



Critical Success Factors for Public Sector Projects in Lagos

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Abstract

This study aims to identify critical success factors for public sector construction projects in Lagos State, Nigeria. The study adopted a survey research strategy through semi-structured questionnaires to collect data from Lagos State Ministry of Works construction experts. A total of 66 usable questionnaires were retrieved and used for the analysis based on their information. The Cronbach's alpha was 0.745, and the Spearman-rank's coefficient was 0.802, indicating the high internal consistency of the questionnaire items. A quick analysis reveals that the most critical aspects of public construction projects are political considerations, the project manager's leadership qualities, an appropriately allocated budget, and efficient team management. Effective procurement process and stakeholder involvement were found to significantly impact the success of public sector building project delivery, while the leadership skills of the project managers, effective communication management, effective coordination of project activities, and efficient project delivery did not. This study sheds light on the most common reasons these projects fail and offer a wide-ranging set of recommendations for fixing them.

Keywords *success factors, public sector, project management*

INTRODUCTION

The coordination of various economic operations is referred to as "project management," and it is a concept that has its own name. Both the manufacturing and construction industries are dependent on efficient project management in order to continue growing. International corporations are constantly expanding their businesses by investing in new enterprises. According to Chugh and Nitin (2018), project management is a complex process that involves extensive and coordinated attention to a variety of elements, including human, financial, and technological concerns. This focus is required in order to manage projects successfully. A project's success may depend on a number of significant success factors, but the same factors may also be responsible for the project's failure if they are not managed and given the attention they require. According to Stojanov et al. (2018), an organisation must first determine the critical factors that will determine the success of a project, then investigate these factors in a methodical and analytical manner to determine how they will have an impact and select methods that are suitable for dealing with these factors. It is critical to increasing project quality and efficiency by studying the success of projects and the parts of those projects that are most important.

Any country's construction industry is almost always one of the most important industries for the overall economy. It is widely acknowledged as being among the most significant and influential pillars that provide support for the economy. According to Albtoush et al. (2022), it is one of the most important factors contributing to development in other parts of the economy. According to Hajiani et al. (2018), the foundation of any nation's progress resides in the building and infrastructure projects that are undertaken. Construction and engineering companies have a significant role in the expansion of economies throughout the world, which results in the creation of employment opportunities for a large number of professionals. The construction industry's interrelationship with the economy as a whole is primarily the result of three characteristics of the

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industry: the construction industry is a client of the public sector; the construction industry has a large market size with investment potential; and the construction industry has a multiplier effect as a major source of jobs, both directly and indirectly (Albtoush et al., 2022).

Kaur and Singh (2016) claim that construction project specialists are still unaware of this idea of success factors. The phrase “critical success factors” was invented by Rockart, who gave a list of the most critical variables that have the most significant impact on the project’s success (Grimsdottir & Edvardsson, 2018; Kaur & Singh, 2016). Adnan et al. (2014) said that a manager’s decision should consider the critical success variables to achieve company goals and objectives. The primary purpose of utilising these elements is to assist managers in effective organisation planning and provide a powerful asset for communicating effectively among managers. As defined by Grimsdottir and Edvardsson (2018), critical success factors are a collection of essential variables that significantly positively impact overall outcomes. According to Amade et al. (2015), organisations in Nigeria and the rest of the world face complications and problems in meeting their building project deadlines. The failure of several joint public-sector projects has created a disaster for all building construction stakeholders (Amade et al., 2015). The manufacturing and construction businesses have many projects, but manufacturing projects are more engaged than building ones. As a result, it is critical to recognise all aspects contributing to project success. As it is well known that projects are frequently employed in the manufacturing business, it is essential to address the critical variables contributing to the success of manufacturing project execution and product development. Vidgen et al. (2017) conducted an empirical investigation and discovered that product development initiatives accounted for 40.7 per cent of respondents. As a result, this research aims to identify crucial success elements in manufacturing and building projects in Lagos, Nigeria.

