ASSESSMENT OF PROJECT LEADERSHIP ON THE OPERATIONAL PERFORMANCE OF WATER PROJECTS IN NIGERIA

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ABSTRACT

The study assesses project leadership on the operational performance of water projects in Nigeria. The study examines challenges of identified project leadership style in the execution of water project, identifies the leadership styles that improves the performance of water project in Nigeria and the relationship between project leadership, challenges of identified project leadership style and performance of water projects in Nigeria. The study sample were chosen randomly among private, NGO and government water project professionals within selected North-central states of Nigeria. Structured questionnaire was used as primary means of data collection. 180 retrieved questionnaire from 200 distributed questionnaire was analyzed using structural equation model (STEM)-partial least square (PLS). The study shows positive relationship between project leadership and laissez-faire leadership style ($r=0.417$, $p > 0.15$); project leadership and transactional leadership style ($r=0.157$, $p > 0.15$). The study further revealed existence of negative relationship between project leadership and authoritarian leadership style ($r=0.002$, $p < 0.15$); project leadership and democratic leadership style ($r=0.030$, $p < 0.15$); project leadership and transformational leadership style ($r=0.016$, $p < 0.15$) in the operational performance of water projects in Nigeria. Also, challenges of identified project leadership style in association with operational performance of water projects includes; experience of team members, risk minimization, inadequate communication, managing stakeholder's expectations, managing project changes and teamwork, lack of accountability, managing estimated expenses, lack of trust and presence of conflict and tension. Furthermore, the study shows a significant relationship between project leadership, challenges of identified project leadership style and performance of water projects in Nigeria. The study concludes that Laissez-faire leadership style with 18.851 T-Statistics and Transactional leadership style with 7.458 T-Statistics are the project leadership style that improves the operational performance of water projects in Nigeria. The study recommends that proper project leadership structure should be put in place at water project initiation stage to drive project operational performance during and after project execution. Hence, the critical findings of the research contributed to knowledge.

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ABBREVIATIONS, GLOSSARIES AND SYMBOLS

AFDB	Africa Development Bank
CBO	Community Based Organization
ICESCR	International Covenant on Economic, Social and Cultural Right
EU	European Union
FMWR	Federal Ministry of Water Resources
IIED	International Institute for Environment Development
LPC	Least-Preferred Co-worker
NGOs	Non-Government Organizations
OECD	Organization for Economic Co-operation and Development
PMI	Project Management Institute
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
Water AID	International Water Aid
WB	World Bank
UNICEF	United Nations Children Fund
WES	Water and Environmental Sanitation

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

The identification of practices that result in increased competitive advantage has been a pressing matter amongst companies who wish to rapidly respond to market needs (Yang *et al.,* 2011). This has caused a shift from the conventional way of doing business to a project-oriented approach. Organizations are increasingly relying on projects to carry out work and gain competitive advantage (Medina and Medina, 2014; Anantatmula, 2010). Projects were once seen as long term endeavors that consumed immense quantities of time and resources; however, the high complexity and fast paced growth of projects has evolved from being seen as a single undertaking into a broader view driving the creation of different programs and portfolios that follows corporate strategies (Shepherd and Atkinson, 2011). Project success is very important for all organizations to survive in the global market competition. According to Kendrick (2012), a successful project is defined as a project that is implemented on time, within budget, and with the expected quality level defined by the customer(s). However, besides the project triangle of time, budget and quality project success possess the intangible success variables - leader's behaviour, vision, values, trust, quality of relationships, team-work among others are also critical project success factor (Lee-Kelley and Sankey, 2008). Project Management Institute (PMI) (2004) defines a project as a temporary endeavour undertaken to create a unique product, service or results. Without organizations engaging in projects, strategic actions cannot be carried out, thus strategies cannot be realized and a company without realized strategy becomes static which makes organizations unable to adapt to the changing environment. Project is

important for organizations growth and it is a means to deliver as much added value as organization's daily operational task.

Organizations focus on project success to improve the goodwill and capture market attention (Ahsan *et al.,* 2016). Project performance is one of the most critical challenges for all grassroots, national and international development agencies (Bass, 2009). Project Performance is the ability of a project to deliver intended outcomes while meeting the constraints of scope, cost and quality (Srica, 2008). Projects are successful if they are completed on time, within budget, and to performance requirements.

In order to bring the many components of a large project into control there is a large toolkit of techniques, methodologies, and tools. These techniques provide the tools for managing different components involved in a project: planning and scheduling, developing a product, managing financial and capital resources, and monitoring progress. However, the success of a project will always rest on the abilities of a project manager (Faith, 2018). Project manager plays the most critical role towards success of any project (Kendra and Taplin, 2004; Yang *et al.,* 2010).

Since the very start of project management as a profession, planning and execution have been regarded as its key pillars. Chase *et al.* (2001) defines project management as the process of planning, directing, and controlling resources in order to ensure high level of project performance which is normally expressed in terms of time, quality, cost and stakeholders' satisfaction. Project management is a combination of art and science, leadership and management. Project Manager has to "look ahead" by planning project tasks and assigning resources. Project Manager is saddled with the responsibility of preparing a detailed schedule that will be used to control project progress and monitoring project progress in terms of timing, project scope, resources utilization and

project quality. However, evolution being the prime mover, has affected the science of management, where project management in the past has attributed strong focus towards traditional "objective" or "hard" perspective, emerging trends of "subjective" and "soft" factors e.g. leadership, decision power, motivation, group dynamics, interpersonal communication, culture, and ethics have also assumed equal importance (Manazar *et al.,* 2015). It's to no doubt that a project cannot run without proper project management, be it formal or informal. There need to be a structure that enables creativity, innovation, results and holds plans together. Underlying is the assumption that we need some form of order to organize and run a project (Thomas, 2012).

In this sense, project management helps to set a frame, providing structure and order to potential chaos. Without this structure a project leads nowhere; it will most likely fail, if it ever takes off (Thomas, 2012). Project management provides excellent tools to build this structure which is important and necessary for project success (Thomas, 2012). Project leadership is a project management factor that set the right direction for project performance. Leadership is the decisive factor for improving the chances for projects to succeed. Consequently, effective project management needs to have a solid foundation based in project leadership (Thomas, 2012). Leadership has been defined in many ways, often contradictory but somewhat complementary to each other (Jowah, 2016). Leadership is commonly defined as establishing a clear vision, communicating the vision with others and resolving the conflicts between various individuals who are responsible for completing the company's' vision (McColl-Kennedy and Anderson, 2002). Kerzners (2009) posited that leadership is a style of behaviour designed to integrate both the organizational requirements and the personal preference of the leader concerned.

According to Benator & Thumann (2003), leadership is the process of influencing individuals or groups to accomplish organizational goals, presumably understood by the participants. In a sense, leadership comprises of activities undertaken by an individual towards other individuals, meaning therefore, that leadership is about behaving in a particular way to certain people (followers) who themselves know why they are following or accepting one's leadership. Carroll *et al.* (2008) described leadership as a process of social influence in which one person can enlist the aid and support of others in the accomplishment of common task. The presence of a common task, based on a predetermined mind set therefore enables people to be agreeable, sometimes on issues they ordinary would have resisted.

In summary, leadership is the ability to enlist the cooperation of other people and make them willingly want to be followers and work together towards the achievement of common objectives. DeMarco and Lister (2013) claimed that the success of a project depends to a large extent on the element of project management, which cannot be learned on courses. Projects are one-time, complex, unique sequence of activities carried out in a project organization with time, and budget constraints and they implement a definite output. According to Yukl (2002) leadership entails the processes that facilitate others to acknowledge what needs to be accomplished and how it can be done in order to meet stated objectives. In project management context, leadership is the capability of a project manager to influence project team members to complete project works in order to achieve timely targeted goals or projected objectives (Project Management Institute (PMI), 2008).

Water is essential to sustaining life and health (WHO, 2002). According to World Water Council (2006) the right to water is an element that cannot be dissociated from human dignity. The human right to safe drinking water and sanitation gained full political

recognition in 2010 through resolutions by the Human Rights Council and the UN General Assembly. The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses (ICESCR, 2002). Water is part of life supporting systems therefore; its importance is beyond doubt (Mwakila, 2008). In the last two decades, the concerns relating to the management of water resource has been a subject of several global conferences and a number of water organizations (Mwakila, 2008). Ensuring the sustainable provision of equitable access to sufficient good quality water for people, productivity and the environment is a necessity for ending poverty and hunger and achieving all the other ambitious goals being proposed for the post-2015 sustainable development agenda. Water permeates all aspects of life. It is not only humans that require a basic supply of reasonably good quality water in order to survive; water is essential for the survival and productivity of all life and all ecosystems. Humans depend on a wide range of ecosystem services for multiple biological, economic, social and cultural needs. Water is essential not only for basic drinking, cooking, hygiene and ecosystem functioning, but for producing food, energy, and indeed all the material products needed for daily life. Water also plays negative roles through floods, drought, and as a sink for pollutants that cause damage to economic development, health and overall human wellbeing. The natural distribution of water is highly variable geographically and seasonally: some areas have huge amounts of water while others have little or none; and seasons of extremely high rainfall are often followed by long periods with no rain. These patterns of inequity, variability, extremity and unreliability are worsening in many areas because of the impacts of climate change – especially in those areas occupied by the poorest and least resilient communities.

Water projects aspirations includes the major expected outcomes of 100% access to clean, safe drinking water for the populace; supply of adequate irrigation water to meet agricultural goal of self-sufficiency in food production; increased generation of electricity through hydropower; and achievement of zero loss of life and property to perennial floods. Nigeria is the largest country in Africa by population and accounts for 47 percent of West Africa's population. Nigeria, with a land area of approximately 924,000 sq. km, is located within the tropics where its climate is semi-arid in the North gradually becoming humid in the South. The annual rainfall varies from over 4,000mm in the South-East to below 250mm in the extreme North-East and is subject to significant temporal variation. Nigeria is considered to be abundantly blessed with water resources (Federal Republic of Nigeria, 2004). Nigeria had made considerable investment in water projects and related activities in addition to being blessed with abundant water reso1urces, the desire to improve access to this resource was becoming more and more elusive because of the rapidly increasing demand for water. In Nigeria the primary responsibilities for water resources development are vested on government agencies including the Federal Ministry of Water Resources, State Water Agencies and Non-Government agencies such as UNICEF, Water Aid and European Union among others (Chukwu, 2015). Other government agencies not directly concerned with water resources development but carry out water resources developments include the Federal and State Ministries of Agricultures and Environment (Chukwu, 2015). The responsibilities for water resources development in Nigeria are vested on Non-Governmental or donor agencies such as CBO, NGO, UNDP, UNEP, Water AID, EU, World Bank and UNICEF (Emoabino and Alayande, 2007). Were (2014) posited that access to clean and safe water is still beyond the reach of many people in developing countries.

Also, these countries lack funding in their national budget to build and manage the necessary infrastructure to support the water needs of their citizens. The rise in water demand that was outstripping supply is consequent on high population growth rate coupled with increasing urbanization and rising living condition as a result of economic growth (Federal Republic of Nigeria, 2004). There is limited groundwater availability in the areas of the country underlain by crystalline rocks (Federal Republic of Nigeria, 2004). In the more productive sedimentary areas, groundwater exploitation is heavy and uncontrolled (Federal Republic of Nigeria, 2004). In most project in Nigeria, project participants are drawn from different organizations also, from disparate areas of specialization (Kariuki, 2015). In order to achieve high level of project performance, project team members must be fully integrated and focused on project objectives which call for high level of teamwork (Chervier, 2003; Kumaraswamy *et al.,* 2004; Cheng *et al.,* 2006).

In addition, project team members usually undertake non-repetitive tasks to produce the expected output through application of specific skills, knowledge and expertise (Kariuki, 2015). Through leadership, project managers are able to articulate project vision, integrate and coordinate project team members, build team commitment and also enhance team cohesion (Bucia *et al.,* 2010). For water projects to be successful, project organization and project managers must adopt a leadership styles that facilitate project performance. The developmental projects, financed by certain donor agencies, are being launched with the prerequisite of a speculated timeframe. In the developing countries, the developmental and the infrastructural projects are most significantly pursued. Both of these types of Project must be led and manage by vibrant leadership to establish, assure and sustain the staff efficiency (Pettersen, 1991). Leadership is a social influencing process in which the leader seeks active participation of the followers in the

attainment of set goals. Within a project set up, it is recognized that the project manager must provide leadership in order to ensure effective planning, co-ordination and control of project activities through application of appropriate project management knowledge and systems.

However, existing literature acknowledged that an effective project manager must not only be technically qualified but must also possess the requisite soft skills such as leadership and people management skills which is essential in their roles (Muzio *et al.,* 2007). As noted by Muzio *et al.* (2007), 90-95 percent of project issues require soft skills such as leadership, management, teamwork, and communication. Similar sentiments have also been echoed by Hebert (2002) who found that only 10 percent of project manager's role entails application of technical knowledge while 90 percent involves soft skill issues such as leadership and management. This paper therefore, seeks to assess Project Leadership on the operational performance of Water projects in Nigeria.

1.2 Statement of the problem

Water projects aim at strengthening water planning and management, enhancing access to safe drinking water and improving sanitation, increasing water conservation and storage capacity, and enhancing solid and hazardous waste management to prevent contamination of water (OECD, 2008). Inadequate supply of portable water is a major problem of Nigerians as only thirty-one per cent of the populace has access to improved water supply in their homes (Ikpefan and Uchendu, 2017). Leadership affects project culture, project strategy, and project team1 commitment (Shore, 2005).

