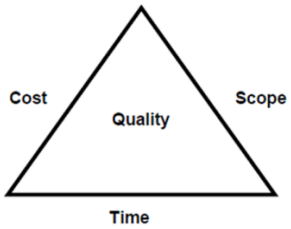

Figure 1. Iron triangle. Source: Atkinson (1999).

- **Other project constraints**

A construction work environment infuses a multi-party participation; therefore, needs and constraints in a multi discipline situation bring complications in the construction sector (Lau & Kong, 2004). Amusan et al., (2021) states that the modern-day construction industry projects are high risk and have given way to more constraints beyond the iron triangle and as such these constraints threaten the successful delivery of construction projects. Mishra and Mallik (2017) and several other scholars identified construction project constraints into the following categories: economic constraints legal constraints environmental constraints technical constraints social constraints and political constraints.

- **Project success**

Successful project can be defined as having achieved the project objectives: within time within cost and at the desired performance/technology level while utilizing the assigned resources effectively and efficiently and are accepted by the customer (Kerzner, 2018). However, project success is not to be simply meeting the pre-defined triple constraint set as adjusted during the project. Project success is also in the eye of the beholder, that is, those individuals, enterprises, agencies, institutions, who are the stakeholders (Cleland and Ireland 2002). While we would like to say that we have a clear set of goals by using the triple constraint, we see that this varies based on the perspective of the stakeholder (Cuellar, 2010).

- **Project success factors**

Construction project success factors tend to be a bit more specific. Rockart (1979) stated that success factors of construction projects can be identified in the following ways: a controlled number of ways in which success is guarantee; aspects of the business side of the construction project that must be monitored aggressively by management and critical areas where good performance is a requirement to achieve construction project success.

While most publications have looked at factors of success from a much more general viewpoint, few with a point of focus. Chen and Chen (2007) streamlined the focus of factors of project success in the construction industry in terms of stakeholder partnerships. The emphasis lies in the ability for forged partnership to be effective and bear fruits in terms of progress. Chen and Chen (2007) stated that early partnerships ensure the smooth running of a construction project, because as known construction projects are multi-disciplined with experts from different knowledge areas of specialization. Other scholars such as Lewis (1995) mentioned that by partnering with say, material suppliers early into a construction project this in turn will give the contractor an expedited advantage in terms of supply of materials. These sentiments were also expressed by Mohr and Spekman (1994) who reiterated that by engaging government, law makers and other regulatory bodies this reduces the chances of disputes arising in a construction project. Therefore, project success factors can be summarized to include the following: project procurement, project management, project participants, physical environment, time, cost, and quality criteria, safety criteria, client satisfaction criteria, employee satisfaction criteria, learning and development criteria, profitability criteria, internal- process related, labour related, material and equipment related., construction site related, collaborative team cultures, consistent objectives and resource sharing.

- **Project stakeholders**

Project participants entail different key players or stakeholders who share a commonality of being vested in a construction project (Didenko and Konovets, 2009). There are several participants in construction project and an important one is certainly the government. The government is responsible for provision of different types of permits, enforcement of laws and regulations that have a significant impact on the success of a construction project (Le et al., 2020). Clients who form part of the project participants allow a construction project to run

their financing (Elawi et al., 2016). But in totality all project parties must clearly understand their roles at the pre-construction phase to have any chance of success (Le et al., 2020). Therefore, any construction project runs the risk if being unsuccessful when stakeholders do not fulfil their roles.

MATERIALS AND METHODS

This study investigated how the influence of stakeholders affects construction project success. A qualitative approach was used for this study. A qualitative approach of the study provided in depth look at how construction project constraints and stakeholders affect the outcome of a construction project. A qualitative approach tends to explore and discover issues about a particular issue of study (Tsang, 2013). The researcher engaged the Ministry of Infrastructure and Housing Development and Department of Roads under the Ministry of Transport and Infrastructure Botswana to identify an inventory list of all completed government funded construction projects from 2016 to 2020 based on availability of records and personnel engaged in those projects. Under those projects, construction professionals under government ministries, departments, and contractors as well as other parties such as law enforcement and religious groups who were involved or affected in the selected projects were interviewed. Contractors had to be registered with Public Procurement and Asset Disposal Board (PPADB) with Grade D or E. Therefore, convenience sampling was adopted. Etikan (2016) stated that convenience sampling is applicable to both qualitative and quantitative studies. To ensure confidentiality of participants, all identifying information was replaced with codes as indicated in Table 1.