Problem Statement

During the oil boom of the 1970s and to the end of 1983, Nigeria’s building industry saw a spectacular thrive (Wikum, 2016). In addition, the time in question saw a significant decline in the quality of projects executed. Projects were ill-conceived, poorly defined, and shoddily carried out. Consequently, there were overruns in time and money and low-quality projects that had to be scrapped altogether. According to Lindsjørn et al. (2016), construction projects are starting to satisfy the initial quality level while meeting the primary cost and time aim. If a construction project fails to reach its stated goals, it is deemed a failure, and the project is terminated.

As a result of the numerous building projects in Nigeria having a limited lifespan due to poor design, the landscape is littered with a large number of unfinished construction projects (Amade et al., 2015; Mathar et al., 2020). Virtually all of the public works of construction that have been finished in Lagos State so far exhibit symptoms of low quality or mismanagement. (Amade et al., 2015; Mathar et al., 2020). This can be attributed to a variety of factors, including but not limited to incompetent contractors, poor design, a lack of knowledge of the specific project in question, and corruptible tendencies (Adabre & Chan, 2019), which have levelled a number of important complaints against the Nigerian construction sector, one of the most notable of which is the growing tendency in project delivery delays.

According to Lindsjørn et al. (2016), the process of construction in Nigeria does not adhere to any predetermined standards or protocols. As a result, it is possible for anybody to build any structure without adhering to the predetermined rules and processes. The use of this technology frequently leads to the collapse of construction projects and the deaths of the people living in those buildings. In addition, the industry has been beset by issues that range from mistrust to greater self-interest and rivalry to a lack of adequate communication, all of which have consistently led to a succession of antagonistic interactions among the many stakeholders (Gunduz & Almuajebh,

2020)

There are several research on the most critical success elements for building projects that may be found in credible publications (Alashwal et al., 2017; Albert et al., 2017; Davis, 2017; Grimsdottir & Edvardsson, 2018; Kaur & Singh, 2016; Wikum, 2016; Yong & Mustaffa, 2017). Ikeja in Lagos State, on the other hand, does not appear to have any evidence of similar research. Through a re-examination of the essential variables for the successful completion of building projects in Lagos State, the researchers solicited the opinions of specialists. Several construction projects are cluttering Lagos State's streets that have not been completed to the highest standards. This research will shed light on the most common reasons these projects fail and offer a wide-ranging set of recommendations for fixing them.

Objectives of the study

1. To identify influential success factors critical for construction sector projects in Lagos.
2. To investigate which factors contribute to project success in construction projects in Lagos.

LITERATURE REVIEW

Project Management

Planning, coordinating, and administering a project or business is what we call "project management." It's a complicated procedure that calls for the integration of many different elements to get the desired result. The first steps in any project management process are to define the project's goals and to identify the people who have a vested interest in seeing the project succeed. After determining what needs to be done to accomplish the goals, the project manager drafts a project plan detailing how the work will be done. The project manager is responsible for coordinating the work of everyone who will be contributing to the project. The project manager then keeps tabs on progress and makes adjustments as necessary to make sure the project is on track. Numerous approaches to project management exist, each with the potential to yield the desired result. Common approaches include the waterfall, spiral, and agile approaches.

The most conventional of the three, the waterfall technique follows a sequential set of steps. Quality control must be performed at each stage of the process, and work must be accomplished in a logical progression. That's why it works so well for software development and similar projects when the requirements are clearly understood, and the scope is constrained.

In projects when needs are in a continual state of flux, and a more iterative approach is needed, the spiral technique is an excellent choice. This method permits rapid prototyping, continuous input from end-users, and flexibility in responding to shifting requirements. Common applications include research and development initiatives, where precise needs are sometimes nebulous at best.

Finally, the agile technique is a malleable strategy that prioritises speedy development and incremental upgrades. It's premised on the idea that collaborative efforts between several people can result in functional software more quickly. It is flexible and easy to modify, making it a good fit for projects with uncertain requirements. Projects of different types and with different needs call for different project management approaches, each with its own set of advantages.