Many projects continue to fail despite advances in project ma1nagement methodologies, leadership being a major cause (Berg and Karlsen, 2007; E1llemers *et al.,* 2014; Schmid

and Adams, 2008). In Nigeria, water shortage has become more serious mainly in the country because of 1increasing need for irrigation, water supply, energy generation etc. as result of population growth and economic development (FMWR, 2014). Therefore, adequate development and management of water resources became a critical necessity to meet these needs and prevent environmental damage (FMWR, 2014). Leadership factor for the management of water project is an important aspect of sustainable delivery of water resources to both the rural and urban populations (Kakumba, 2010). Water scarcity has been one of the major issues in Nigeria, caused mainly by poor project leadership, poor management, inadequate quantity and quality of water supply, contamination of the available water and a sharp increase in water demand due to relatively high population growth (Okoye, 2015).

Problems of this nature have been increasing in scope, frequency, and severity because the demand for water continues to increase while supplies of renewable water remain fixed (Okoye, 2015). Akpabio (2012) reported that borehole projects in some communities in Nigeria are not functioning due to improper selection of contractors and poor job delivery. Poor financing and management are seen as the main problems of improved water supply projects in Nigeria (Egbinola, 2017). Water project challenges in Nigeria includes absence of financial discipline and accountability for performance, political interference in decision making, inefficient operations, inadequate maintenance, financial losses and unreliable service delivery, no proper planning, low stakeholders consultation, changes in leadership style, governance and water management structures, project leadership practice, rising water supply costs, reduced reliability of water supplies, prolonged droughts, flood and erosion, increasing costs of irrigated food production, poor execution of water projects, poor quality control among other factors (Egbinola, 2017). Robertson and Williams (2006) argue that despite advances in project

management methodologies many projects continue to fail for a number of reasons and the most common being performance. Project Leadership forms the activity based structure of work for water project contractors and stakeholders (Agarwal and Rathod, 2006). Water sector projects demand a systemic project leadership approach that involves leadership style to manage water projects at high level possible towards effective performance. Effectiveness of projects leadership would be the wisest choice to a more satisfying and correct picture of project performance (Agarwal and Rathod, 2006). Therefore, discussing various project leadership factors in context of water project performance suggested the need to explore the aspects of leadership with emphasis on challenges faced by project leadership, leadership styles and the relationship between leadership style and performance of water project.

1.3 Aim of the study

The aim of this study is to assess the influence of project leadership on the operational performance of water projects in Nigeria.

1.4 Objectives of the study

Based on the problem and aim, the specific objectives are derived. They include to:

1. Identify the leadership styles that improves the operational performance of water project in Nigeria.
2. Examine the challenges of identified project leadership style in the execution of water project in Nigeria.
3. Examine the relationship between project leadership style and project performance in the execution of water projects in Nigeria.

1.5 Research Questions

1. What leadership styles best improve the performance of water projects in Nigeria?
2. What are the challenges faced by identified project leadership style in the execution of water projects in Nigeria?
3. What relationship exists between project leadership style and project performance of water projects in Nigeria?

1.6 Research Hypotheses

$H0_1$: Performance of water project is not affected by project leadership styles in Nigeria.

$H0_2$: Performance of water project is not affected by the challenges faced by identified project leadership style in Nigeria.

$H0_3$: Performance of water project does not have a relationship with project leadership style in Nigeria.

1.7 Study area(s)

This study will be carried out in Niger state, Nasarawa state, Kogi state and Federal Capital territory, Abuja within the North-Central geo-political zone of Nigeria.

1.8 Significance of the study

The study sought to assess project leadership on the performance of water projects in Nigeria. In this way, the study findings will contribute to the universe of knowledge regarding challenge factors that affect successful execution of water projects, identify the leadership styles that improves the performance of water projects, examine the relationship that exist between leadership style and performance of water project in Nigeria.

The findings of this study will add knowledge especially to the project management units/departments of organizations/industry which are constantly looking for better ways to complete water projects on time, within costs, improved function-ability, manage complexity, improve quality, improve leadership and minimizes project conflict. This study's finding will be of importance to project stakeholders or organizations to embark on projects in formulating a leadership structure for proper project management. Structured leadership framework will provide useful guidelines to the successful execution of varieties of projects. This study also intends to spawn practical and theoretical further research questions that can become useful study basis for future researchers. Study findings should be considered as a contribution in the debate about how to improve project leadership as a factor for successful water project performance particularly with regards to planning, scheduling, execution, monitoring and control, forecasting and cost management.

1.9 Scope of the study

The study will be carried out in Niger State, Nasarawa State, Kogi State and Federal Capital Territory, Abuja within the northern-central geo-political zone of Nigeria. Hence, the geographical scope is limited to four states in North Central, Nigeria. Water project for this study will include projects centered at; water supply projects (deals with access to clean, safe drinking water for the populace); water irrigation projects (deals with supply of adequate irrigation water to meet agricultural goal of self-sufficiency in food production); water dams and reservoirs projects (deals with increasing generation of electricity through hydropower); water quality, pollution and drainage projects (deals with quality water for use and achievement of zero loss of life and property to perennial floods). Thus, the content of this research is limited to these contexts. The study will

assess the influence of project leadership on the operational performance of water projects in Nigeria.

The emphasis of the research study was on project initiation, planning, execution, monitoring, controlling, commissioning/closure and specifically the challenges faced by identified project leadership style that affect successful execution of water projects in Nigeria, leadership style that improves the performance of water in Nigeria and the relationship that exists between project leadership style and performance of water project in Nigeria. Data gathered for this research were analyzed using the Smart PLS (Version 3.2.8 software) for Partial least square (PLS) – Structural Equation modeling (STEM) to establish relationship between the variables.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents literature reviews to establish Project Leadership influence on the performance of Water projects in Nigeria. This is presented in form of theoretical review, empirical review, research gaps and conceptual framework.

2.2 Theoretical Review

The section reviews theories that are relevant to the topic of the study. The study will be based on leadership, project leadership concept, leadership theories, leadership style and challenges of identified leadership style.

2.2.1 Leadership and project leadership Concept

Project leadership evolved in 21st century to cope with competitive challenges. Project leadership is about knowledge and creation of learning, which occurs during project execution and across projects in organizations. Project leaders are responsible for setting direction, aligning people and tasks, monitor people to ensure project goals are achieved and give power and significance to the project effort (Wechuli and Kavale, 2017). Project leadership deals with the ability to lead in most powerful manner while leading others in project works. Project leadership is the presence and process carried out within an organizational role that assumes responsibility for the needs and rights of those people who choose to follow the leader in accomplishing project results (Cleland and Ireland, 2007).

Project leadership focuses on improving project management practices in order to reduce uncertainty and complexity associated with project pursuits. Cole (1996) defines leadership as a dynamic process in which one individual influences others to contribute to the achievement of the group tasks. Although there is no universal definition, one key aspect is that leadership is a process hence time is needed for a leader to influence subordinates in the desired way. It is recognized that leaders influence followers differently by exhibiting a combination of traits, skills and behaviour which have resulted in different schools of thought or different leadership styles (Dulewicz and Higgs, 2005; Turner and Muller, 2005). Leadership is the capacity to translate vision into reality (Bennis, 2007). Leadership is about the process of creating an environment in which people become empowered. Leadership is the art of influencing others to their maximum performance to accomplish any task, objective or project (Melanie *et al.,* 2009). Leadership is the ability to inspire others to achieve objectives actively which binds the human factor together into a group and motivate towards attaining a goal.

Leadership is the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish shared objectives (Yukl, 2006).

Leadership is a part of management but not all about it. Xiong (2008) posited that leadership is of high importance and an essential factor in proper project management. Also, that leadership is more than simply managing people or projects rather it is the art that affect all project team members' behaviour in order to achieve project set goals and accomplish project task efficiently and effectively. Leadership is a critical and essential component for any project management team (Melanie *et al.,* 2009). Leadership can be seen as the art of influencing others to achieve desired results.

Leaders guide behaviours by setting the vision, direction and the key processes; in other words, leadership has a large influence on the whole project process, including the actions of others. Leadership is the art of mobilizing others to want to struggle for shared aspirations (Kouzes and Posner, 2007).

The prominent definition of leadership pointed that leadership is an influencing relationship among leaders and their collaborators, who intend real change that reflects their shared purpose. Leadership is a process which creates change and uncertainty in an organization involving: developing vision for organization, supporting and communicating with the team of people for achievement of visions, and motivating people for action through fulfillment of basic necessities and empowerment. The leadership fundamental function is to produce change and set direction to cope with change which is not similar to planning or long-term planning but perplexity between both often takes place among people. Leadership is about the process of creating an environment in which people become empowered. Leadership is the process of

influencing the activities of an individual or a group in efforts toward goal achievement in a given situation (Hersey and Blanchard, 1982). Leadership is the ability to inspire others to achieve objectives actively which binds the human factor together into a group and motivate towards goal. Leadership is a process whereby an individual influences a group of individuals to achieve a common goal (Northouse, 2004). It is commonly assumed that everyone in management position is a leader and leaders are not concerned to manage but leadership is performed by the people even though not in management positions. The difference between roles of leadership and management in any organization is that a project manager act as a problem solver by finding the best options to achieve defined project objectives and ensure to perform assigned responsibilities efficiently by the project team. On the contrary, leaders create vision and wisdom, and build up strategic guidelines for long-term problems.

The new approach in project management is strategic project leadership which is focusing to create competitive advantage through projects and providing opportunities for winning in the market place. The project leader provides the functional subject matter expertise and functional ownership and accountability for project results. Project leader's role may often be combined with the project manager role for functionally focused projects. Project leader responsibility include but not limited to; developing the project charter and any other documentation in collaboration with the project team and resource managers for approval by the sponsor(s), Ensures all given objectives and responsibilities of the team are properly documented and approved, leads core team meetings, ensures that the project tasks are outlined and tracked, ensures development of and monitors the project communications plan among others. The project managers must efficiently handle all aspects of project leadership including strategic, operational and human, in order to grow and become a real leader. Project leaders create vision for

project, bring together the resources, and provide motivation and inspiration to project stakeholders in doing the right things to achieve the project objectives. Leaders focus on what needs to be done while managers focus on how things get done, namely 'leaders do the right things and managers do things right. Leaders focus on people and look outward (Riaz *et al.,* 2013). Project leadership is about leading project teams in project works and all project leaders must face any of the three issues related to variety of task, personnel and commitment situations that are complex in project operations due to projects exceptional demands of their temporary nature and unique outcomes (Riaz *et al.,* 2013). Project leadership is a science that deals with timely decision making due to the perspective that decision must be made. Project leaders must be able to facilitate subordinates in making sense of changes and provide guidance and support for ambiguous changes (Riaz *et al.,* 2013).

Project leaders try to improve development process in decision making as required by the art of project leadership. The ability of a project leader is essential for successful management of projects. The duties of project leaders include gathering and distributing information, leading, planning, coordinating, moderating, and controlling the project team (Riaz *et al.,* 2013). Project leadership is becoming important due to increase of project based organizations in industrial importance as well as due to lack of studies within project management literature. It is mandatory for project leadership during planning and execution of project to apply sound project management practices. Project leadership rather than just focusing on time and budget, they consider customer needs on day-to-day basis, future market and competitive advantage to manage project strategically. In project leadership, the essence of leading others focuses on empowering the individuals in order to create the situations and environment for effective and efficient performance. Project leadership is supposed to access needs of project team

and help them for best project performance by meeting the team members frequently and by providing more empowering environment (Riaz *et al.,* 2013). To achieve outstanding results and overcome gigantic obstacles, peoples are transformed and inspired by the visionary project leaders. Project leaders motivate, inspire and coach the right intelligence. Effective project leaders are capable to articulate an inspiring project vision and build an appropriate project spirit or spark aligned with project strategies which create energy, excitement, and commitment among the project team to perform efficiently to ensure project success. Project leadership asserts own wisdom to make difficult decisions by using leadership techniques and give directions to the project team according to the situations.

Project leadership strategically focus on projects for creating competitive advantage as well as winning the market place rather than focusing on getting the job done and the strategic project leadership approach provide step-by step guidelines for projects turning into successful competitive weapons, to project managers and business organizations. Often project leadership is concerned to perform following three common types of responsibilities performed by project leaders (Riaz *et al.,* 2013). First, project leaders need to continuously make decisions according to changing situations and aware of project details. Second, project leaders must identify project priorities and continue to insist that these priorities must be adhered. Finally, project leaders must meet and communicate with key stakeholders to integrate the project into grander scheme of things which benefited to both within the performing organization as well as customer organization. Project leadership must address project spirit properly and must know how to define and cultivate vision for energizing and bringing out the best people. An effective project leader always has the right competencies, style and skills for

influencing at right time which necessitates for an ample need of research on project leadership.

2.2.2 Leadership theories

Over the past decades, there have been six schools of leadership theories namely the trait, behavioural, contingency, visionary, emotional and competency school.

2.2.2.1 Trait Theory of Leadership

Trait theory postulated that leaders share typical personality traits and characteristics that make them different. The trait approach was popular between 1930s to the 1940s. The idea behind the trait approach is that effective leaders share common traits.

