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Project Management Practices and Project Performance of Construction Firms in Rivers State, Nigeria

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Abstract: *This study examined the relationship between Project Management Practices and Project Performance of construction firm in Rivers state, Nigeria. The cross-sectional survey design was utilized and a total population of 280 supervisors and managers from eight (10) construction firms in Rivers State were covered. A sample size of 162 managers and supervisors were drawn as the sample size of the study. Data were collected using copies of well-structured questionnaire and the simple random sampling technique was utilized in the study. The data was analyzed using the Spearman's Rank Order Correlation and Partial Correlation. The result of the analysis revealed that the dimensions of Project Management Practices (project cost management and project risk management) have a significant positive relationship with project quality and project timeliness. It was concluded that to enhanced Project Management Practices in terms project cost management and project risk management will help improve the Project Performance of construction firms. The study recommend amongst others that Management of construction firms should take measures to ensure that project management skills and strategies are adequately considered in the planning and execution of construction projects.*

1.0 Introduction

In recent time, organizations activities are becoming more project based. The implication is that organization tends to split routine work into programs of project in order to quickly achieve organizational goal of value added. Good management of these projects is essential if the organization is going to succeed. Equally important to individual project performance is ensuring that the right projects are carried out. Directing all the projects successfully will ensure we are doing the right projects. Judges and Muller (2005) in their article mentioned that in order to define what performance means in a project context is like gaining consensus from a group of people on the definition of "good art." Project performance is a topic that is frequently discussed and yet rarely agreed upon (Baccarini, 1999). On were limited to the implementation phase of the project life cycle to definitions that reflect an appreciation of success over the entire project and product life cycle (Judges and Muller, 2005). Project Performance Review focuses on evaluating projects efficiently and in context, identifying important improvement opportunities and leading project and organizational management practices. It advises how these can be put in place to give stakeholders confidence in the control and delivery of their projects without waste. Managing project is one of the oldest and most respected accomplishments of mankind. This is highlighted by the achievement of the builders of pyramids, the architects of ancient cities, the mason and craftsmen of Great Wall of China and other wonders of the World (Peter, 2001). Project management is the art — because it requires the skills, tact and finesse to manage people, and science because it demands an in-depth knowledge of an assortment of technical tools, of

managing relatively short-term efforts, having finite beginning and ending points, usually with a specific budget, and it must meet or exceed customers' needs and expectations (Duicu et al., 2011). Project make up around fifty percent of all work carried out and as a result is deemed the vehicle for the execution of organizational growth. The accomplishment of project through the application and integration of the project management process of initiation, planning, executing, monitoring, controlling and closing, is known as project management. Project management integrates these functions progressively through the project life cycle with the aim of satisfying the stakeholders and constituents according to the project's established requirements. Stakeholders are those who have a direct stake in the project while the project's constituents are those who may be impacted by the consequences of the project. Project success is typically generated when the stakeholders and constituents express their collective satisfaction according to the degree of their involvement. Project management also includes planning, organizing, directing and controlling activity in addition to motivating what are usually the most expensive resources on the project. Atkinson (1999) reported that project management has cost quality, and time as its critical factor. Baker *et al* (1983) use a sample of 650 completed aerospace, construction with data provided primarily by project managers on the factors contributing to project performance. Several factors that project performance of firms have been researched but dearth still exist in literature on how project management practices relates with project performance.

Statement of the Problem

The conventional approach to project management seems not to be a sufficient condition for project performance. This perhaps is a result of the increasing complexity of project, large capital investment, widely dispersed project participants, stringent quality standard, escalating cost, environment shocks, increasing stakeholders' power and advancement in ICT. The foregoing challenges presented have the capacity to influence project success in different ways. However the ability to absorb the shocks thus created may depend largely on project management strategies. In the view of Harvey (1999), a very good project management framework should take cognizance of cultural, structural, practical and personal elements. Expectedly it should reflect good orientation, non−repetition activity and a particular evaluation mechanism to measure output/performance (Kerzner, 2003). Project quality management includes processes and activities of the performing organization that determine quality policies, objectives and responsibilities so that the project will satisfy for needs for which it was undertaken. It implements the quality management system through policy and procedures with continuous process improvement activities conducted throughout as appropriate. However project still experience massive failure as attaining good performance in project has remain a challenge. Based on this fact, this study therefore seek to examine how project management practices in terms of team project cost management and project risk management relates with project performance of construction firms in Rivers state

Objectives of the Study

The specific objectives are to examine the relationship between;

i. Project Cost Management and Project Timeliness of construction firms in Rivers State, Nigeria
ii. Project Cost Management and Project Quality of construction firms in Rivers State, Nigeria
iii. Project Risk Management and Project Timeliness of construction firms in Rivers State, Nigeria
iv. Project Risk Management and Project Quality of construction firms in Rivers State, Nigeria

Research Questions

The following research questions served as a guide in this study;

i. What is the relationship between Project Cost Management and Project Timeliness of construction firms in Rivers State, Nigeria?
ii. What is the relationship between Project Cost Management and Project Quality of construction firms in Rivers State, Nigeria?
iii. What is the relationship between Project Risk Management and Project Timeliness of construction firms in Rivers State, Nigeria?
iv. What is the relationship between Project Risk Management and Project Quality of construction firms in Rivers State, Nigeria?