Project Success

In today's modern world, the majority of organisations operate on a project or program basis. They have arranged their efforts in the form of programs and initiatives in order to accomplish their strategic goals and take advantage of any potential benefits. It is now more important than it has ever been for these projects and programs to be properly administered in order for them to be successful. Its primary goal is to ascertain whether or not the projects are effective on the basis of

the specific guidance that is provided to each project on an individual basis. It is possible for us to guarantee that each project will be finished in the appropriate manner if we follow the advice of Bob Buttrick, who is widely regarded as a leading authority on project management.

The word “success” is a well-known and straightforward concept. Still, in the business world, “success” refers to a broader set of characteristics that enable organisations, initiatives, and programs to achieve their goals. Varied people have different meanings and perspectives on what it means to be successful. In their article, Badewi (2016) and Davis (2017) stated that “success” indicates “compromise or agreement from a linked set of people on a good performance in the context of a project.”

Another scholar claims that project success is addressed within a community of people who have access to one another and that they rarely express consensus on it (Baccarini, 1999). Many perspectives were published on project success in the past. Still, such ideas and perceptions were restricted to the project implementation phase, whereas project success definitions are comprehensive, as Lamprou and Vagiona (2018) stated in their thoughts on Nigeria’s abandoned public-sector initiatives. He noted that many capital projects in Nigeria failed at various phases of development, and those that did succeed gave substandard services. According to Lamprou and Vagiona (2018), the former Nigerian President, Goodluck Jonathan, established the Presidential Project Assessment Committee (PPAC) in March 2010 to investigate the Federal Government’s abandoned projects. According to the findings, an estimated N7.78 trillion will be required to finish the 11,886 abandoned projects. N1.5 trillion in yearly budgeting is necessary to complete all current projects if the government does not start new ones. This does not account for cost overruns and delays, which are very sure to occur. Since so many public sector building projects in Nigeria are failing, researchers have begun looking at what makes a project work out in the end. Identifying essential success variables is the first step in enhancing project effectiveness and attaining project objectives, according to Kulshreshtha et al. (2017).

A company’s critical success factors are those components of the business that are critical to achieving and maintaining the company's goals. A technique that attempts to make apparent those few areas that influence management success, according to Baker et al. (2008) and Tiwari and Suresha (2021), is a crucial success factor. Specifically in the financial, information, and industrial systems industries, the approach was first utilised as a management tool in the 1970s as a management metric.

For Lagos, Nigeria’s hub for public sector building projects, it is necessary first to establish the components of overall project success. Project management and product success are independent aspects of project success, each focusing on a different part of the project (Grimsdottir & Edvardsson, 2018). When a project’s management is not up to the task, it can lead to delays, cost overruns, and even cancellation, while a failed project has subpar results. Traditional indicators of project success (time, cost, and quality criteria) are not the only ones addressed in this study. The project outcome’s ability to alleviate public demands is also considered.

Critical Success Factors for Public Sector Construction Projects

Most countries' building industries are crucial to their overall economies. As a result, everyone working on the project wants it to be a success as much as possible. However, increased complexity in design and stakeholder engagement provides significant obstacles for both clients and contractors in today's construction projects, making it difficult to properly deliver the project (Doloi, 2009). Customers aren't the only ones that lose out when a project isn't finished on time; the contractor, consultant, owner, and general public are all impacted as well (Adil et al., 2019). It is generally agreed that a project has been successful if its goals—which may include things like budget, schedule, and performance—have been attained (Kerzner, 2013). Several studies have