Interviews (one-on-one interviews) were used. One on one interviews are most effective for participants who are articulate, well versed and can share ideas comfortably without hesitation (Plano Clark and Creswell, 2015). The study adopted thematic analysis with an inductive approach. This is quite a flexible method that can be used in a wide range of learning and teaching spheres (Clarke and Braun, 2013).

Table 1.

Participant group	Code	No	Ratio
Construction professionals	C1-C7	7	(1:2.57)
Project beneficiaries	B1-B2	2	(1:9)
Clients	S1-S2	2	(1:9)
Contractors	T1-T7	7	(1:2.57)

RESULTS AND DISCUSSION

Stakeholders influence on construction projects.

All construction projects have people, organizations, or entities with a vested interest whether directly or in directly. For stakeholders engaged, there was a positive impact in terms of project progress because they were able to provide sound advice where applicable but for those less engaged the project was negatively affected in terms of constraints such as time. The results are presented under the following categories which were generated through thematic analysis: Advice to the contractor, influence with regular meetings late update on project progress safety and legal matters with client and undefined roles.

Advice to contractor

The construction professionals that were interviewed stated that one of the key aspects that influence the success of a construction project was the ability to take advice from stakeholders. To take all their considerations, assess and selectively decide which would be more beneficial to achieve the project goals. The quote from project beneficiaries below highlights this.

"Because they engaged us, and we would also give advice where we can. I remember that there were some areas where there were corners, there were also some temporary roads that went near residential homes, where we advised for speed humps to be constructed to limit vehicle movement" (B1, 2021).

The quote suggests that the advice of other stakeholders can affect construction project success as they ultimately will utilize the infrastructure or facility and if their advice is not adhered to, there's danger of the facility not being utilized effectively. Positive feedback from stakeholders also proved to be effective on the side of the contractor as well who stated.

"*We engage with the chiefs, we engage with the Council, and we engage with service providers like BPC and Bofinet, stakeholders who are for the project and those who are against the project,"* (T1, 2021).

Influence using regular meetings

Other stakeholders play a pivotal role in the delivery of the any public funded construction project, as they may provide a key insight into what could be implemented. The commitment and attitude of stakeholders (beneficiaries) can be defined as the perception stakeholders have regarding the project, be it supportive or non-supportive. B1 said:

"*We are a stakeholder, so obviously these projects fall under the Ministry of Transport (Department of Roads). But obviously when the project starts, the planning phase we are normally engaged. They say we are going to build a road, and they normally ask for our input, what we think".* (B1, 2021)

Much of the participants, particularly other stakeholders expressed that they wish the contractors would engage them early in the project to provide their input save for project beneficiaries. One of the key stakeholders of the road project, a main liner church felt both the client and contractor had not done enough to engage them early in the project.

"*They only contacted us once for a meeting at state owned offices to inform us they need our land",* (B2, 2021).

Other stakeholders bemoaned with similar sentiments; This was reiterated by C2:

"We were only made aware of the teaching hospital officially through a meeting once there was an intention to open in it, this was in 2017", (C2, 2021)

The stakeholders appear to be divided in their opinion as far as, how much leeway they were given to have an influence in public funded construction projects. As a factor of construction project success influence of stakeholders is a crucial element for a positive outcome.