The traits theory is the oldest leadership theory that states that leaders are born and not made as instigated by Thomas Caryle in the early 1900s that is leadership is largely innate rather than being developed through learning. This theory posits that leaders are born and not made, meaning certain people are born with the propensity to lead. The proponent of this theory argued that leadership is an inborn, instinctive quality that you either have or don't have. From this theory, it could be deduced that qualities like empathy (as oppose to sympathy), assertiveness, good decision-making, charm, enthusiasm, positive attitude, charisma and so on, makes a good leader. Trait theories are concerned with the personal characteristics and have found different characteristics, which make the differences between leaders and non-leaders (Bass, 1981; Armandi *et al.,* 2003). Leadership based on trait approach suggests that the project manager should possess personal characteristics like confidence which are essential to managing projects successfully. If the project managers possess these, then the project will be successful (Muller and Turner, 2007; 2010). Attempts to identify the traits of effective leaders have focused on three main areas: Abilities (hard management skills),

Personality (self-confidence and emotional variables), Physical appearance (including size and appearance).

In a study, Kirkpatrick & Locke (1991) identified six traits of effective leaders: Drive and ambition, the desire to lead and influence others, Honesty and integrity, Self-confidence, Intelligence and Technical knowledge. Through his work at Henley Management College Turner (1999) identified seven traits of effective project leaders: Problem-solving ability, Results orientation, Energy and initiative, Self-confidence, Perspective, Communication and Negotiating ability.

Gadirajurrett *et al.* (2018) admitted that trait theory of leadership describes the types of behaviour and personality tendencies associated with effective leadership. Trait theory attempts to answer why some people are good leaders and others are not. Key characteristics of trait theory of leadership include Initiative, Tenacity, Energy, Good cognitive skills and capable of using good judgment and decisions, Flexibility, Creativity, Charisma and confidence. According to Xiong (2008), trait theory of leadership deals with leadership perspectives that focuses on individual person leadership capabilities and attempt to determine the personal characteristics that great leaders share. The character traits associated with project leadership are identified as the following:

1. Enterprising Spirit: Enterprising spirit refers to a set of characteristics that reflect a high level of effort. It includes high demand for achievement, constant striving for improvement, ambition, energy, tenacity, and initiative.
2. Loyalty: Leaders who demonstrate loyalty and honesty are willing to admit to mistakes, display key traits that followers look for in their leaders. A leader will also increase their influence when people trust and believe the leader is loyal.

3. Leadership Motivation: Great leaders not only have an enterprising spirit, but they also want to lead. They have a high desire for power, preferring to be in position of leadership rather than that of a follower.
4. Integrity: Integrity is measured by an individual's actions and words. People who do not perform and do not execute what they promised are not considered good leader.
5. Self-confidence: Self-confidence is important for a number of reasons. The leadership role is challenging and setbacks are inevitable. Self-confidence allows a leader to overcome obstacles, make decisions despite uncertainty, and instill confidence in others.
6. Knowledge: Effective leaders have a high level of knowledge about their industries, companies, and technical matters. Leaders must have the intelligence to interpret vast quantities of information. There are other characteristics which have a significant influence on project leadership, including being forward-looking, competent, Inspiring, and intelligent.

2.2.2.2 The Behavioural or Style Theory of Leadership

Behavioural theory was popular from the 1940s – 1950s: This theory developed from the way some leaders behave, whether they are the type that dictate decisions and tasks to people or the type that involves them in the decision making process. Behavioural theory of leadership focuses on how leaders behave and assume that leaders can be made rather than born and successful. A leader's behaviour is the best predictor of his leadership influencing capabilities and as a result, is the best determinant of his or her leadership success (Faith, 2018). Behavioural theory of leadership focuses on the study of specific behaviours of leaders (Gadirajurrett, 2018). Behavioural or Style Theory of Leadership assumed that effective leaders adopt certain styles or behaviours. It assumes

in effect that effective leaders can be made. Most of the best-known theories characterize managers or leaders against one or two parameters (Adair, 1983; Blake and Mouton, 1978; Hershey and Blanchard, 1988; Slevin, 1989; Tannenbaum and Schmidt, 1958). The parameters include: Concern for people or relationships, concern for production, use of authority, involvement of the team in decision-making (formulating decisions), involvement of the team in decision-taking (choosing options), flexibility versus the application of rules. Turner (1999) identifies four styles of project manager based on Team Decision-making, Team Decision-taking, and Flexibility parameters.

According to Pretorius *et al.* (2018), behavioural leadership theory approach is believed that leaders are responsible for shaping an environment that empowers followers to realize specific tasks. In other words, leaders can manage their subordinates' behaviour through staging antecedents and consequences of behaviours. There is a dynamic, mutual interaction between the leader, the follower and the environment. Environmental factors include technology, organizational structure, task type and the size of organization.

Xiong (2008) opined that behavioural theories of leadership do not focus on inborn traits or capabilities rather, the focus is on what leaders actually do. Three general categories of leadership behaviours are mentioned frequently in literature: behaviours related to task performance; behaviours related to group maintenance and behaviours related to employee participation in decision-making (Xiong, 2008).

1. Task Performance Behaviours: Task performance behaviours are the leader's efforts to ensure that the teams or organizations reach their goals. Those behaviours include a focus on work efficiency, quality and accuracy, quantity of output and adherence to regulations.

2. Group Maintenance Behaviours: These actions are taken to ensure the satisfaction of group members, develop and maintain harmonious work relationships and preserve the social stability of the group, focusing on people's feelings and comfort, appreciation and stress reduction.
3. Participation in Decision-Making: This behaviour appears during the process of making decisions, in which leaders can range from autocratic to democratic.

The essence of leadership based on behaviour or style is that different project require different leadership styles (Muller and Turner, 2007; 2010). Due to this, project managers should use those attributes up to the extent which are required for the given project. An example for this can be empowerment (Muller and Turner, 2007; 2010).

Based on this, Eric *(*2005) reported that Kurt Lewin argued that there are three types of leaders based on leadership behavioural: Autocratic leaders, Democratic leaders and Laissez-faire leaders (Jowah, 2016). In the authoritative leadership style the project leader expects his word to be law and employees do not have room to present their suggestion for consideration. Autocratic leadership is a form of leadership in which the leader makes decisions on his or her own and then announces those decisions to the group. Decisions are made at the highest level of an organization and handed down through established protocols to be implemented across the appropriate levels by the employees through existing organizational procedures. In this type of leadership motivation among employees is very minimal or non-existent and the techniques that are used to provide motivation apply a combination of threats and promises such as benefits and retributions (Tannenbaum and Schmidt, 1958). Democratic leadership style also referred as participative style strives to involve employee in organizational management and decision making. Democratic leadership is a form of leadership in which the leader solicits input from subordinates. In this type of leadership, a manger

understands that employee is more informed in some instances than their leaders and can therefore provide valuable insight that can enable informed decisions at the management level. It makes an employee feel important and appreciated at work. By involving employees in organization management and decision making serves to impart this skill in their routine job requirements besides grooming them for their next career levels within the organization (Tannenbaum and Schmidt, 1958). However, this style is only effective in an organization where employees are skilled and very knowledgeable in their areas of specialty since they are less likely to make work related mistakes that might be costly to the organization.

The Leissez-Faire leadership style describes lack of interest and rightly so because in this case a manager is almost detached away from the intricacies of organization and employee management. Much leeway is given to employee to use their best judgment and achieve individual or teamwork requirements, meet targets and work deadlines (Hofstede, 1991). The manager hardly ever supervise employee or follow up on their progress but relies on internal organizational systems. Behavioural or style leadership approach should be adopted where the employee is qualified and competent in discharging their duties without direction and are mature to achieve self-motivation. Hackman and Johnson (2004) noted that leadership styles can be pared down to two primary models of communication: one model compares authoritarian, democratic, and laissez-faire styles of leadership communication; a second model contrasts task and interpersonal leadership communication. Behavioural or style theory of leadership follows the task-versus-relationship categorization creating a grid of encompassing key styles of leadership (Northouse, 2004). Thus, there is a range of leader's behaviour that is highly concerned with results with a low concern for people.

The primary objective of behavioural approach is to emphasize what leaders actually do in the job rather than just looking on the traits of the leaders. Behavioural theory of leadership in contrast, thus provide a useful tool to analyze what leaders actually do and how leaders may be trained to be a more effective.

2.2.2.3 The Contingency Theory of Leadership

The contingency theory of leadership was popular in the 1960s and 1970s (Fiedler, 1967; House, 1971; Krech, *et al.*, 1962; Robbins, 1997). Contingency theories arise from the belief that leadership style is contingent upon situations that is as a function of the circumstances involved.

Contingency theory tries to predict which leadership style is best according to the cases and circumstances involved. This leads to the concept of situational leadership where circumstances determine how the leader seeks to influence the followers (Jowah, 2016). Contingency theories suggest that what makes an effective leader would depend on the situation. Hersey and Blanchard (1993) developed this approach in 1969 and it focuses on the principle that different situations demand different kinds of leadership. Leadership comprises both a directive and a supportive dimension, and each has to be applied in a particular situation. The core of the situational approach requires that leaders match their style (directive or supportive) to the competence and commitment of the followers (Pretorius *et al.,* 2018).

According to the approach of Leadership based on contingency, it is vital to identify the characteristics of the project and the project leader should adapt to this (Muller and Turner, 2007; 2010). In contingency theory of leadership, leadership tend to follow similar pattern; assess the characteristics of the leader, evaluate the situation in terms of key contingency variables and seek a match between the leader and the situation.

Contingency theory has proven popular is path-goal theory (House, 1971). The idea is that leader must help the team find the path to their goals and help them in that process. Path-goal theory identifies four leadership behaviours: directive leaders, supportive leaders, participative leaders and achievement-oriented leaders.

These must then be matched to environmental and subordinate contingency factors:

- Environmental factors: Task structure, formal authority system and work group.
- Subordinate factors: Locus of control, experience and perceived ability.

Fiedler (1967) recommends different leadership styles, depending on the favorability of the leadership situation. He identified three major variables to determine this favorability, which then affects the leader's role and influencing ability:

- Leader-member relations: degree to which the leader is trusted and liked by members
- Task structure: degree of clearness of a task and its instructions
- Position power: leader power by virtue of organizational position.

Fiedler (1967) distinguishes between task-oriented and participative approaches to leadership. He uses a least-preferred co-worker (LPC) score to assign team members to leaders depending on the leadership situation. In very favorable situations and very unfavorable situations, he assigns task-oriented leaders (having a low LPC score) to achieve effectiveness through a directive and controlling style.

In moderately favorable situations, he assigns participative leaders (high LPC score) for high effectiveness through interpersonal relationship orientation. In the project management field, Frame (1987) suggested how different four leadership styles; laissez-faire, democratic, autocratic and bureaucratic are appropriate at different stages of the project life cycle and with different team structures. The contingency theories of leadership assume the effectiveness of leader's behaviour based on task or relationship

orientation of the leader depends on the context and situational factors such as task and organizational conditions (House, 1971; Katz, 1977). Though the contingency theory of leadership provides a richer model for predicting leadership effectiveness however, it does not completely explain all leadership situations.

2.2.2.4 The Visionary or Charismatic Theory of Leadership

The visionary school was popular during the 1980s and 1990s; it arose from the study of successful business leaders leading their organizations through change. Within visionary school, there is transformational and transactional leadership styles which were first articulated by Burns (1978) and later developed further by Bass (1985; 1990). Leadership based on charisma or vision is a complex leadership style; it is composed of two categories. The first one emphasizes the importance of personal characteristics and leading by examples. The second one emphasizes the importance of realizing the plans via bonuses and reaction to deviations (Muller and Turner, 2007; 2010). Bass (1990) identifies two types of visionary leadership, transactional and transformational:

1. Transactional leadership: Emphasizes contingent rewards, rewarding followers for meeting performance targets, manages by exception, taking action when tasks are not going as planned.
2. Transformational leadership: Exhibits charisma, developing a vision, engendering pride, respect and trust, provides inspiration, motivating by creating high expectations and modeling appropriate behaviours, gives consideration to the individual, paying personal attention to followers and giving them respect and respecting their personality, provides intellectual stimulation, challenging followers with new ideas and approaches.

a. Transformational leadership

Transformational leaders inspire followers to achieve objectives by raising their level of awareness, motivating them as well as addressing and modifying their values and self-esteem. In transformational leadership style there are four I's namely Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individualized Consideration (Bass and Avolio, 1994).

- Idealized Influence refers to the ability of the leader to exert influence by acting as a role model to followers.
- Inspirational Motivation refers to the ability of the leader to develop and articulate a compelling future vision as well as creating an image of success.
- Intellectual Stimulation arouses intelligence, rationality and focused problem solving by questioning assumptions, seeking differing perspectives and encouraging innovation and creativity.
- Individualized Consideration emphasizes on the need for leaders to treat followers as individuals and not just as members of a group.

Avolio *et al.* (2009) define transformational leadership as a leader behaviour that transform and inspire followers to perform beyond expectations while transcending self-interest for the good of the organization. This type of leadership includes the four aspects of idealized influence, inspirational motivation, intellectual motivation, and individualized attention. An example of transformational leadership in an organization would be a manager who tries to change his/her company's corporate values to reflect a more humane standard of fairness and justice. While doing this, both manager and subordinates may develop higher and stronger moral values. This leadership type is primarily people-focused.

(b) Transactional leadership

Transactional leadership style emphasizes on contingency reward and management by exception. Contingency reward stresses on the leader agreeing with followers on the goals, responsibilities, operating structure and reward to be received upon achievement of set performance targets (Bass and Avolio, 1994). Management by exception is categorized into two namely Management by Exception-Active and Management by Exception-Passive.