Research Hypotheses

The null hypotheses were formulated as a tentative answer to the research questions;

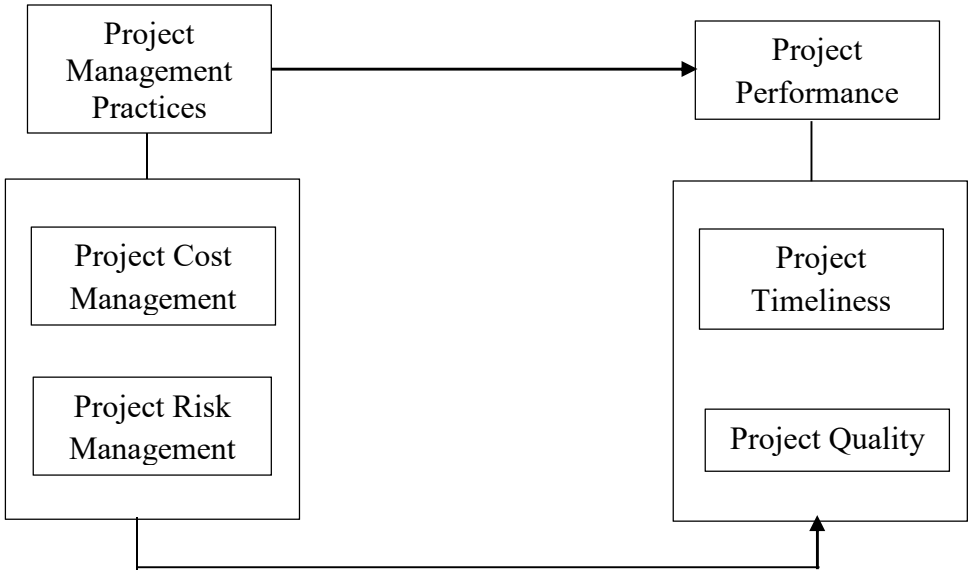
H_{o1}: There is no relationship between Project Cost Management and Project Timeliness of construction firms in Rivers State, Nigeria

H_{o2}: There is no relationship between Project Cost Management and Project Quality of construction firms in Rivers State, Nigeria

H_{o3}: There is no relationship between Project Risk Management and Project Timeliness of construction firms in Rivers State, Nigeria

H_{o4}: There is no relationship between Project Risk Management and Project Quality of construction firms in Rivers State, Nigeria

2.0 Conceptual Framework



Source: The dimension were adapted from Issa and Akhigbe (2022).

Project Management Practices

A project is a brand-new, singular, and transient series of activities with a clear beginning and end that uses resources in a planned and organized way with the aim of accomplishing specific goals. Project characteristics call for a particular style of management. Application of knowledge, skills, equipment, and techniques to project activities is known as project management. The project management processes of initiating, planning, executing, monitoring and controlling, and closing are applied and integrated to complete a project (Project Management Body of Knowledge, 2004). Project management is acknowledged as a crucial factor in future business success and as the primary enabler of organisational change (Whitty, Maylor, 2009). Project management has developed over time into a sophisticated and complex process, and in today's enterprises, it is the primary method for managing change.

According to Söderlund (2011), management and organization studies includes project management as a subfield. Project management is defined in a number of ways, most of them by professional organizations, although they all refer to the same idea. APM (2012), for instance, describes project management as "a process by which projects are established, planned, monitored, controlled, and delivered such that the agreed benefits are realized." Project management is described as "the art of organizing and managing human and material resources all through the life of a project, by using modern management techniques to achieve predetermined objectives of scope, cost, time, quality, and participant satisfaction," according to The Project Management Body of Knowledge (PMBK, 2000). A method of implementation that seeks to enhance the work in order to achieve high performance can be characterized as project management (Loo, 2002). It consists of tasks or procedures that improve the project's end result and, by extension, the

organisation where it is used. Project management is viewed in this study as a structured approach to attaining clearly stated goals through the use of tried-and-true tools and strategies for organizing, planning, evaluating, and managing work. When correctly implemented, project management techniques increase the likelihood that a project will succeed (Thomas & Mullaly, 2008). However, because their application may not have the same results for other businesses, each organisation must evaluate the appropriateness of each technique. Therefore, project management can be implemented using tools and procedures that should be adapted to the environment of the organisation.