shown that when it comes to building projects, cost, scope, and time are the most important factors (the triple constraint). For many years after, this "iron triangle" of fulfilling cost, time, and performance criteria has been the gold standard for measuring project success (Williams, 2016). The project's success or failure will be determined by how well these criteria are met. There are many different types of stakeholders in today's complex project environments, and as a result, the very definition of success has evolved (Chan et al., 2002). Achieving the best possible results in a project is the goal, and the concept of project success provides standards and principles to assist participants in getting there (Chan & Chan, 2004). Since the inability to assess project success has long been attributable to the lack of an accepted idea and a set of criteria for the performance of the construction project, it is not surprising that the term "project success" is often used interchangeably with "project management success" (Kerzner, 2013). Success criteria relate to a predetermined set of measures that must be met in order for an endeavour to be deemed a success (Lim & Mohamed, 1999; Mladenovic et al., 2013). Project managers need success criteria so that they can evaluate how well their projects are doing in terms of meeting their objectives (Chan et al., 2002). It is important to keep in mind that studies use varying criteria to determine success. Some characteristics may be measured scientifically, while others are more subjective or social in nature (Bryde, 2005).

Studies have varied in what they consider to be successful. In their research, Chan and Chan (2004) identified two types of criteria for the success of building projects: objective and subjective evaluations. Success metrics are simply and objectively measured R494 in contrast to subjective assessments of success. Success in project management, the product, and the market are the three pillars around which Al-Tmeemy et al. (2011) build their model of project success (Osei-Kyei & Chan, 2017). The researchers state that achieving management goals in terms of time, quality, and money is what constitutes a successful project management effort. Project potential is measured along three dimensions: how much the project can improve the company's long-term reputation, revenue, market share, and competitive advantage, and how satisfied customers will be with the product's final form and function. Timeliness, affordability, quality, agreement, process and outcomes, and satisfaction of stakeholders were identified as six success factors in building projects by Liyanage and Villalba-Romero (2015). In contrast, Mladenovic et al. (2013) included environmental impact, value for money, efficiency, level of services, and effectiveness as additional project success factors in addition to profitability, customer satisfaction, and owner satisfaction. Shenhar et al. (2002) used 13 criteria, which were categorised as "fulfilling design aims," "benefits to consumers," and "commercial success and future possibilities."

There must be a clear relationship between a project and an organisation's strategic aims for it to be successful. Each project should be able to show how it contributes to the goals and priorities that bring the most value to the organisation (Mathar et al., 2020). This measure is necessary to avoid a situation where the project is deemed successful because its time, cost, and quality requirements were met. Still, the final product fails miserably to provide the services promised.

The success of public sector building projects may be attributed to some variables, including effective monitoring and assessment (Amade et al., 2015), managing the flow of information with tact (Lester, 2021), efficiency with which project operations are coordinated and integrated (Tiwari & Suresha, 2021), The ability of the project manager to effectively plan and budget the project, as well as to choose, train, develop, and motivate the right team, are all critical components of a successful project.

Successful projects are based on proper planning, according to Haughey (2014), which provides a clear record of project milestones and deliverables, a realistic timetable; accurate cost estimates; and comprehensive resource needs. Adequate planning also serves as an early wake-up call, allowing the project team to see when tasks are slipping behind schedule and stay on top of the

project's development. According to Ismail (2013), "Besides political factors, a key cause for failure of projects is that most public projects are known to be ill-conceived or lack preparation before implementation."

According to Queiroz and Mendes (2020), three (3) procurement-related parameters may be considered factors contributing to a project's success. The procurement process, the tendering method, and the contracting mechanism are all considered by the duo to be the most critical aspects of a project's design and construction, according to their findings (type of contract) Barasa (2014), Adnan et al. (2014), and (Grimsdottir & Edvardsson, 2018) are other examples.

The success of a construction project might be affected by factors that are not directly related to the project itself. According to several writers like Queiroz and Mendes (2020) and Chua et al.; (1999), these factors are external or environment-related. Economic, social, political, physical, administrative, and financing clearances, adequate funds, technology, talent availability, and the commitment of all parties involved are the features used to measure this component (Chugh & Nitin, 2018; Silva et al., 2016; Queiroz & Mendes, 2020). According to Kulshreshtha et al. (2017), severe weather, an act of God (force majeure), and price volatility are external issues that should be considered throughout any building project. According to Lester (2021), political instability is the most common external factor affecting the success of Nigerian government-building projects.