Management by Exception-Active arises in cases where the leader actively monitors progress and initiates corrective action before things go wrong. In case of Management by Exception-Passive, the leader waits passively and only takes action when there are problems (Bass, 1985). The bulk of the leadership models can be categorized under transactional leadership, which centers on the interactions that occurs between leaders and subordinates. It occurs when managers offer promotions or financial incentives to employees who exceed their goals. This leadership type is largely task-focused. In a project management context, Keegan and Den-Hartog (2004) predict that a project manager's leadership style needs to be more transformational than transactional, but found no significant link. What they did find is that although there is a significant correlation between the manager's leadership style and employees' commitment, motivation, and stress for line managers, there is no such correlation for project managers. As noted by Felfe *et al.* (2004) transformational and transactional leadership styles exist in a continuum and are not independent of each other since a leader can combine certain aspects based on the circumstances.

2.2.2.5 The Emotional Intelligence Theory of Leadership

The emotional intelligence school has been popular since the late 1990s, and says the leader's emotional intelligence has a greater impact on his or her success as a leader—and the performance of his or her team—than does the leader's intellectual capability (Goleman *et al.,* 2002). Goleman *et al.* (2002) say that the first four emotional leadership styles (Visionary, Democratic, Coaching, Pacesetting) will foster resonance in the team, and usually lead to better performance in appropriate circumstances. The last two styles (Affiliative and Commanding) can foster dissonance, although appropriate in the correct circumstance-these last two styles need to be used with care.

They identified four dimensions of emotional intelligence (Self-awareness, Self-management, Social awareness and Relationship management) and form six leadership styles: Visionary, Democratic, Coaching, Pacesetting, Affiliative and Commanding. Leadership based on emotional intelligence assumes that the emotional intelligence ensures project success than leadership style and based on that the project leader should concentrate on applying the emotional intelligence during the management of projects (Muller and Turner, 2007; 2010). Goleman et al. (2002) posited as well as other authors have shown that there is a clear correlation between the emotional intelligence and leadership style of managers and the performance of their organizations.

2.2.2.6 The Competency Theory of Leadership

Since the late 1990s, the emphasis has been to identify the competencies of effective leaders. This may appear to be a return to the trait approach. However, competencies can be learned, so leaders can be made, not just born. Further, different combinations of competencies can lead to different styles of leadership appropriate in different circumstances therefore, producing transactional leaders in situations of low complexity and transformational leaders in situations of high complexities. In addition, competencies can be technical or intellectual in nature, emphasizing Barnard's cognitive

roles, or domains of emotional intelligence. Dulewicz and Higgs (2003) give an overview of the competency theory of leadership; Leadership based on competency assumes that project leaders should possess certain competencies (emotional competencies) in order to achieve project success (Muller and Turner, 2007; 2010).

2.2.3 Leadership Style

Hersey and Blanchard (1982) defines leadership style as a consistent pattern of behaviour that a leader uses when working with and through people. Leadership style is a behaviourally oriented approach to understand leadership. The leadership style approach focuses on behaviour and explains how leaders combine task and relationship behaviours to influence subordinates in their efforts to reach a goal. Project leadership style includes;

1. **Autocratic Leadership:** Autocratic leadership, also known as authoritarian leadership, is a style characterized by individual control over all decisions and little input from group members. Autocratic leader makes decisions based on ideas and judgments without input from other team members. This style benefits employees who require close supervision. The benefits of this style depend upon factors such as situations, amount of risk, type of task and characteristics of team members (Gadirajurrett *et al.*, (2018). Autocratic leadership style is centered on the boss to servant approach. In autocratic leadership style, the leader holds all authority and responsibility. In autocratic leadership style, leaders make decisions on their own without consulting subordinates. They reach decisions, communicate them to subordinates and expect prompt implementation. Autocratic leaders working environment does normally have little or no flexibility. In this kind of leadership, guidelines, procedures and policies are all

natural additions of an autocratic leader. Statistically, there are very few situations that can actually support autocratic leadership.

2. **Democratic Leadership:** Democratic Leadership, also known as Participative or shared leadership is a style where inputs from team members and peers are considered and valued. In this leadership style, subordinates are involved in making decisions. Unlike autocratic, democratic leadership is centered on subordinates' contributions.

   The democratic leader holds final responsibility but he or she is known to delegate authority to other people, who determine work projects. The most unique feature of this leadership is that communication is active upward and downward. With respect to statistics, democratic leadership is one of the most preferred leadership, and it entails the following: fairness, competence, creativity, courage, intelligence and honesty. Everyone in the team are encouraged in exchanging ideas. Democratic Leader boosts the team to share ideas in decision making process. However, the responsibility of final decision-making is with the Leader. Democratic Leadership style is one of the most effective types which lead to high productivity (Gadirajurrett *et al.,* 2018). Democratic Leaders invites ideas from the team for decision-making process, to which decision goes with majority. Democratic Leadership style will usually result in a good decision, but may leave the minority voters disgruntled. It is important that the project leader reach out to the minority voters to ensure that though they disagree with the decision, they commit to the outcome. A mature project leader will never hold a vote without first consulting with the primary stakeholders in the vote. This is necessary to ensure that the vote properly addresses the issue at hand, and that

all parties including the project leaders know what is at stake (Hodgkinson, 2009).

3. **Laissez-faire Leadership:** Laissez-faire leadership also known as delegated leadership; is a style in which leaders hands-off and allow group members to make the decisions. Laissez-faire is a French phrase meaning "leave it alone". This style is a hands off policy and the team is entirely self-led regarding the decision making process. Except in a very mature self-motivated team, this may lead to aimlessness and lack of success. Less mature team members may view it as a lack of interest or involvement by the Project leader (Hodgkinson, 2009). Laissez-faire leader lacks direct supervision of employees and fails to provide regular feedback to those under their supervision.

   Highly experienced and trained employees who require little supervision falls under these leadership style. However, Researchers have found that Laissez-faire leadership is generally the leadership style that leads to the lowest productivity among team members (Gadirajurrett *et al.*, 2018). Laissez-faire leadership gives authority to employees. According to azcentral, departments' subordinates are allowed to work as they choose with minimal or no interference. According to research by Hodgkinson (2009), Laissez-faire leadership style has been consistently found to be the least satisfying and least effective management style. Laissez-faire leadership has a hands-off policy and the team is entirely self-directed in their activities. As with a laissez-faire decision making style, this style is only appropriate for very mature self-motivated teams. For any other team, it is a formula for failure and a sign of laziness or over-tasking project leaders. Team members will generally interpret this style as a lack of interest, and the project will suffer accordingly.

4. **Transactional Leadership:** Transactional Leadership also known as managerial leadership; Focuses on supervision, group performance and organization. Transactional leadership style focuses on a specific task and based on the performance results. Leaders provide awards and punishments to motivate team members. These leaders are good at setting expectations and standards that maximize the efficiency and productivity of an organization. Research has found that transactional leadership tends to be most effective in situations where problems are simple and clearly defined (Gadirajurrett *et al.,* 2018). Transactional Leadership style is a leadership style that maintains or continues the status quo. It is also the leadership style that involves an exchange process, whereby followers get immediate, tangible rewards for carrying out the leader's orders. Transactional leadership can sound rather basic with its focuses on exchange.

   Transactional leadership can include: Being clear (by clarifying what is expected of followers' performance), focusing on expectations (explaining how to meet such expectations), giving feedbacks and allocating rewards that are contingent on meeting objectives are all important transactional leadership skills.

5. **Transformational Leadership:** The transformational leadership style depends on high levels of communication from management to meet goals. Leaders motivate employees**,** enhance**s** productivity and efficiency through communication and high visibility. Transformational leadership enhances the motivation, morale and performance of followers through a variety of mechanisms like, being a role model to followers to inspire them, understanding strengths and weaknesses of followers. When transformational and transactional styles are compared, Researchers believes the transformational approach creates

significant change in the life of people and organizations (Gadirajurrett *et al.,* 2018). Unlike other leadership styles, transformational leadership is all about initiating change in organizations, groups, oneself and others. Transformational leaders motivate others to do more than they originally intended and often even more than they thought possible. They set more challenging expectations and typically achieve higher performance. Statistically, transformational leadership tends to have more committed and satisfied followers. This is mainly because transformational leaders empower followers (Hodgkinson, 2009). Transformational leadership style inspires with a shared vision of the future similar to charismatic leadership style but in the case of transformational leadership, it is the leaders' vision rather than personality which provides the motivational aspect. The great value of a transformational leadership style is the level of commitment and enthusiasm it elicits from the team.

Motivated Teams need very little supervision and are likely to be very proactive and innovative. Even if the Project leader leaves the project, a transformational leader will leave a legacy of enthusiasm to the team (Hodgkinson, 2009).

6. **Charismatic Leadership:** Charismatic leader leads a team primarily through magnetism of personality. Charismatic leaders inspire a high level of enthusiasm and success on short projects, but charismatic leader style have focus on project leader and not the project target. Focus should be on the project goals and team development not on the charismatic leader (Hodgkinson, 2009). Furthermore, if the teamwork is based on the charismatic leader, the project may fail if the project leader changes. There is great danger that a charismatic leadership style may devolve into an autocratic leadership so a charismatic project leader must always be on the guard not to indulge personal ego in this way. However, a

charismatic leadership style can be very effective if combined with preferred styles, such as democratic, consensus, coaching or empowering (Hodgkinson, 2009). In charismatic leadership style, the charismatic leader manifests his or her revolutionary power. Charisma does not mean sheer behavioural change, it actually involves a transformation of followers' values and beliefs. Therefore, this distinguishes a charismatic leader from a simply populist leader who may affect attitudes towards specific subjects, but who is not prepared as the charismatic leader to transform the underlying normative orientation that structures specific attitudes.

2.2.4 Challenges of Leadership.

The main work of a project leader is to ensure that difficult projects are handled and positive results are obtained. However, there are some challenges that affect the work of a project leader, both internal and external (IBQM, 2015).

A study by Gallup cited in Wilson (2018) shows that only 2.5% of companies successfully complete 100% of their projects. Project leaders face issues and roadblocks on project performance on daily basis (Wilson, 2018). Heston (2019) posited that project leaders are always expected to deal with tasks, resources, time and budget, as well as manage projects. Identified challenges project leaders encounter regularly are as follows;

1. **Experience of team members**: Project's success is dependent on the people that executed the project. Project manager faces challenges of inexperienced team members or team members who lack the skills to handle the tasks at hand. Experience of team member challenge will slow down the progress of project work and in some cases will lead to the termination of the project, unsuccessfully.

2. **Risk minimization:** Wilson (2018) submitted that poor risk management is one of the most common project management challenges. Also added, that at any level, project managers and teams need be on a constant lookout for potential risks and plan to avoid or mitigate the impact of these risks, altogether. Project leaders are expected to ensure that project risks are properly planned for and put to minimum or lowest effective level. This is hard task especially when internal factors are affecting project work. Wilson (2018) noted that risk level can be reduce by gathering enough information on the project, building a circle of trust amongst the team members and knowing which part of the project is not feasible and effect changes. According to Wikipedia, risk management is the identification, assessment, and prioritization of risks followed by coordinated application of resources to minimize, monitor and control the events. Oftentimes, projects don't go as planned therefore, risk management is one of the major project management challenges that project managers have to deal with.

   Project leaders have the ability to influence control measure mechanism towards risks that might creep up in a project. These risks can be an uncertainty in the financial market, hidden flaws in the project plan or unknown factors that can impact the success of a project. Kashyap (2019) submitted that it's impossible to predict every potential risk but with strategic planning and collecting information beforehand, project leaders can anticipate which part of the project is likely to fail and with that information, he can develop control measures that can help them to deal with the risks accordingly.

3. **Inadequate communication:** Wilson (2018) posited that it is no secret that miscommunication or lack of communication can have a dire impact on any

project and team collaboration. When it comes to project management specifically, communication needs to be timely and transparent. Be it a one-on-one discussion, daily scrum or weekly sprints, the team needs to be at par with exactly where the project lies and everything that comes with it including issues, prevailing risks and customer requirements. Project leaders will likely face communication issues between project team members. Leadership calls for clear communication about goals, responsibilities, performance, expectations, and feedback. The leader is also the communication link to the larger project organization. Transparent communication in all directions enhances credibility, trust, efficiency. Differences are bound to appear—but dialogue and discussions should be a basis for solutions. The leader must have the ability to effectively negotiate and persuade when necessary to ensure the success of the team. Team members have four major communication needs: responsibility parameters; coordinating with each other and the leader; awareness of project status; and, synchronization of decisions by various stakeholders (Verzuh, 1999). Communication is therefore vital, not only in ensuring team progress, functionality and cohesion, but also in effective leadership.

Several studies have identified communication as an important factor in project execution as it facilitates sharing of project information among project team members. In addition, communication facilitates teamwork, motivation and monitoring of project activities. However, as pointed out by several authors (Turner and Muller, 2004; Ceric, 2011) poor communication is one of the leading project risks which can contribute to poor project performance. The leader needs to mediate those early meetings to ensure that project team members are effectively communicating during project execution. Expectations and objectives need to be clearly, concisely, and correctly communicated

to all project members with the backing of the leader. Communication skill is one of the project leader's greatest assets. Even when leaders are giving instructions, asking questions or seeking information, there's always a challenge to provide clear and open communication (Kashyap, 2019). Project managers emphasize a lot on effective communication because, most often, successful communication translates into successful projects. Communication flows for project team members develop a channel for information flow to project team members.