Many businesses across a range of industries are starting to see the advantages of implementing project management techniques. "The field of project management has increasingly positioned itself as a universal and politically neutral toolkit of techniques appropriate for any type of activity in any sector, enabling the tight control of discontinuous work processes, with particular potential for the control of expert labor."

The delivery and support of project management processes are carried out and supported by project management practices, which, when managed well, can result in the success of projects (Barbosa et al. 2021). This includes methods for managing projects (such as the use of a work breakdown structure or earned value management), various rules for defining organisational processes (such as the use of procedure documents, checklists, job aids, and templates), as well as the use of software programmes and different databases (Fernandes et al. 2013). Because they show how managers carry out project management procedures, studying for tools and techniques is a practical way to research project management practices. Additionally, they are specific and tangible applications of laws and principles that should be chosen in accordance with the environment of the organisation in which they are to be used (Besner and Hobbs 2008). Tools and techniques are more closely related to people's actions, daily routines, and tacit knowledge (Besner and Hobbs 2006). Therefore, in this research study, project management practices are simply viewed as the tools and procedures used by practitioners to "do the job" and carry out a project management process. The most popular and practical project management strategies have been determined through several investigations (tools and techniques). Some studies, like those by Besner and Hobbs (2006) and Fernandes et al. (2013), refer to tools and approaches in general, while others, like those by Tereso et al. (2019) and Besner and Hobbs (2006), pertain to particular settings (2008).

Project Cost Management

More construction projects in the competition are essential for the survival and growth of construction businesses, since they generate significant economic and social advantages. The main elements for successfully completing any construction project are to ensure quality, safety, and satisfaction and maximised economic returns. These are not only the existing fundamentality of construction companies, but also the positive protection of acquiring a wider market. In order to finish the project within the allocated budget, cost management methods such as estimating, budgeting, and managing expenses are used. As a result, the control of project costs forms the foundation of managing construction projects.

The contractor's expenses for labour, supplies, utilities, etc., as well as the contractor's overhead and earnings, can all be grouped under the term "cost." Cost management, on the other hand, is the

procedure used to determine, approve, and pay for the costs and expenses that are formally associated with the project (Vasista, 2017). One of the most essential factors in determining whether a project will succeed or fail is its cost, which is a key factor throughout the project's life cycle. If the project's goals are attained within the budget allotted, it will be deemed successful (Memon, et al., 2011).

The project cost management process of contractual companies involves six procedures, such as cost estimation, cost planning, cost control, cost accounting, cost analysis, and cost assessment. This is in accordance with the principles of dynamic cost management and the substance of cost management.

1. **Cost Estimation**: Is the description approximate of financial resources needed to complete project activities.
2. **Cost Planning** Cost planning is an expression of the target cost, the foundation for determining project management responsibility, the execution of cost control, and the primary source of cost control.
3. **Cost Control** The various stages of construction, which make up the bulk of project cost management and are the most difficult to manage in terms of content and have the greatest degree of uncertainty, should all be under cost control, according to the principle of total cost management. The project management department should be the focal point for cost control, with attention given to three key areas: before planning (prior control), process management (a matter of control), and corrective management (subsequent control). To successfully manage the project's overall costs, it is necessary to take into account both the cost of managing risk and the cost of uncertainty.
4. **Costing Accounting** Basic accounting categories include the basis for project cost accounting should be the project manager's accountable cost objectives; the accounting's targets should be controllable costs that fall under the project manager's allowed purview. The entire accounting process should be monitored on a monthly basis. Both the "form accounting method" and the "accountant accounting method" are cost accounting techniques.
5. **Cost Analysis** Technical cost analysis techniques include comparison methods (primarily including comparisons between the actual project quantity and the estimated project quantity, comparisons between the actual consumption and planned consumption, comparisons between the actual price and planned price, and comparisons between the actual expenditure and planned expenditure), factor analysis methods, margin calculation methods, ratio methods, etc.
6. **Cost Assessment** Project cost evaluation makes recommendations based on technical advancement and cost containment by combining the project construction plan, construction methods, and construction technology. The accounting of the cost of completing project's goals and an evaluation of the effectiveness of the cost management process should be included in the project cost assessment's content.

Project Risk Management

Project risk is a hazard that, if it materialises, could have an impact on at least one project goal. Among the possible objectives are scope, schedule, money, and quality. A risk may have one or more causes, as well as one or more repercussions, if it materialises. A need, assumption, restriction, or condition that raises the likelihood of a bad or good outcome is referred to as a cause. Risk factors may include elements of the project environment, such as subpar project management techniques or reliance on uncontrollable external parties, that may increase project risk.