The success of a project's management is determined by how well it performs against established benchmarks of timing, budget, and quality (Adabre & Chan, 2019). When schedule and cost estimates are wrong, poor schedule performance and budget performance results are expected. As stated by Lester (2021), a lack of accurate estimates of schedule and money is a major contributing cause to the failure of most projects. This claim agrees with their results. Nigeria's public-sector construction projects are more prone to inaccurate cost estimates than private-sector projects, as seen by their poor performance and outright failure. Project factors that affect the stakeholders' interests: Many authors have said that effective stakeholder management is critical to construction success (Yong & Mustaffa, 2017). To remove impediments and deal with problems as they emerge, Mathar et al. (2020) found that the more enthusiastic stakeholders are about the project, the better they are at removing and responding quickly. It is only through eliminating roadblocks, resolving challenges, and collecting and implementing the needs of all stakeholders that a project may be completed successfully and successfully.

According to various sources, other essential factors for public sector construction project success include the ability of contractors to manage design (Ismail, 2013) provision of adequate funding by the client (Alashwal et al., 2017; Yong & Mustaffa, 2017), and project management leadership skills (Chan et al., 2004).

RESEARCH METHOD

The research methodology used in the study involved the use of semi-structured questionnaires to gather information from construction experts working in the Lagos State Ministry of Works. The participants in the study were 130 professionals and top-level management personnel who were registered in the Ministry of Works. These individuals included builders, architects, engineers, and project managers. The Krejcie & Morgan Sample Size table determines the study's sample size to be ninety-seven (Krejcie & Morgan, 1970). Convenient and purposive sampling was used to deliver 97 copies of the questionnaire to the respondents, while 66 usable questionnaires were retrieved and used for the analysis based on their information. This represents a 68% response rate.

The instrument's content validity was determined with the help of professors and industry experts. The reliability of the research instrument was determined using Cronbach's alpha. The Cronbach's alpha was 0.745, and the Spearman-Brown's coefficient was 0.802, indicating high

internal consistency of the questionnaire items. A measure of 0.7 or higher is considered acceptable. Descriptive statistics and Analysis of Variance were the primary data analysis methods.

FINDINGS AND DISCUSSION

Table 1. Descriptive Statistics of the Responses

Descriptive Statistics			
	N	Mean	Std. Deviation
Political factors	32	6.25	1.901
Leadership skills of the project manager	32	6.16	1.439
Effective budget planning	32	6.00	2.200
Team management	32	6.00	1.459
Effective Procurement Process	32	5.81	2.306
Managing the flow of information	32	5.56	1.865
Effective Monitoring and Evaluation	32	5.41	2.153
Stakeholder Involvement	32	5.25	1.918
Effective Project Planning	32	5.19	2.334
Efficient coordination of the project	32	4.50	1.760
Valid N (listwise)	32		

Source: Researchers (2023)

The table above shows the descriptive statistics of the responses of the participants of the study. It displays the mean and standard deviation of their responses. The table shows that 32 participants participated in the study, and the mean of their responses indicates that political factors, with a mean of 6.25, are the major success factor for public sector projects in Lagos State, followed by the leadership skills of the project manager (6.16), effective budget planning (6.00) and team management (6.00) respectively. The standard deviation, which measures the spread of the participants' opinions, indicates that the responses are not clustered around the mean. It shows the diversity in the responses of the participants.

Table 2. Analysis of variance (ANOVA)

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Effective Monitoring and Evaluation	Between Groups	89.552	16	5.597	1.550	.201
	Within Groups	54.167	15	3.611		
	Total	143.719	31			
Managing the flow of information	Between Groups	64.708	16	4.044	1.405	.258