4. **Managing stakeholder's expectation:** Taylor (2014) noted that managing stakeholder expectations is by far the biggest challenge facing project managers. Taylor (2014) also stated that quite often, project sponsors expectations do not match reality, and it is eminent to modify these expectations to meet the constraints of the project's scope, budget, and schedule. Not all stakeholders come to the table with the same background experience or even the same desired outcome as everyone else. Project leaders are expected to learn the history and desired outcome of all the decision makers on the project and then plan or adjust the plan accordingly.

Project leaders are expected to know what project team members expect of their leaders and at the same time, project team members should know what project leader expect of them. Once you know each other's expectations, then it will be easier to reach the desired goals. Availability of resources, deadlines, training and payments are some of the critical issues that should be discussed on regular basis between project leaders and the project team members to ensure that the project end up successfully.

5. **Managing project change:** Flint and Hearn (2016) submitted that change is constant and unless carefully managed, it can be detrimental to teamwork and project success. Change starts and ends with communication. Whenever you

think you've communicated enough, you need to communicate some more – and it needs to be interactive: listen, talk and involve. Project Leaders need to be aware of the project change curves or the four predictable stages of change: denial/resistance, emotional, hopeful, commitment. Each stage is needed, but how long project team member's stays at each stage can be managed and kept to a minimum.

6. **Providing clarity on project direction:** Managing a team that is widely spread out is one big challenge for project leaders (Kashyap, 2019). Flint and Hearn (2016) submitted that for project team members to walk in the same direction, team members needs to know where the project is going or what it is contributing to (vision) and why (purpose). Also, added that project clarity provides a framework and reasons for project team members to work together. Project visions and purposes are important for project success. Project clarity keeps project teams on the same direction towards success. Each team member will know exactly what's going on, what they need to do, and what each of them is working towards. Flint and Hearn, (2016) stated that Project direction includes:

    1. Bring all team and project stakeholder's conversations about a specific task on a single page to avoid digging through long email threads.
    2. Project leaders and team members stay on top of project schedule and know what's coming up with calendar views.
    3. Project leader knowing who works on what part of the project and getting notified of Project task movement from one stage to another and keeping project team members together.

7. **Managing unrealistic deadlines:** Project managers struggle with unrealistic project deadlines that project client and stakeholders have of them. A research

according to Liquid Planner as cited in Wilson (2018) indicated that meeting deadlines was the second largest issue at 45.8% faced by project leaders in manufacturing sector, making it one of the more common project management challenges faced by project teams today. It is normal to have delays in achieving different milestones in a project; however, the idea is to prevent the project from going off track by monitoring the project from the very beginning. Most project timelines do eventually slip due to the unrealistic 'initial deadlines' accorded project task. As we live in a world, where competition is getting aggressive and targets are set either unrealistic or unachievable rather than driven by calculated business requirements. From then, what begins is a desperate attempt where the team tries to fit the requirements in the already drawn boundaries. It is also important to keep stakeholders in sync in case sudden customer requests for changes are posing threats to the timely completion of a project.

8. **Managing scope creep:** Kashyap (2019) posited that scope creep arises naturally and it becomes a challenge – sneaking up suddenly and hitting project activities. Project takes a different shape because the client wants more functionality for the same price and deadline. Many project stakeholders don't know how to define their project needs, this put project leaders and team members in a difficult spot as unpredictable or new changes can often lead to the project failure. Kashyap (2019) submitted that project leader knows that avoiding project scope creep will definitely increase the chances of delivering the project on time and budget therefore, project scope creep possesses challenges to project leader.

9. **Insufficient team skills:** Kashyap (2019) posited that a team is as good as its team member's capabilities. If project leaders are not smart or are not trained enough to perform assigned tasks, it can put project development in a risky spot. But most of the times, the project teams are assigned on their availability, not for their expertise for many projects. If project leaders are not skilled or trained enough to meet the challenges and performance of assigned task, it can put the development of the project in a risky spot. Some projects are challenging or demand a certain level of knowledge and expertise, so it is up to project leaders to decide whether team members need to be trained or to add someone with the required skills. Besides this, qualities like lack of accountability, blaming each other, and finger-pointing can also halt a project. Kashyap (2019) submitted that project leaders need to document the core set of skills needed to accomplish the workload and analyze the strengths and weaknesses of the team members. If required, train them to enhance their knowledge and end the skill gaps.

10. **Poorly defined goals and objectives:** Kashyap (2019) posited that poorly defined goals or goals without objectives push a project into danger and that becomes a major challenge. A study by PMI cited in Wilson (2018) shows that 37% of project failures are due to a lack of clearly defined objectives and milestones to measure progress. An important step in a project is to define goals and objective. Project Leaders and team members might not know what exactly to expect from the project, if the goals and objectives are not clearly defined. When no one is aware of the what, why and when of the project, what will follow is a lot of confusion and performance error. Kashyap (2019) stated that starting a project without clear objectives, a specific direction and a prepared

plan; it's like going on a road trip with no idea of where you're going and how to get there which will lead to wastage of time resources and effort. The process of setting both short-term and long-term goals for a project needs to be efficient and well thought of (Wilson, 2018). The absence of unclearly defined goals does not only pave way for unnecessary confusion and miscommunication but also may lead to missing important milestones. Milestones help measure team and project progress. Without having a properly defined set of goals in hand, a project leader is bound to lose track of where the project is going in terms of cost and time.

11. **Managing teamwork:** Kashyap (2019) posited that teamwork is not really teamwork unless the team actually works. A team consists of multiple members; each having a different personality, managing and catering to their needs can be a daunting task at times. With so many people working on a project together, there can be disagreements and differences in a team that can have a negative impact on the project and work environment. Kashyap (2019) added that issues and incongruities amongst team members is often a challenge for project leaders to deal with because project leaders have to constantly look for ways to take everyone in a team together for the betterment of the project. Kashyap (2019) submitted that the best way to eliminate any issues or negativity in a team is to create a positive work environment and build trust in the workplace to break down barriers and establish interpersonal relationships. Flint and Hearn (2016) submitted that managing a team that is widely spread out is one big challenge for project managers. Keeping your team on the same page will make things happen interactively. Each team member will know exactly what's going on, what they need to do, and what each of them is working towards.

12. **Lack of accountability:** Stakeholders want accountability but a few teams have it. A project manager has to make sure that the team is accountable throughout their daily workloads. Accountability is visible in the form of blame game when things go wrong but is rarely in the picture when the things are right (Kashyap, 2019). Kashyap (2019) submitted that to embrace accountability, project leaders are to make sure accountability begins from the start of a project to build it into project workflow. Bennett (2000) posited that failure to continuously monitor and communicate project milestones in real time, and budget performance, dilutes project accountability and responsibility.

13. **Managing estimated expenses:** One of the most common project leader's challenges in managing project is the failure to estimate expenses correctly. Study by Liquid lanner as cited in Wilson (2018) presented that managing project costs were the principal problem faced by manufacturing project managers in 2017. Cost misestimating can lead to staggering complications in any project development lifecycle. A project revolves around numerous entities, each incurring a significant amount of expense, such as equipment, inventories, human resources, consultation, and other unplanned overhead costs. It is no wonder that according to a study by Deloitte cited in Wilson (2018), 22% of professionals consider budgeting issues as a leading roadblock to project implementations.

14. **Lack of trust:** Trust is crucial to teamwork, and it starts with people knowing each other. Project team members absolutely need to be acquainted, both professionally and personally, particularly in projects where tensions will run high at some point (Flint and Hearn, 2016). Otherwise members will not

understand each other, they will not want to engage because they have not made that human connection and they will not fully trust each other.

15. **Presence of conflict and tension**: Conflict or differences of opinion can be healthy and, if carefully managed by the project leader, can trigger useful debates (Flint and Hearn, 2016). It can make people think differently, expanding knowledge and insight; innovation can happen and results flourish. Different opinions are not a bad thing. It is how we handle the conflict that makes a difference. Bennett (2000) submitted that most projects are interrelated, sharing people, equipment, resources and deliverables. These dependencies mean that a single project delay has a significant ripple effect on related projects, disrupting schedules, causing resource conflicts and even triggering expensive contingencies, in order to minimize risks. Bennett (2000) also added that companies rarely have sufficient resources to staff all projects concurrently. As such, projects compete against each other for resources, and people are often assigned to several projects at the same time. Those with special expertise of scarce skills may be in high demand, causing bottlenecks and tension.

16. **Improper flow of information:** Flint and Hearn (2016) posited that knowledge is power when it's shared. Project team members all bring a unique set of skills, knowledge, experience and wisdom to the table. Effective project teams fearlessly share regularly and generously for the benefit of everyone and for the benefit of the project's success.

    This makes the capability of the whole team grow and gives the team more power. Bennett (2000) submitted that many executives are unable to obtain the right information at the right time to effectively understand the present

position of the business in order to communicate unwelcome surprises and/or communicate potential opportunities before competition.

17. **Low team commitment and engagement:** Team engagement is crucial to project success (Flint and Hearn, 2016). If engaged, team members on a given project will be interested in what they do, committed to the project mission and willing to go the extra mile. They are there in body as well as mentally and emotionally. The key to engagement is involvement – by involving others you make it impossible to stay detached.

18. **Lack of transparency:** Flint and Hearn (2016) posited that without transparency, trust will suffer – both within the project team and with the end client. Transparency is becoming the presumed norm in project and programme management and expectations are growing. It starts at the top: the more senior you are; the more responsibility you have to be a role model for transparency. Employees will follow the leader's behaviours, good or bad. When this is done well it can have a positive cascade effect throughout the project life-cycle.

19. **Long-term thinking:** (Flint & Hearn, 2016) Project managers have to get beyond day-to-day urgencies, see the big picture and consider how all parts of the project fit together. For a project team, this means being able to think beyond your own area, about how you fit into the wider change programme or project and how you impact the end client's experience. This is about business sustainability and long-term success. Everyone is busy, but just being busy is not enough. Long-term project success requires long-term thinking.

20. **Inspiring Project Team**: A project team has a brand, an image and a reputation created by the actions and behaviour of the project team (Flint and Hearn, 2016).

A large part of the perception is driven by how well the team delivers on expectations and promises made. A project leader need to make sure that everyone understands and takes responsibility for their roles in creating the perception of the team. This includes both what is delivered on the project and how it is delivered.

2.2.5 Water Project characteristics

In project management, it is recognized that projects have different characteristics. Project characteristic can be considered as project demographics such as size, complexity, industrial sector, application area and contract type (Crawford *et al.*, 2006). Based on the characteristics, several studies (Youker, 1999; Crawford *et al.*, 2006) have developed project categorization systems. Despite projects having different characteristics, an assumption in some project management literature is that all projects are fundamentally similar and hence can be governed and managed in the same way (Shenhar, 2001). Stoyanova (2017) submitted that projects in the water sector can be defined as public, investment or public projects, but often they are classified as infrastructural project because they are oriented to natural resource of public interest and by their implementation the public objectives are achieved. This type of project investment requires considerable resources and time scale for implementation. The effects of their implementation are needed for development of water sector and they are not only economic but also have social and environmental impact. According to vocabulary.com, water project is a developmental or exploitative act of making some area of land or water more profitable or productive or useful. Jacob (2017) posit that water is a naturally occurring resource that is fundamental for the sustenance of life, biological systems and a vital requirement for social and financial advancement of our nation. Many organizations both local and global in all parts of the world have

actualized water activities to advance safe water supply and sanitation in the rural areas over the past years. WaterAid (2006) submitted that in Nigeria, the three levels of government – federal, state, and local –share statutory responsibility for the delivery of water supply and sanitation services and have been directly involved in water supply and sanitation through government response to community demand through elected representatives.

The Federal Ministry of Water Resources is responsible for policy formulation, data collation, resources and demand surveys, monitoring, evaluation and the coordination of water supply development and management, research and development, national funding and technical support, and the creation of an enabling environment for meaningful private sector participation among others. The state water supply agencies are responsible for the establishment, operation, quality control and maintenance of urban and semi-urban water supply systems. They are also responsible for licensing and monitoring private water supply and for monitoring the quality of water supply to the public as well as providing technical assistance to local governments. Local governments are responsible for the establishment, operation and maintenance of rural water supply schemes in conjunction with the benefiting communities. They also have the responsibility to establish, equip and fund the Water and Environmental Sanitation (WES) department. WaterAid (2006) reported that accurate planning data is difficult to obtain, there is a need for more evidence based planning for the implementation of water projects and in reality however, coordination between the three tiers of government is very weak, particularly when it comes to implementation of water projects.

State Rural Water Supply and Sanitation Agencies have largely been responsible for the implementation of projects in the rural areas on behalf of the states, while private

contractors have handled those of federal government. Egbinola (2017) submitted that although the institutional framework in Nigeria is very elaborate, it is not effectively coordinated and harmonized and the link between the sector institutions is very weak, leading to inefficiency and duplication of efforts. Also, reported that most of the investment for water provision in Nigeria is by the Federal Government which makes about 50 per cent of investment mainly for the supply of bulk water, through building of dams and reservoirs to supply bulk water to the states.

The bulk water provided by the Federal Government is not only for domestic use but also for industrial and irrigation purposes and the states provide about 25 per cent of capital investment to water supply, which is for the treatment and distribution of water for domestic use in urban centers. The local government investment to water supply is mainly in rural and semi-urban areas while communities only make investments within the rural areas. Most water project in Nigeria do not meet performance requirement as some of the water projects overstretch their budgets and are not completed on time. National and regional governments, local and international NGOs invest large sums every year for the implementation of water supply projects (Gebrehiwot, 2014).