In the context of construction project management, risk management is a thorough and methodical approach to detecting, analysing, and addressing risks in order to meet project objectives (ICEAP, 2005; PMI, 2007). The identification and analysis of risks, as well as the enhancement of the processes for managing construction projects and the efficient use of resources, are all advantages of the risk management process. Construction projects can be incredibly difficult and uncertain. Construction projects may suffer negative effects as a result of risk and uncertainty (Flanagan, Norman, and Chapman, 2006; Mills, 2001). Risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, risk monitoring, and control are all parts of project risk management, according to Project Management Institute (2008).

The most challenging part of project management is arguably risk management. A project manager needs to be able to recognise risks, pinpoint their underlying causes, follow these reasons through the project to their outcomes. It is crucial to start using risk management within the early stages of a project, when important choices like choosing an alignment and choosing a building style can be influenced (Eskesen, et al., 2004).

Construction projects sometimes have unforeseen outcomes. In order to meet project objectives in terms of time, money, quality, safety, and environmental sustainability, risk management in construction projects has been acknowledged as a critical step (Zou, Zhang and Wang, 2007). A construction project's lifespan, from the planning stage through completion, is the time during which project risk management is implemented. This iterative process is advantageous when used consistently across the whole project lifecycle.

Numerous authors have provided detailed descriptions of the risk analysis and management methods (Ahmed, et al., 2007; Cretu, et al., 2011; Chapman and Ward, 2003; Klemetti, 2006). The major steps of a typical risk management process, according to Wysocki (2009), are as follows: Risk identification, assessment, mitigation, and monitoring are the first three steps. The first and possibly most crucial step in the risk management process is risk identification, which aims to pinpoint the origin and nature of threats. It entails identifying possible risk event circumstances in the construction project and clarifying risk duties (Wang and Chou, 2003). The foundation for the following processes in risk management—analysis and control—is created by risk identification. Effective risk management is ensured by accurate risk identification. The identification and mitigation of project risks, according to Carbone and Tippett (2004), are essential aspects in successful project management.

It is crucial to know which risk variables are working concurrently throughout the project because there are many potential dangers that could cause the construction project to fail. According to Raz et al. (2002), too many project risks in the form of unfavourable occurrences might result in

construction project delays, exorbitant spending, subpar project outcomes, or even project collapse.

According to the type of risk, Tah and Carr (2002) divided it into two categories: external risks and internal risks. The authors divided risks into six subsets: local, global, economic, physical, political, and technological change using fuzzy logic and a work breakdown structure. The classification of the risks, according to Wang et al. (2004), mostly depends on whether the project is local or global. Regardless of whether a project is local or global, internal hazards apply to all of them. International initiatives frequently face external risks like ignorance of social circumstances, economic and political scenarios, unfamiliar and novel procedural formalities, regulatory framework, and governing power, among others.

Project Performance

Research projects in management are frequently conceptualised as distinct and unreliable and investigated from a functionalist perspective. As a result, project performance is perceived as being execution-oriented, with a focus on controlling risk and uncertainty (Winch and Maytorena 2010) while delivering projects on schedule and under budget (Flyvbjerg, 2010). However, a number of key contributions emphasise how projects are heavily institutionalised, and as a result, project method and output vary little from project to project (Kadefors, 1995).

There are many different methods and criteria to evaluate the progress and success of projects; the oldest is based on the so-called "iron triangle," which consists of the principles of cost, time, and quality (Meredith & Mantel, 2000). Therefore, a project would be deemed successful if it stayed within the primary budget, adhered to the timeframe, and met the standards set forth by stakeholders.

Project success, according to Lianying (2013), is an ill-defined concept that is difficult to define. In order to determine the relationship between project success and project managers' leadership style, he quoted Nagarajan (2012) who developed a composite project success measure consisting of ten factors. The performance of engineering projects, information projects, and organisational initiatives was primarily assessed using these ten criteria. Also mentioned in Chan and Chan (2002), project success criteria varied by field. Then, the indicators of time, cost, health and safety, profitability and quality, technical performance, functionality, productivity, satisfaction, and environmental sustainability were categorised into "objective measures" and "subject measures" and were stressed particularly for design/build projects in the construction industry.