Late update on project progress

Through the narratives over the interviews, it was obvious that one of the constraints identified was the communication breakdown between construction professionals from government and those from the contractor. Some of the parties had indicated that there was always a delayed or late update on the project progress. The T2 stated:

"*So, we were having some problems with some of the information missing. Unless if it's a design and build, so we were not designing, so we want information to come quickly so that we can make orders."* (T2, 2021)

The quote suggests that communication between all parties involved is quite essential to not only ensure productivity on site but to keep everyone up to date with the on goings of a construction project. It is a key factor for construction project success. Similar sentiments were shared by construction professionals under independent contractors who highlighted instances which could be considered as a constraint, that the communication and relay of information was poor which led to delay of some construction works. The supported this statement by explaining:

"*So, we were having some problems with some information missing, some of the drawings were lacking information and then when you want information you hear the guy (client's architect) has gone to Maun".* (C2, 2021)

Safety and legal matters with client

Within every construction project both public funded or private funded, it is relevant for safety to be the key factors that affect the success of a project. Safety is an issue that is a performance indicator of project success. Interviewed stakeholders and construction professionals under contractors had indicated the sensitivity of safety as a measurable component of progress.

"Our influence is traffic flow and road safety. When we get there, we look at the safety, how safe it is and what are the effects of works on motor vehicle drivers. To minimize the risk of car crashes, and to determine whether road signs are okay, are they visible at night", (B2, 2021).

Safety issues in the public funded project concern both the public in general and the site human resources. The T2 supported this statement by explaining:

"Every morning at the airport when you come in, you don't have guns and those "things)," (T2, 2021)

Undefined roles

During the interviews conducted some construction professionals expressed a lack of defined roles regarding some public projects which was a source of conflict and dispute. Clients tend to interfere and overexert their authority in some instances. The C2 stated:

"The client came and then saw a door for somebody who was a neighbour, I think it is military hanger, so when the client saw that door, he stated that he prefers it, so we advised him to go and tell the architect " (C2, 2021).

The aspect of the client overexerting their authority is based on a lack of understanding of contractually defined roles on a construction project. The influence of the client as well as client representatives bears a significant factor on the construction project performance. Stakeholder influence had positively and negatively affected the construction projects outcome. Some beneficiaries of infrastructure believed that the contractor and the client did sufficient efforts to engage them by holding meetings and providing a platform for offering advice where appropriate. However, other beneficiaries had a different point of view. The influence of the other stakeholders seemed to have a mixed effect on the outcome of the construction project.

The study revealed that stakeholders have a significant impact on the construction project outcome due

to their influence. For stakeholders engaged, there was a positive impact in terms of project progress because they were able to provide sound advice where applicable but for those less engaged the project was negatively affected in terms of time. While on the other hand others argued that they were relegated to just by standers, yet they had a vested interest in the construction project. Their influence was significant on the construction project, which is what Artur (2016) argued by stating that managers are encouraged to involved supportive stakeholders and monitor the marginal ones to ensure a successful construction project.

CONCLUSION AND RECOMMENDATIONS

The study posits that stakeholders have a considerable amount of influence on a construction project's outcome which could be deemed positive or negative. Firstly, other stakeholders such as project beneficiaries have indicated that they made several positive contributions to construction projects by providing sound advice and some form of commentary on matters involving safety of the public throughout the project duration. For road construction projects certain beneficiaries provided invaluable advice on provision of visible safety road signs and traffic diversion. This allowed for production on site to uninterrupted which gave the construction project a positive outlook.

The study further revealed that construction professionals under the contractor were dissatisfied with the interference that the client would have directly on the construction project. This was indicated by construction professionals, that the roles in a construction project must be clearly defined. This undue influence of the client led to sour relations between the contractor and client. While contractors through construction professionals may claim that a construction project was successful by their accord, the client was left dissatisfied on occasions where they could not influence the on-going of works on site. Lastly the study did reveal that while certain beneficiaries outlook was positive others indicated dissatisfaction as they were not allowed to have significant influence in the construction project, entities who owned properties around the projects, where land appropriation issues came up. These beneficiaries were of the belief that their influence could have had a positive outcome on the construction project.

DECLARATIONS

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Data availability

The datasets used and/or analyzed during the current study can be made available from the corresponding authors on reasonable request.

Author's contribution

All authors contributed equally to this work.

Acknowledgements

The authors thank several members of the Botswana public service, those in several ministries, law enforcement as well as several private contractors for the consent in the data collection of this study

Consent to publish

Not applicable.

Competing interests

The authors declare no competing interests in this research and publication.

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