Maimuna and Kidombo (2017) posited that construction of water projects does not help if they fail after a short time and for a long time, measures taken by government to address water service coverage gaps have concentrated on building new infrastructure with little attention given to improving efficiency and productivity of water utilities. Wechuli and Kavale (2017) submitted that the shortage of water has been amplified by low investment in water by government, especially in rural areas, and lack of leadership in the guidance and management of scarce water resources we have in the country.

Chukwu (2015) posited that in most cases water project quality control and assurance were downplayed with emphasis on number of communities covered rather than water supply system efficiency and that water Schemes sustainability involving ownership, operation and maintenance structure are not properly addressed in planning. Chukwu (2015) also posited that Water resource agencies and private individuals carry out water resource developmental projects in an uncoordinated manner with each not taking into considerations the activities of the other. Lack of access to safe water in Nigeria States could be attributed to the geology, low annual rainfall, high annual evaporation, poor funding by the government, improper selection of contractors and poor community mobilization (Yaya *et al.*, 2003).

Climate variability and increasing demand for water as a result of development and population pressure are factors that water sector may not be able to control but can initiate mitigation measures to ensure sustainable water resource development (Wechuli and Kavale, 2017). Egbinola (2017) posited that developing countries had made considerable investment in water schemes and related activities in addition to being blessed with abundant water resources with the desire to improve access to this resource was becoming more and more elusive because of the rapidly increasing demand for water. Also, pointed that rise in demand for water that was outstripping water supply is consequent on high population growth rate coupled with increasing urbanization, and rising living condition as a result of economic growth. According to WWAP (2015), water service remains rather low on the scale of policy priorities in most countries, despite well-documented contribution to human and economic development. Egbinola (2017) added that most water supply pipes in the country were laid in the 1970's with little replacement or construction of new pipelines this has occasioned the problem of burst pipes, leading to huge wastage of the already scarce resource.

Egbinola (2017) submitted that one known feature of the water resources sector in Nigeria is the litany of abandoned projects, which mainly stems from government's insincerity in the award of contracts because most of the water project contracts are awarded to politicians who often sub-contract them to professionals after removing more than the profits in the contracts and the projects suffer delays or abandonment; where such projects are completed they are often substandard. Egbinola (2017) reported that both the executive and legislature through their constituency projects construct boreholes and mini water works that often break down a few days after inauguration.

There is hardly any maintenance structure to sustain water projects in Nigeria with numerous hand pumps, motorized boreholes, surface water schemes with water treatment plants, and dam projects that are not functioning as a result of maintenance issues. According to Akpe (2012), it is estimated at 90 per cent, that Nigeria lacks a clear framework for the metering, billing or collection of water payments. This has led to water bill payment defaults of over N1bn, making revenue generation almost impossible in the water sector. The nation's water sources are under serious threat from widespread pollution, including the indiscriminate disposal of refuse including hazardous substances (Egbinola, 2017).

2.2.6 Project Performance

One of the key issues in project management is on what needs to be done to improve project performance (Love *et al.*, 2011). However, as noted by several researchers, there is no consensus on project performance criteria that can be used across various projects (Zhang and Fan, 2013; Khan *et al.*, 2014). This is partly due to the fact that different stakeholders view project performance differently and a project that seem successful to the client may be unsuccessful venture for contractors or end users (Toor and Ogunlana, 2010; Jugdev and Muller, 2005; Cookie-Davies, 2002). A review of extant literature

shows a number of project performance evaluation models are in use with one of the most commonly used models being the “Iron Triangle” or “Golden Triangle” in which project performance is evaluated based on completion of the project within time, cost and quality (Atkinson, 1999). However, various researchers (Wateridge, 1995; Lim and Mohamed, 1999; Shenhar, 2001; Yu *et al.*, 2005) have criticized the use of iron triangle criteria due to its simplicity in evaluating project performance and have proposed inclusion of other aspects such as key stakeholders’ satisfaction, future potential to the organization and customer’s benefits.

In addressing weakness of the “Iron Triangle”, Hwang *et al.* (2013) posited that project performance can be assessed in both qualitative and quantitative terms by considering outcomes such as cost, time, safety, quality and rework. In addition, Zhang and Fan (2013) developed a model for evaluation of project performance in the construction projects with model parameters being meeting project’s overall performance (time, cost and quality); meeting owner’s requirements; meeting project’s multiple goals (health and safety, risk management, claim management and absence of conflict) and stakeholders’ satisfaction (owner, project team, end-user, suppliers and other stakeholder satisfaction). Gowan and Mathieu (2005) contended that project performance can be assessed through time, cost, quality, satisfaction and business value parameters. Although a number of models exist to evaluate project performance, the conventional measures of time and cost, which were used in this study, dominate performance measurement in the construction industry due to their objectivity (Pinto and Slevin, 1988; Cookie-Davies, 2002).

In addition, some of the parameters such as absence of conflict, end-user satisfactions, risk management that have been proposed in other models require passage of time between project completion and evaluation of project performance. Based on time and

cost evaluation criteria, projects may experience delays and cost overruns. Assaf and Al-Hejji (2006) defines project delay as the time over-run either beyond completion date specified in the contract or beyond the date that the parties agreed upon for the delivery of a project. On the other hand, Kaliba *et al.* (2009) defines cost overrun/escalation as the increase in the amount of money required to completing a project over and above the original budgeted amount. Projects are successful if they are completed on time, within budget, and to performance requirements (Faith, 2018).

In order to bring the many components of a large project into control there is a large toolkit of techniques, methodologies, and tools. These techniques provide the tools for managing different components involved in a project: planning and scheduling, developing a product, managing financial and capital resources, and monitoring progress. However, the success of a project will always rest on the abilities of a project manager (Faith, 2018). Different authors have proposed different ways to measure project performance (Wong and Wong, 2007; Lin and Kuo, 2007). How well projects can achieve their objectives is an indicator of organizational performance as suggested by Vankatraman and Ramanujan (1986).

Vankatraman and Ramanujan (1986) identified ten different types of performance measurement and narrowed down to three main dimensions as follows: financial performance, business performance and organizational effectiveness. Lin and Kuo (2007) proposed project performance based on humanistic performance factors which consist of employee retention and motivation and market performance factors which consists of sales, profit margin and customer satisfaction. Naumann and Gae (1995) stated than employee and customer satisfaction are among firms' key performance measures that could lead to good relationship behaviour and according to Spector (1997) could lead to better organizational functioning. Kloppenborg and Opfer (2012) pointed

in a detailed review of project management research, found that the focus of project management research in the 1960s to 2000s concentrated on the elements of planning and scheduling. In the 2000s the emphasis was in the area of scheduling, control, and automated tools, which led to research in the area of life cycle costing and risk management planning. In the late 2000s research into team building and leadership emerged (Shenhar and Dvir, 2007).

The development of better processes and the organizing of teams more effectively resulted from an increased emphasis on leadership and human resources (Kloppenborg and Opfer, 2012). Achieving successful project outcomes require the combination of technical and leadership competencies (Zimmerer and Yasin, 2008). Many project management processes and techniques (planning, scheduling, control, and automated tools) exist for tracking and measuring the technical elements of projects.

The processes and methods do not generally track or measure leadership skills of managing people such as communication, building relationships, resolving conflict, and team engagement or motivation (Kloppenborg and Opfer, 2012). It is believed that leadership competencies are required to enable project management to effectively use human resource skills to improve project outcomes (Schmid and Adams, 2008). Project managers draw on a variety of leadership approaches with management literature mentioning leadership styles like autocratic leadership, bureaucratic leadership, charismatic leadership, democratic leadership, laissez-faire leadership (Turner and Muller, 2005).

Each style of leadership impacts project performance differently, some of them helping projects achieve success, others only hindering their development and being a source of dissatisfaction and demotivation (Drucker, 2006). Skills also affect performance of

projects and they need to be developed, knowledge needs to be acquired and most of all, experience needs to be accumulated. Effective leadership means the success of the project (Schein, 2004).

2.3 Conceptual Review

A conceptual framework is a research tool intended to assist a researcher to develop awareness and understanding of the situation under scrutiny and to communicate it. A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought (Faith, 2018). This study was based on the trait theory of leadership, style theory of leadership, contingency theory of leadership, charismatic theory of leadership, emotional intelligence theory of leadership and the competency theory of leadership as the theoretical framework through which the relationship between leadership style, challenges and project characteristics and project performance were examined.

The dependent variable in this study was project performance. Project performance was measured in terms of time, functionality, quality, complexity and cost performance based on extant literature (Pinto and Slevin, 1988; Cookie-Davies, 2002; Othman *et al.*, 2006; Issanayaka and Kumaraswamy, 1999; Kaka and Price, 1991 as cited in Kariuki, 2015). In addition, based on reviewed literature (Burns, 1978; Bass, 1985, 1990; Turner and Muller, 2005; Pieterse *et al.*, 2010; Yang *et al.*, 2011; Kissi *et al.*, 2012; Muller & Turner, 2012), the independent variables namely leadership style and challenges of identified project leadership.

Project leadership style was identified and operationalized into Autocratic Leadership Style, Democratic Leadership Style, Laissez-faire Leadership Style, Transactional Leadership Style, Transformational Leadership Style and Charismatic Leadership Style.

Also, challenges of identified project leadership was identified and operationalized into experience of team members, Risk minimization, Inadequate communication, Managing stakeholder's expectation, Managing project change, Providing clarity on project direction, Managing unrealistic deadlines, Managing scope creep, Insufficient team skills, Poorly defined goals and objectives, Managing teamwork, Lack of accountability, Managing estimated expenses, Lack of trust, Presence of conflict and tension, Improper flow of information, Low team commitment and engagement, Lack of transparency, Long-term thinking and Inspiring Project Team. Based on the behavioural or style theory of leadership and extant literature (Gadirajurrett *et al.*, 2018; Pretorius *et al.*, 2018; Kissi *et al.*, 2013; Muller and Turner, 2012; Tabassi and Babar, 2010; Prabhakar, 2005; Keegan and Den-Hartog, 2004). It was observed for instance, leadership based on behaviour or style is that different projects require different leadership styles and due to this, project managers should use those attributes up to that extent which are required for the given project objectives and hence completion of project on time; this relationship is represented by null Hypothesis (H1). In addition, the study also theorized a relationship between project leadership and challenges associated based on reviewed literature (Kashyap, 2019; Flint and Hearn, 2016; Taylor, 2014; Ceric, 2011; Muller and Turner, 2004; Bennett, 2000). This relationship is represented by null Hypothesis (H2) as theorized that project leadership style has an influence on project performance. Further, arising from reviewed literature (Zhang and Fan, 2013; Love *et al.*, 2011; Zlimmerer and Yasin, 2008; Schimid and Adams, 2008; Schein, 2004).

It was also theorized that the combined effect of project leadership style influence project performance; this relationship is represented by null Hypothesis (H3).

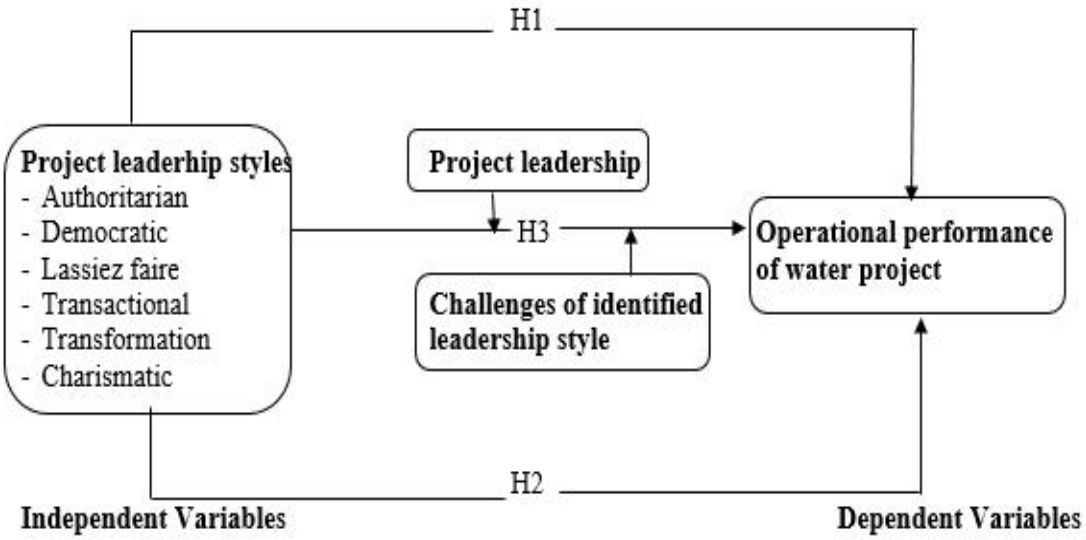


Figure 2.1 Conceptual Framework
Source: Study model (2019)

2.4 Empirical Review

2.4.1 Leadership Style and Project Performance

Project performance is the ability of a project to deliver intended outcomes while meeting the constraints of scope, cost and quality (Srica, 2008). Projects are successful if they are completed on time, within budget, and to performance requirements. However, the success of a project will always rest on the abilities of a project leaders. In the late 2000s research into team building and leadership emerged (Shenhar and Dvir, 2007). Achieving successful project outcomes require the combination of technical and leadership competencies (Zimmerer and Yasin, 2008).

The processes and methods do not generally track or measure leadership skills of managing people such as communication, building relationships, resolving conflict, and team engagement or motivation (Kloppenborg and Opfer, 2012).