Setting a criterion or criteria for measuring project deliverables can be thought of as the simplest definition of project success. For a long time, time, scope, and money constraints were used to gauge a project's success. This has since been broadened throughout time to take into account additional criteria, such as achieving the enterprises' financial and strategic objectives, and is now generally surrounded by stakeholder satisfaction. Pinto and Slevin (1988) looked for a more comprehensive model for project success. speculating that both internal (project) and extrinsic (proponents) variables contributed to a project's success. Time, cost, and performance are intrinsic (project) characteristics that the project manager has a great deal of control over. Utility, satisfaction, and efficacy of the project outcome are extrinsic (proponents) factors; regrettably, these factors cannot be evaluated prior to project completion; one can only guarantee them during project execution, up to a point, by understanding client needs and translating them into

specifications of the project deliverables. According to Jugdev and Thomas (2002), managing expectations is the key to a project's success. They argue that managing expectations goes beyond having a shared objective and having the capacity to perform at the project.

Project Timeliness

Every construction project needs to have a schedule. The whole range of a project's required planning, acquisition, design, and construction operations is characterised as a timelines in the discipline of construction management. A typical project schedule for transportation projects includes the following elements: project initiation, preliminary engineering, environmental assessment, right of way mapping and acquisition, utility engineering and adjustment, final design, letting (advertising and bidding), contract execution, construction, and project close-out. The projected dates for when specific tasks will occur are calculated using the unique durations for each project activity and the logistical connections between distinct tasks.

A timeline of project activities must be made as part of the scheduling process. The objective is to conform the project's final work plan to a predetermined timeframe, which specifies the length of time and the sequence in which each task must be completed. A carefully thought-out schedule breaks down a project into its specific activities, groups them into distinct phases, and specifies the start date for each activity. A well-designed, precise schedule can help in the protracted process of taking a project from conception to completion. Preliminary design, environmental study, right-of-way acquisition, and utilities analysis are all parts of the project planning process that begin once a transportation project need and appropriate funding sources have been determined. The project then moves forward with detailed design and eventually construction, operations, and maintenance. The process might take many years to complete, even with no setbacks. A well-made timeline not only helps to keep the project on track during this time, but it also enables planners to better grasp the project's requirements and duration before deciding on funding.

The enhanced resources a project will produce in the future is one of the key advantages of investing time and effort into scheduling it. By way of comparison, finishing a construction project without a timeline is similar to travelling without a map; while you may finally get there, a lot of time and money will have been spent in the process. All project stakeholders will benefit greatly from a scheduling estimate that is reasonably accurate for the primary project components.

In addition to the potential loss of money, poor timing for transportation projects might influence other projects that are already in the works, necessitating changes to the entire region's transportation planning programme. Today's urbanized areas frequently have construction projects going on while a lot of traffic is moving through, which disrupts travel both physically and chronologically. Additionally, the complexity of today's building projects increases the potential for scheduling errors to result in cascading delays and other problems. Most crucially, inaccurate timeline estimates may also cause planners to underestimate the amount of time necessary to accomplish a project or to prioritise tasks less wisely. As a result, a transportation program's overall performance depends on a precise project timetable.

Project Quality

There is no single, widely-accepted set of standards for determining if a project is successful, which makes the concept of "project success" very nebulous. Due to this, project performance is still typically assessed using the "iron triangle" of time, cost, and quality performance (Atkinson,

1999). Even though quality is a crucial component of project management, (Kloppenborg & Opfer, 2002) reported that there was a decline in the number of articles in project management journals that addressed quality management from 1994 to 1998, and that decline continued from 1999 to 2003. Crawford (2006) also noted a decline in the number of articles in project management journals that addressed quality management.

The extent to which a project satisfies requirements determines its quality. In order to make sure that a project satisfies the identified needs it was designed to address, it entails developing and adhering to policies and procedures. Project quality management includes methods, procedures, and strategies to guarantee and enhance quality. However, project quality management techniques have not gotten as much attention, and when they do, statistical process control is the main focus.

Planning and control make up a substantial portion of management. Therefore, one would anticipate that project quality management would cover these two topics as well. Planning and quality control are both considered to be parts of quality assurance (QA), which is sometimes viewed as a holistic programme (PMI, 2004). However, the perspective adopted in this study is to describe quality planning, quality assurance, and quality control in terms of the Shewhart cycle, also known as the Plan-Do-Check-Act cycle (Deming, 1986). QC is referred to as the "Check-Act" elements, whereas QA is the "Do" element. Thus, there are three components that make up project quality management: quality planning, quality assurance (carrying out the plan), and quality control (QC). QC is the procedure used to make sure that quality assurance follows the plan. If quality assurance (QA) is the "healthy lifestyle" to prevent nonconformities, then quality control (QC) is the "medication" to treat defects and other nonconformities when the healthy lifestyle is insufficient to do so.