	Within Groups	43.167	15	2.878		
	Total	107.875	31			
Efficient coordination of the project	Between Groups	51.800	16	3.238	1.099	.430
	Within Groups	44.200	15	2.947		
	Total	96.000	31			
Effective budget planning	Between Groups	89.933	16	5.621	1.404	.258
	Within Groups	60.067	15	4.004		
	Total	150.000	31			
Team management	Between Groups	35.000	16	2.188	1.058	.458
	Within Groups	31.000	15	2.067		
	Total	66.000	31			
Effective Project Planning	Between Groups	85.308	16	5.332	.957	.536
	Within Groups	83.567	15	5.571		
	Total	168.875	31			
Effective Procurement Process	Between Groups	129.608	16	8.101	3.445	.011
	Within Groups	35.267	15	2.351		
	Total	164.875	31			
Stakeholder Involvement	Between Groups	77.700	16	4.856	2.007	.093
	Within Groups	36.300	15	2.420		
	Total	114.000	31			
Leadership skills of the project manager	Between Groups	33.052	16	2.066	.994	.507
	Within Groups	31.167	15	2.078		
	Total	64.219	31			
Political factors	Between Groups	52.333	16	3.271	.822	.050
	Within Groups	59.667	15	3.978		
	Total					

Total	112.000	31
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Source: Researchers (2023)

A one-way ANOVA was performed to compare the effect of the identified critical success factors on their contribution to the success of public sector construction projects in Lagos State, Nigeria. A statistically insignificant difference was found among seven out of the nine identified critical success factors. These are Effective Monitoring and Evaluation - $F(89.552, 54.167) = 1.5$, $p=.201$, Managing the flow of information- $F(4.044, 2.878) = 1.41$, $p=.258$, Efficient coordination of the project - $F(51.8, 2.44.2) = 1.09$, $p=.430$, Effective budget planning - $F(89.933, 60.067) = 1.40$, $p=.258$, Team management- $F(35.0, 31.0) = 1.06$, $p=.458$, Effective Project Planning - $F(85.308, 83.567) = 0.96$, $p=.536$, Stakeholder Involvement - $F(77.7, 36.3) = 2.00$, $p=.093$, Leadership skills of the project manager - $F(33.052, 31.167) = 0.99$, $p=.507$. Only two of the identified critical success factors, namely Effective Procurement Process - $F(129.608, 35.267) = 4.44$, $p=.11$, and Political factors - $F(52.333, 59.667) = 0.82$, $p=.050$, proved to be statistically significant.

CONCLUSIONS

Economic progress in emerging nations cannot be allowed to pause because of construction project failures. Mechanisms to guarantee construction project success can be developed, but they will not be as successful as collecting data from the users of the mechanisms that test it often. The primary objective of this research was to determine and assess what elements are most important for the success of public sector building projects in Lagos State, Nigeria.

In addition, seven component factors were deemed necessary after applying the factor analysis method to the ten research variables. A quick analysis reveals that the most critical aspects of public construction projects in Lagos State, Nigeria, are political considerations, the project manager's leadership qualities, an appropriately allocated budget, and efficient team management.

Effective procurement process and stakeholder involvement were found to have a significant impact on the success of public sector construction project delivery, while the leadership skills of the project manager, effective communication management, effective coordination of project activities, and efficient project delivery did not.

LIMITATION & FURTHER RESEARCH

Due to the researchers' prior knowledge of Lagos State, Nigeria, the scope of this study is constrained to that region. However, the results were inferred to accurately represent the knowledge of building professionals in Lagos State, Nigeria. Since the actual response rate was too low to allow for any sort of generalizability, this might potentially harm the study's quality. The research was conceptually constrained as it only examined critical success factors and public sector projects. Other elements that affect project performance, such as the skill of the project manager, were not the study's primary emphasis.

Recommendation

ANOVA was used to analyse how the means of the independent variables differed, but it was unable to reveal how the statistical groups differed from one another. Regression analysis may be used in additional studies to learn more about the topic. Construction contractors, consultants, project managers, etc., in Lagos State, must consider these factors representing the key critical success factors in public sector construction project delivery to successfully complete the project within the established budget, time, and quality constraints.

Suggestion for further studies

To test if the results are the same, the study may be repeated in different industries, such as manufacturing companies and private sector initiatives. Future research can include a third variable, either a mediating or an intervening variable, to observe how the results turn out. Finally, the methodology may be modified such that future studies use secondary data to check if the outcomes would be the same.

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