It is believed that leadership competencies are required to enable project management to effectively use human resource skills to improve project outcomes (Schmid and Adams, 2008). Project managers draw on a variety of leadership approaches with management literature mentioning leadership styles like autocratic leadership, bureaucratic leadership, charismatic leadership, democratic leadership, laissez-faire leadership (Turner and Muller, 2005). According to Love *et al.* (2011), one of the key issues in project management is on what needs to be done to improve project performance. However, there is no consensus on project performance criteria that can be used across various projects (Khan *et al.*, 2014). This is partly due to the fact that different stakeholders view project performance differently and a project that is successful to the client may be considered unsuccessful by contractors or end users (Toor and Ogunlana, 2010; Jugdev and Muller, 2005). One of the most commonly used project performance model is the completion of projects within time, cost and quality "the Iron Triangle" (Atkinson, 1999). Leadership styles have been identified as critical factors in organization performance, no consensus has been reached in the area of project performance (Kissi *et al.*, 2012; Muller *et al.*, 2012; Yang *et al.*, 2011). Abdullah (2015) studied the influence of leadership styles on organizational performance of logistics companies in Mombasa County.

Descriptive and inferential statistics were employed to answer the hypothesis of the study. Data was collected from a sample of 150 managerial staff and analyzed through SPSS.

The study found out that all of the leadership styles had an influence on organizational performance and contributed significantly to organizational performance. The study revealed that democratic leadership style emerged as the most significant influence on organizational performance.

Koech (2014) study investigated the main effects of leadership styles on organizational performance at state-owned corporations in Kenya. It specifically sought to determine the impact of laissez-faire, transactional and transformational leadership styles on organizational performance at state-owned corporations in Kenya. A descriptive survey research based on the perceptions of middle and senior managers in thirty 30 state-owned corporations based in Mombasa, Kenya was undertaken. A structured self-completed research questionnaire was thereafter distributed and collected after one week. The findings of the study were that correlations between the transformational-leadership factors and organizational performance ratings were high whereas correlations between the transactional leadership behaviours and organizational performance were relatively low as expected, laissez-faire leadership style is not significantly correlated to organizational performance and should be discarded.

Odera (2014) study examined the impact of leadership style on organizational performance in selected Banks, in Machakos, Kenya. Purposive sampling technique was adopted in selecting a total of sixty (60) respondents as sample for the study, while relevant data was gathered with the aid of a structured questionnaire. One hypothesis was formulated and inferential statistical tool was used to analyze the data. Pearson product moment correlation was used to examine the relationship between leadership style dimensions and organizational performance, while Regression analysis was used to examine the significant effect of leadership style dimensions on followers and performance.

Findings showed positive and negative correlation between leadership style dimensions and organizational performance. It was also found that leadership style dimensions jointly predict organizational performance. The study concluded that transformational

and democratic leadership style should be employed by the banks for better performance.

Thwala (2012) conducted a study on the relationship between leadership styles and project success in the South Africa construction industry. Data was collected through a structured questionnaire aimed at 150 project and construction managers in the South African construction industry. Data from the questionnaire were analyzed using SPSS 21.0 software. Correlation analysis was used to determine the relationship between leadership styles and project success. Likewise, the relationship between the different leadership styles and project successes in the South African construction industry was investigated using Pearson Product Moment Correlation Coefficient. Findings from the study revealed that there is a positive relationship between transactional leadership and project success. The results further revealed that there is no relationship between Laissez faire leadership style and construction project success. Ongesa (2012) studied the effect of leadership styles on the performance of public secondary schools in national examinations in Tana River County, Kenya. Explanatory approach was used. Sample size of 49 respondents was selected for the study and primary data was collected from the teachers and principals using self-administered questionnaires. Both inferential and descriptive statistics were used to analyze the data. The finding of this study strongly indicate a positive relationship between the principals' leadership styles and students' performance. Autocratic leadership style was found to have a significant effect on the students' performance in national examinations. The study recommends the principal to shift to transformative approaches of leadership to enhance good performance of student at the national level. Kissi *et al.* (2012) examined the impact of portfolio manager's transformational leadership style on project performance through administration of questionnaires to 350 project managers in the United Kingdom (UK).

Using data from 112 completed responses, the study found that transformational leadership behaviour of portfolio managers was positively related to project performance.

The results were consistent with Waldman and Atwater (1994) study; that transformational leadership of higher level managers positively influenced project outcomes (quality-, cost, time and stakeholders satisfaction). In addition, innovation championing and existence of a climate for innovation were found to intervene on the relationship between transformational leadership and project performance. However, the study was based on one organization which limited generalizability of the results. In addition, risk of common source data was present as data was collected from project managers only and hence other project team members' perspective were not included in the study. In a study to assess leadership style in the construction industry, Tabassi and Babar (2010) administered 220 questionnaires to top management team's members of large construction companies in Iran. Analysis of data from 107 responsive questionnaires identified transformational leadership style as the most common style in the Iranian construction industry. However, their results of high task and almost high relationship were in contradiction with the study of Rowlinson *et al.* (1993); Walker and Kalinowski (1994) observation study on a low-task and high relationship attitude as appropriate leadership style in Hong Kong. In addition, data was only collected from contractors and hence did not incorporate views of other project team members. Prabhakar (2005) investigated the importance of transformational leadership style on project success using a two phased study. In the first phase, there were 46 respondents out of 225 contacted while in second phase; there were 107 responses out of 400 contacts made. Using data collected from 153 project managers across 28 nations, the study found that 51.7 percent of variance in project success was due to project

manager's years of experience, relationship orientation, and teams understanding of the technology being used, project manager's leadership and management style. Although the study established that project manager's switches leadership styles during project execution, no significant correlation was found on its impact on project performance. Kissi *et al.* (2012) found transformational leadership behaviour of portfolio managers to be positively related to project performance. In addition, Prabhakar (2005) added that project manager's switches leadership styles during project execution, no significant correlation was found on its impact on project performance.

In addition, the study found a positive relationship between transformational leadership style and project success, which supports Keegan and Den-Hartog (2004) assertion on the importance of transformational leadership style in projects. Further, project manager's experience was found to be positively correlated with project success. However, project managers assessed their own leadership style and thus project team views were not considered to give a 360-degree view of the relationship between leadership and project performance. In addition, project performance was subjectively assessed based on the perception of project managers which introduces the risk of overrating of performance.

Ogunlana and Limsila (2008) examined the relationship between project manager's leadership style, subordinates' commitment and work performance in Thailand's construction industry.

Using data from 52 construction projects in which there were 52 project managers, 92 engineers and 12 architects, it was found that project managers switch leadership style based on the needs of the project. However, transformational leadership style was found to be the most dominant style in Thailand. In addition, transformational leadership style was found to generate higher subordinates' commitment and to create higher leadership

outcomes (effectiveness, satisfaction and extra effort) than the transactional leadership style. Although the results were in line with those of Ogunlana *et al.* (2002) but they were in contradiction to those of previous study by Komin (1990) who had found the dominant style being transactional. One possible explanation of the differences was the effect of culture change in Thailand from high distance between leader and subordinate to a more democratic culture that encourage subordinates to be democratic and participative and hence the trend towards transformational leadership style.

2.4.2 Water Project Performance

Kasiaka (2004) noticed that statistics indicated that 1.3 billion individuals globally use contaminated water, 800 million are malnourished and without food. Two potential results that ought to concern every one of us about water provision matters are the outcomes for generation which thus bargains the security of the sustenance supply and clashes over control of the water that can happen. Despite the importance of water projects to Kenya's social-economic development, the amount of resources invested and the fact that the utility of these projects depends upon successful completion, the performance of most projects in the water sector has been poor with majority experiencing time and cost over-run (Manyindo, 2009; Elliott and Kimotho, 2013). International Institute for Environment Development (IIED) reported by Mulwa (2008) stated that up to US dollars 360 million spent on building boreholes and wells was wasted as a result of poor maintenance of water supply points. An estimated number of 50,000 water supply points are nonfunctional across Africa. The report further indicates that only one third of water points constructed by NGO's in Senegal are working while 58% in Ghana are beyond repair.

This is attributed to the fact that the Government and other development agencies do not consult local people on long term sustainability constructs such as operations,

maintenance and financial management after termination of external financial support. The culture of constructing water points and then walking away without proper assessment on post implementation maintenance procedures is highly criticized. In a study conducted in Ethiopia funded by African Development Fund (ADF) (2005) indicated that women in rural areas travel long distances to fetch water, accounting for two to six hours per day. As the amount of time spent on water fetching increases, women's involvement in other economically beneficial activities significantly decreases. Therefore, water facilities should be made accessible as possible to all segments of the population because of good performance which satisfy water requirements of members of the community. Jacob (2017) reported that the performance level of a community-based water management project can be influenced by level of community participation and ownership, training and project leadership, government structure of the project and basic management skills of leader among other factors such as financial and technical support. Therefore, prudent use and management of the water resource is therefore fundamental. In Nigeria, water and sanitation sector has been dominated by the awarding of large contracts under the supervision of government consultants, particularly at the federal and state levels.

Most of these contracts, particularly with external loan components from the World Bank and African Development Bank targeted at urban water supply, have achieved unsatisfactory levels of completion (WaterAid, 2006).

2.5 Empirical studies and research gaps on project leadership, leadership styles and performance of water project.

Faith (2018) submitted that leadership skills affects the performance of C. I. projects in kitui county, kenya. Also, established that there is no one superior leadership skill to the

other, but different competences mixes are needed at different managerial levels which gave gap for further research to be carried out to establish factors attributed to affecting the performance projects as the current study only examined project management leadership aspects of skills, experience, control and style.

Study by Kariuki (2018) reported that there is a significant relationship between project manager's leadership style and water project performance that gave the need for further research in considering other aspect of project performance such as client satisfaction, stakeholder satisfaction and impact of the project on the environment. Jacob (2017) submitted that project members and government should show serious attention and commitment for the success of water project gave rise to further research to focus on other factors influencing performance of community water project.

Wechuli and Kavale (2017) posited that role of leaders were very critical in determining how projects performed and the role of coordination and monitoring were found to have the greatest influence and gave the rise to research gap such that research should be carried out to establish the other factors that are attributed to affecting the performance of water projects as the current study only examined leader's role. A table showing detailed summary of literature review and research gaps is enclosed in Appendices. The concept framework shows the interaction between variables of this study.

2.6 Conceptual Model

The independent variable are the Project leadership factors; the leadership styles that improves the performance of water project in Nigeria, the challenges of identified project leadership style in the execution of water project in Nigeria, and the relationship between project leadership and project performance in the execution of water projects in Nigeria. The dependent variable is performance of water project.

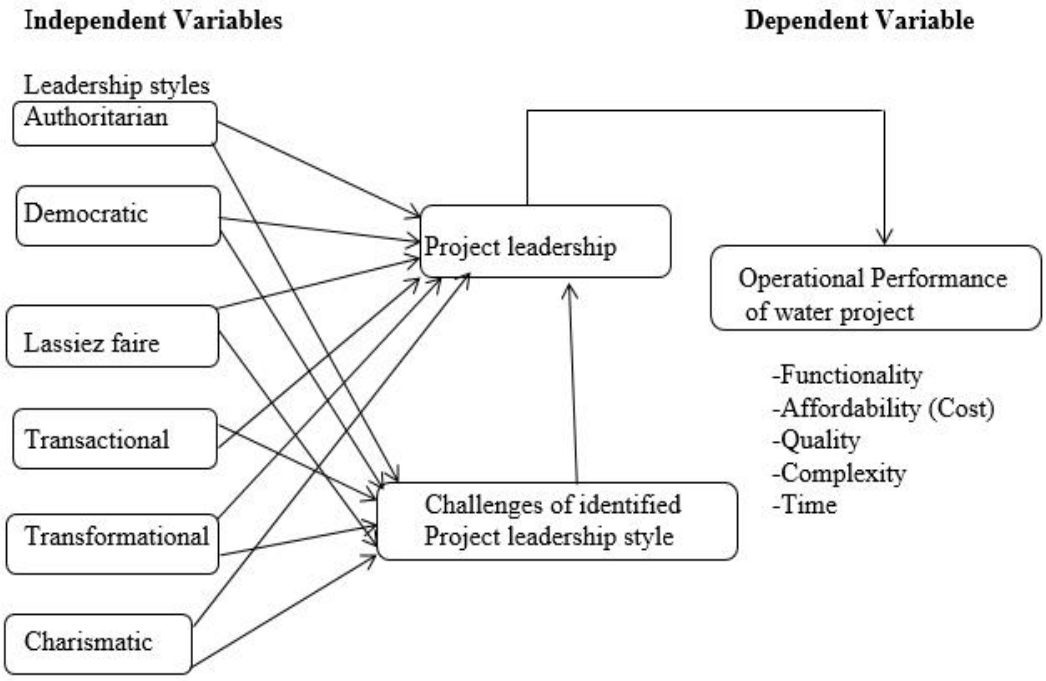


Figure 2.2 Conceptual model
Source: SEM-PLS software (Smart_PLS v 3.2.8) – Path Diagram

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research Method

The study deals on explorative mission to assess project leadership on the performance of water projects in Nigeria. Cases of water project undertaken by various water project actors including but not limited to government, NGOs and private individuals will be examined as case study approach was the most suitable method. This is because actual cases will illustrate clearly the issues the researcher wi1shes to discuss and also provide sources of required data. Constituency water projects by government, developmental water projects by NGOs and private water project for communities were focus for the study to provide information both descriptively and quantitatively. Therefore, offers an adequate basis for exploring project leadership on the performance of water projects in Nigeria.