Project Quality Planning Making judgements about the actions necessary to satisfy quality criteria should be a part of quality planning, and the actions for achieving intended quality levels frequently involve using certain QA and QC methods. Therefore, choices about QA and QC methods must be made during the quality planning phase. Project Quality Planning is used in the development of new systems and involves judgements on the following: 1) Requirements that must be met (as expressed in accepted specifications and standards), including comparison to other projects. 2) The steps that must be taken as part of the project's overall strategy in order to achieve the necessary requirements, such as the tools and methods that would be applied during QA and QC. 3) The metrics must be applied in order to assess if the requirements and requirements have been met.

Quality Assurance In order to ensure that criteria are met, QA is needed for each individual project as well as for inter-project continuous improvement, which is made possible by methodical project close-out. As a result, project quality assurance and continuous improvement make up QA in a project environment. Continuous improvement raises the organisational capability to handle projects and increases the maturity of project quality management, whereas quality assurance on a project is solely concerned with that particular project. On a particular system development project, the following technologies and techniques can be utilised for quality assurance: approval of the project and the kick-off meeting, approval of each step of the project, system for managing configuration, Configuration identification, deployment of quality functions, The quality home, Reviews of designs, audits, the classification of traits, Analysis of the causes and effects of failure (FMEA), modelling, and prototyping (including laboratory tests and other experiments),

measuring technical performance (TPM), Checking, using checklists, members of the project team are trained

Quality Control Planning QC work and fixing ad hoc issues are two aspects of project quality control. Activities that can be planned out in some detail in advance make up planned quality control tasks. Ad hoc issues are obviously unplanned setbacks, and contingency reserves in budgets and schedules should include provisions for actions to look into and address such issues. QC activities comprise: 1) Configuration management (mentioned earlier) 2) Various phases of product and component inspections and fault reporting 3) Acceptance testing and final inspection of samples or, as in the case of heavy vehicle brake systems, all produced systems. Inspections frequently include acceptance testing in their scope. A number of issue-solving techniques are used in ad hoc problem solving, which also entails the examination and handling of all detected nonconformities.

Empirical Review

Olasupo, et al., (2012) evaluates the effects of project management on project success in Blackstone Construction Company. The study adopted a survey research design, using a combination of stratified and judgmental sampling techniques, A structured questionnaire was administered on 40 top and middle levels management staff of the company. The scales in the questionnaire were content validated, and has a reliability correlation coefficient of 0.11.The data collected was analyzed using descriptive statistics and Chi−Square distribution. The research findings reveal that there is a relationship between project quality and business success, Project quality and technical success. The study also reveals that there is a significant relationship between Project cost and acceptability by clients.

The purpose of Waldt (2016) paper is to unlock the potential for transdisciplinary contributions between Project Management and Performance Management by focusing on the methodologies, functional areas, and practical applications of both management disciplines. It is argued that the respective methodologies and their processes should be unpacked to identify the timing or moment when each discipline could, and should, make a contribution to the success of the other. This will add value to the theoretical underpinnings and practical applications of both study domains in the public sector. The respective contributions are illustrated by means of application realities of both management practices in the South African Public Service.

The study of Trisanto and Wardhan (2021) aimed at determining how the application of Earned Value in estimating the cost and project time. This study took a case study on the 8.505 m Maliku-Bantanan road improvement project located in Maliku and Sebangau Kuala sub-district, Pulang Pisau district, Central Kalimantan province, Indonesia. This earned value included budget and cost plans, unit price analysis, and project progress reports processed to obtain BCWS (Budgeted Cost of Work Scheduled), ACWP (Actual Cost of Work Performance), and BCWP (Budgeted Cost of Work Performance)which affected the control of the implementation time and project costs. The results showed that in the fifth month, the BCWP value was IDR 13,668,602,892.99 and the BCWS value was IDR 13,513,565,248.85from the second calculation. The value of BCWS was smaller than the value of BCWP, which was 1.13% of the budget plan. The conditions indicated that the implementation of activities in the field has been following the planned schedule at a lower

cost. These results are expected to be used as a guide for contractors and consultants in project planning that are more effective and efficient as well as on quality, time, and cost.

3.0 Methodology

This study used a cross-sectional survey and the target population was 162 managers and supervisors drawn from 8 construction firms in Rivers state. The sample size was determined using the Krejcie and Morgan (1970) formula for sample size determination. As a result, 162 questionnaires were distributed to managers and supervisors at the eight firms chosen. In this study, a simple random sampling technique was used. This method was chosen because it provides a true representation of the entire population and reduces the possibility of researcher bias in the sample case selection. Project Management Practices (independent variable) was measured using Project Cost Management and Project Risk Management. 5 items were used in measuring Project Cost Management (e.g. my organization ensure that cost is well managed to reduce project cost) and 5 items were used in measuring Project Risk Management (e. g. my organization is effective in managing risk associated with any given project). Project Performance (dependent variable) was measured using Project Quality and Project Timeliness. Project Quality was measured using 5 items (e.g. In my organization, project quality is well emphasised) and 5 items was used in measuring Project Timeliness (e.g. my organization is dedicated to prompt project delivery). Items were rated on a 4-point Likert scale, with 1 indicating strong disagreement, 2 indicating disagreement, 3 indicating agreement, and 4 indicating strong agreement. Statistical Package for Social Sciences (SPSS) version 21 aided the analyses of the bivariate hypotheses using the Spearman Rank Order Correlation Coefficient statistical tool.

4.0 Result

A total of 162 questionnaires were distributed to respondent, however, only 156 (96%) copies were returned and used for the study. The hypotheses test was undertaken at a 95% confidence interval implying a 0.05 level of significance. The decision rule is set at a critical region of $p > 0.05$ for acceptance of the null hypothesis and $p < 0.05$ for rejection of the null hypothesis.

Table 1: Project Cost Management and Project Quality

Correlations				
			Project Cost Management	Project Quality
Spearman's rho	Project Cost Management	Correlation Coefficient	1.000	.695**
		Sig. (2-tailed)	.	.000
		N	156	156
	Project Quality	Correlation Coefficient	.695**	1.000
		Sig. (2-tailed)	.000	.
		N	156	156
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS Output, 2023

H_{O1}: There is no significant relationship between Project Cost Management and Project Quality of construction firms in Rivers State.

The result of the analysis in Table 1 shows a significant level $p < 0.05$ ($0.000 < 0.05$), rho = 0.695 between Project Cost Management and Project Quality. This means that there is a significant relationship between Project Cost Management and Project Quality. The null hypothesis is rejected, and we restate that *there is a significant relationship Project Cost Management and Project Quality.*

Table 2: Project Cost Management and Project Timeliness

Correlations				
			Project Cost Management	Project Timeliness
Spearman's rho	Project Cost Management	Correlation Coefficient	1.000	.707**
		Sig. (2-tailed)	.	.000
		N	156	156
	Project Timeliness	Correlation Coefficient	.707**	1.000
		Sig. (2-tailed)	.000	.
		N	156	156
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS Output, 2023

H_{O2}: There is no significant relationship between Project Cost Management and Project Timeliness of construction firms in Rivers State.

The result of the analysis in Table 1 shows a significant level $p < 0.05$ ($0.000 < 0.05$), rho = 0.707 between Project Cost Management and Project Timeliness. This means that there is a significant relationship between Project Cost Management and Project Timeliness. The null hypothesis is rejected, and we restate that *there is a significant relationship Project Cost Management and Project Timeliness.*

Table 3: Project Risk Management and Project Quality

Correlations				
			Project Risk Management	Project Quality
Spearman's rho	Project Risk Management	Correlation Coefficient	1.000	.711**
		Sig. (2-tailed)	.	.000
		N	156	156
	Project Quality	Correlation Coefficient	.711**	1.000
		Sig. (2-tailed)	.000	.
		N	156	156
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS Output, 2023

H_{O3}: There is no significant relationship between Project Risk Management and Project Quality of construction firms in Rivers State.

The result of the analysis in Table 1 shows a significant level $p < 0.05$ (0.000< 0.05), rho = 0.711 between Project Risk Management and Project Quality. This means that there is a significant relationship between Project Risk Management and Project Quality. The null hypothesis is rejected, and we restate that *there is a significant relationship Project Risk Management and Project Quality.*

Table 4: Project Risk Management and Project Timeliness

Correlations				
			Project Risk Management	Project Timeliness
Spearman's rho	Project Risk Management	Correlation Coefficient	1.000	.699**
		Sig. (2-tailed)	.	.000
		N	156	156
	Project Timeliness	Correlation Coefficient	.699**	1.000
		Sig. (2-tailed)	.000	.
		N	156	156
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: SPSS Output, 2023

H_{O4}: There is no significant relationship between Project Risk Management and Project Timeliness of construction firms in Rivers State.

The result of the analysis in Table 1 shows a significant level $p < 0.05$ (0.000< 0.05), rho = 0.699 between Project Risk Management and Project Timeliness. This means that there is a significant relationship between Project Risk Management and Project Timeliness. The null hypothesis is rejected, and we restate that *there is a significant relationship Project Risk Management and Project Timeliness.*

5.0 Discussion of Findings

Project Cost Management and Project Quality

The bivariate hypotheses between Project Cost Management and Project Quality reveal a remarkable relationship between the two variables. The spearman correlation coefficient reveal that the p-value of 0.000 was less than 0.05 (p=0.000<0.05) which implies that Project Cost Management has a significant relationship with Project Quality. Thus the null hypothesis was rejected and the alternate hypothesis was accepted. The result of the correlation coefficient (r) is 0.695. This thus shows that Project Cost Management accounts for up to 69.5% level of Project Quality. Therefore increasing Project Cost Management will enable the project quality to increase. The first objective of the study which sought to examine if project cost management relates with project quality was achieved. This finding agrees with that of Olasupo, et al., (2012) who suggested that the cost of executing a particular project could be reduced without necessarily reducing its quality. Also according to Castrup, (2009), life-cycle costing can improve decision-making and is used to reduce cost and execution time and to improve the quality and performance of the project deliverable

Project Cost Management and Project Timeliness

The bivariate hypotheses between Project Cost Management and Project Timeliness reveal a remarkable relationship between the two variables. The spearman correlation coefficient reveal

that the p-value of 0.000 was less than 0.05 (p=0.000<0.05) which implies that Project Cost Management has a significant relationship with Project Timeliness. Thus the null hypothesis was rejected and the alternate hypothesis was accepted. The result of the correlation coefficient (r) is 0.707. This thus shows that Project Cost Management accounts for up to 70.7% level of Project Timeliness. Therefore increasing Project Cost Management will enable the project timeliness to increase. The second objective of the study which sought to examine if project cost management relates with project timeliness was achieved. This finding agrees with that of Waldt, G. (2016), who believe that if time is of the essence then quality or cost should be harmonized. If completion of project should be accelerated then more resources should be used in project. Therefore proper project cost management will help meet up with schedule

Project Risk Management and Project Quality

The bivariate hypotheses between Project Risk Management and Project Quality reveal a remarkable relationship between the two variables. The spearman correlation coefficient reveal that the p-value of 0.000 was less than 0.05 (p=0.000<0.05) which implies that Project Risk Management has a significant relationship with Project Quality. Thus the null hypothesis was rejected and the alternate hypothesis was accepted. The result of the correlation coefficient (r) is 0.711. This thus shows that Project Risk Management accounts for up to 71.1% level of Project Quality. Therefore increasing Project Risk Management will enable the project quality to increase. The third objective of the study which sought to examine if project risk management relates with project quality was achieved. This finding agrees with that of Trisanto and Wardhan (2021) who argues that the greatest challenge to implementing a project risk management lies in changing corporate culture. However, once this is done, and risk management becomes routine, quality project will be achieved and it will add greatly to the probability of project performance.

Project Risk Management and Project Timeliness

The bivariate hypotheses between Project Risk Management and Project Timeliness reveal a remarkable relationship between the two variables. The spearman correlation coefficient reveal that the p-value of 0.000 was less than 0.05 (p=0.000<0.05) which implies that Project Risk Management has a significant relationship with Project Timeliness. Thus the null hypothesis was rejected and the alternate hypothesis was accepted. The result of the correlation coefficient (r) is 0.699. This thus shows that Project Risk Management accounts for up to 69.9% level of Project Timeliness. Therefore increasing Project Risk Management will enable the project timeliness to increase. The fourth objective of the study which sought to examine if project risk management relates with project timeliness was achieved. This finding agrees with that of

PMI, 2004), it was posited that project risk represents uncertain events or situations that potentially can adversely affect a project as planned, usually in terms of cost, schedule, and/or product quality. Also Morris & Sember (2008) posit that prolongation of project can increase risk so it should find perfect balance between time, cost and quality.

6.0 Conclusion and Recommendation

If project management practices are well managed, there is a very high possibility of having a viable project that will guarantee a sound business success. This is associated with the corresponding increase with the cost of production. One of the key principles of project quality management is that quality is planned in, not inspected in. Planning for quality is more cost-effective than inspecting work results and doing the work over, or correcting problems to adhere to quality demands. Time management is often critical for any successful project. The most common cause of bloated project budgets is lack of schedule management. In conclusion, encouraging team collaboration through team cooperation and shared decision making will in a short time improve the success of construction firms. Drawing from the findings and conclusion, the following recommendations are proffered;

i. Management of construction firms should take measures to ensure that project management skills and strategies are adequately considered in the planning and execution of construction projects.
ii. To minimize total project cost on the side of the clients, the project managers should be innovative enough and creative in the way they apportion project cost
iii. Management of construction firm should review project performance with focuses on evaluating projects efficiently and in context, identifying important improvement opportunities and leading project and organizational management practices, these can be put in place to give stakeholders confidence in the control and delivery of their projects without waste
iv. A very good project management framework should take cognizance of cultural, structural, practical and personal elements to eliminate unnecessary elongation of time of project delivery

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