The purpose of this study is to explore leadership style, identified challenges of project leadership and relationship between project leadership styles with the performance of water projects in Nigeria which was broken down into three research questions that influence the way the study was conducted. In order to get a more complete understanding of the research questions, the researcher decided to integrate two forms of data, data collected from principal organizations and other organizations involved with the initiating, managing and developing water projects such as donor agencies, contracting and consulting organizations and data from the professionals working for the achievement of water projects in Nigeria.

3.2 Research Design

This research employed a research strategy of quantity. The quantitative approach leads to quantifying the relationship between the independent and dependent variables identified earlier in the study. Quantitative approach as a method that specifies numerical assignments to explain, predict, and/or control the phenomena under study (Vanderstoep and Johnston, 2009; Gay, 1996). Quantitative approach for this study focuses on numbers of professionals in the water sector and their subjective experiences on the process of disclosure and the way they interpret them. The research design addresses the pressing problem of water projects failure through leadership structure. Leadership structure is essential to support performance of water projects as water projects encounter high failure rate.

3.3 Population of the study

The research population considered for the study was 400 people comprises of professionals that partake in water project development from initiation to commission stages within the northern-central geo-political zone of Nigeria. The population of this study comprised of water projects which were completed and undertaken by government (Federal, State and Local through contractors), donor agencies, communities and private individuals within the North-Central States of Nigeria namely; Niger State, Nasarawa State, Kogi State and Federal Capital Territory. The professionals for the study population include project managers, Engineers, Suppliers, Geologist, Geo-physicians, Water-Scientist and environmental surveyors.

3.4 Sample and Sampling Techniques

The sample size for this research is scientifically determined using Yamane, (1967) simplified formula for calculating sample sizes. The population sample size for this research is 200, chosen from 400 population of respondent under study. The sample size

of each state under study is 50. Simple random sampling technique is use for the study. Simple random sampling technique means that every element in the population of interest possesses equal and independent chance of being chosen.

n = N / (1 + N (e) 2) …… Yamane, (1967) formula for calculating sample sizes

Where; n signifies the sample size, N signifies the population under study, e signifies the marginal error or the level of precision. This formula was used to calculate the sample sizes for the study within 95% confidence level and error level 5%. e = 5/100 = 0.05, N = 400

Where, N = Population under study

n = 400 / (1 + 400 (0.05) ^2)

n = 400 / (1 + 400 (0.0025))

n = 400 / (1 + 1)

n = 400 / (2)

n = 200

3.5 Research Data

Data Collection

Use of questionnaire and scheduled structured interview will be the primary sources of data collection. The mode of administration of questionnaire and interview is through personal contact with respondent because it reduced limitation that might have arisen due to interpretation of some of the questions that might be difficult to the respondent. These questions were structured in a way that the respondents provide answers to research questions that enables the researcher to easily analyze data.

Secondary Data

The secondary data was obtained from books, e-books, internet, journals, magazines, daily papers and organization publications. The secondary sources were used to supplement the findings of the research study.

3.6 Model Specification/Measurement of Variables

The study comprised both dependent variable (y) and independent variable (x). The dependent variable (y) is performance of water project while the independent variable; x1- leadership styles that improves the performance of water project in Nigeria, x2- challenges of identified project leadership style in the execution of water project in Nigeria, and x3- relationship between leadership style and performance of water projects in Nigeria.

3.7 Method of Data Analysis

The data collection makes use of structured interview and questionnaire in likert scale five-point weight as follows. Strongly - 5 points, Agree - 4 points, Partially Agree - 3 points, Partially Disagree - 2 points, Disagree -1 point.

Data was analyzed using Smart PLS (version 3.2.8) software for Partial least square (PLS) – Structural Equation modeling (STEM) to establish the relations between the independent and dependent variables.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Number of Questionnaire Administered and Retrieved for the Study

Table 4.1 below shows the copies of questionnaire administered and retrieved. The total numbers of questionnaires distributed were 200 copies. 20 copies of administered questionnaire were withheld amount to 10% while 180 copies were retrieved amounting to 90% which made a very good number out of 200 copies of questionnaire administered.

Table 4.1 Number of Questionnaire Administered and Retrieved for the Study

State (Study Area)	Questionnaires Distributed	Questionnaires Retrieved	Percentage Retrieved (%)
FCT-Abuja	50	48	96%
Kogi State	50	41	82%
Nasarawa State	50	45	90%
Niger State	50	46	92%
	200	**180**	

Also, Table 4.1 shows copies of questionnaires were distributed to the study area strategically. 50 copies of questionnaires were distributed to FCT- Abuja, Kogi-state, Nasarawa state and Niger state and 48, 41, 45 and 46 copies were retrieved respectively amounting to 96%, 82%, 90% and 92% of the copies distributed to each state (study area) respectively. Therefore, the response rate for the study is 90% based on 180 total copies retrieved from 200 total copies of questionnaire distributed.

4.2 Socio – Economic Characteristics of Respondents

4.2.1 Respondents Gender and Educational Qualification

Table 4.2 shows personal information of gender and educational qualification of respondents. On gender of respondents; 140 (77.78%) were males while 40 (22.22%)

were females. This implies that there is high level of male gender representation among those who took part in water development projects in Nigeria.

Table 4.2 Respondents Gender and Educational Qualification Information

Gender	Frequency	Percentage
Male	140	77.78%
Female	40	22.22%

Educational Qualification	Frequency	Percentage
Ph.D	8	4.44%
M.Sc/M.Tech	43	23.89%
B.Sc/B.Tech	92	51.11%
HND/OND	30	16.67%
SSCE	7	3.89%

Also, Table 4.2 shows the educational qualification of the respondents; 8 (4.44%) have Ph.D. degree, 43 (23.89%) of respondent have M.sc/M.tech degree, 92 (51.11%) respondent have B.sc/B.tech degree, 30 (16.67%) respondent have HND/OND degree, 7 (3.89%) of the respondent have SSCE educational qualifications.

4.2.2 Experiential Information

4.2.2.1 Respondent Engagement level with Water Project Development

Table 4.3 below shows experiential information of respondents in relationship with engagement to water project development. Majority 145 (80.56%) of the respondents have knowledge and had engaged with water project development, while the remaining 35 (19.44%) respondents have little or no knowledge about water project development.

Table 4.3 Respondent Engagement level with Water Project Development

Engagement with Water Project Development	Frequency	Percentage
Yes	145	80.56%
No	35	19.44%

4.2.2.2 Respondent Work Experience

Table 4.4 below shows work experience of respondents. Majority 50 (27.78%) of the respondents had worked for 8-13 years. similarly, 43 (23.89%) of the respondents had worked for 4-7 years, 38 (21.11%) of the respondents had worked for 14-19 years. Also, 32 (17.78%) of the respondents had worked for 0-3 years while the remaining 17 (9.14%) worked for above 19 years.

Table 4.4 Respondent Work Experience

Work Experience (Years)	Frequency	Percentage
0-3 years	32	17.78%
4-7 years	43	23.89%
8-13 years	50	27.78%
14-19 years	38	21.11%
Above 19 years	17	9.44%

4.2.2.3 Respondent Job Specialization

Table 4.5 below shows job specialization of respondents. Where majority 52 (28.89%) of respondents were geologist/geo-physicians. 33 (18.33%) of the respondents were engineers/suppliers, 27(15%) of respondents were water scientist/environmentalist, 23(12.78%) of the respondents were project managers while the remaining 45 (25%) belong to the category of others.

Table 4.5 Respondent Job Specialization

Job Specialization	Frequency	Percentage
Project Manager	23	12.78%
Engineer/Suppliers	33	18.33%
Geologist/Geo-physician	52	28.89%
Water Scientist/Environmentalist	27	15%
Other	45	25%

4.2.2.4 Respondent Position on types of Water project

Table 4.6 below shows respondents' positions on types of water project respondents are associated with and of which their responds centers around. Majority. 80 (44.44%) of respondents belong to the category of water supply projects. 40 (22.22%) of the respondents belong to the category of water quality, pollution control and drainage projects. 12(6.67%) and 10(5.56%) of respondents go for water irrigation and water dam and reservoirs projects respectively. The remaining 38 (21.11%) of respondents belong to the category of other types of water projects.

Table 4.6 Respondent Position on types of Water project

Name/Type of Water Project	Frequency	Percentage
Water Supply	80	44.44%
Water Irrigation	12	6.67%
Water Dams and Reservoirs	10	5.56%
Water Quality, pollution control and drainage	40	22.22%
Others	38	21.11%

4.2.2.5 Respondent Rating of performance of water Project

Table 4.7 below shows respondents rating of performance of water project. 117 (65.00%) of respondents' rate performance of water project to average. 35 (19.44%) of the respondent's rate performance of water project good, 8 (4.44%) of respondents' rate performance of water project to be very good, 10 (5.56%) of the respondents' rate performance of water project as bad also, 10 (5.56%) of the respondents' rate performance of water project as very bad respectively.

Table 4.7: Respondent Rating of performance of water Project

Rating of water project performance	Frequency	Percentage
Very good	8	4.44%
Good	35	19.44%
Average	117	65%
Bad	10	5.56%
Very bad	10	5.56%

4.2.2.6 Respondent Position of Water project principal organization

Table 4.8 below shows the position of respondents to water project principal organization. Majority of respondent 148 (82.22%) belong to the category of government as water project principal organization. 12 (6.67%) of respondents belong to the category of NGO as water project principal organization.

13 (7.22%) and 5 (2.78%) respondents belong to the category of Private and community as water project principal organization. The remaining 2 (1.11%) belong to the category of others as water project principal organization.

Table 4.8: Respondent Position of Water project principal organization

Water Project principal organization	Frequency	Percentage
Government	148	82.22%
NGO	12	6.67%
Private	13	7.22%
Community	5	2.78%
Others	2	1.11%

4.2.2.7 Respondent position on Water project complexity

Table 4.9 shows respondents rating of water project complexity. Where majority 108 (60.00%) of respondents' rate medium the complexity of water project. 50 (27.78%) of the respondents' rate high the complexity of water project and 22(12.22%) of respondent's rate low the complexity of water project.

Table 4.9 Respondent position on Water project complexity

Water Project Complexity	Frequency	Percentage
Low	22	12.22%
Medium	108	60.00%
High	50	27.78%

4.2.2.8 Respondent Position on Water Project Duration

Table 4.10 below shows respondents rating of water project developmental duration. Where majority 65 (36.11%) of respondents accepted that water project development duration falls below 2 years. 63(35.00%) of respondents falls under the category of 2 to 4 years, 30(16.67%) of respondents falls under the category of 5 to 9 years and 17(9.44%) of respondents falls to the category of 10 to 15 years. The remaining 5(2.78%) of respondents falls under the category others.

Table 4.10 Respondent Position on Duration Water project

Water project duration	Frequency	Percentage
Below 2 years	65	36.11%
2 to 4 years	63	35.00%
5 to 9 years	30	16.67%
10 to 15 years	17	9.44%
Others	5	2.78%

4.3 Research Constructs under Measure

Structural equation modeling (SEM) is a series of multiple regression equations, that examines the structure of inter relationships between the constructs that are expressed in a series of equations. These equations show the entire relationships between the independent and dependent variables (constructs) involved in the analysis.

The constructs no longer differentiate between dependent and independent variables rather it distinguishes between exogenous and endogenous variables and these variables are latent factors represented by multiple variables. The endogenous variables are explained in the relationship contained in the model and the exogenous variables which are not explained by 1the postulated models always act as independent variables.

The model construct is analyzed using structural equation modeling (SEM) method. SEM allows researchers to integrate unobservable variables (latent variables) measured indirectly by indicator variables. The estimation technique used under SEM is the Partial Least Square (PLS) using SmartPLS package version 3.2.8. In addition, PLS-SEM is efficient in modelling hierarchical latent variables. The concept of Structural Equation Modeling (SEM) has been around since the early 80's and overtime it has evolved in scope and areas of application for testing theories and concepts in different fields of study. SEM methods are either covariance-based SEM or variance-based SEM.

The study uses Partial Least Squares (PLS) approach to STEM which is a variance-based method applied for explanatory analysis which is applied in order to explain research construct variance in project leadership styles, challenges of identified project leadership style and relationship between Project leadership style and variables on performance of water projects in Nigeria. SmartPLS was adopted for measurement validation and for testing the research construct model based on the data collected. Confirmatory factor analysis was performed to examine the validity and reliability of the constructs. In addition, a bootstrapping procedure was conducted for the significant tests of the hypotheses model.

The measure model therefore enables this study to identify the leadership styles that improves the performance of water project in Nigeria, to examine the challenges of identified project leadership style in the execution of water project in Nigeria and to examine the relationship between project leadership and challenges of identified project leadership style towards performance of water projects in Nigeria. To achieve this, a path analysis model is developed using SmartPLS application as shown in Figure 4.1. The performance of the model is evaluated using the R square, the significance of the path coefficient of the endogenous latent variables. This is obtained by running the PLS

algorithm and by performing the bootstrapping procedure using a two-tailed test at 10 percent significance level ($p<0.1$).

4.3. Research Construct Model Specification

Path models are diagrams which are used to visually display the variable relationships and the hypothesis that are examined in SEM and the research construct as shown in Figure 4.1 above. Figure 4.1 shows path movement and the relationship between latent variable of research construct under measure. A detailed description of all latent variable and associated values are available at Appendices.

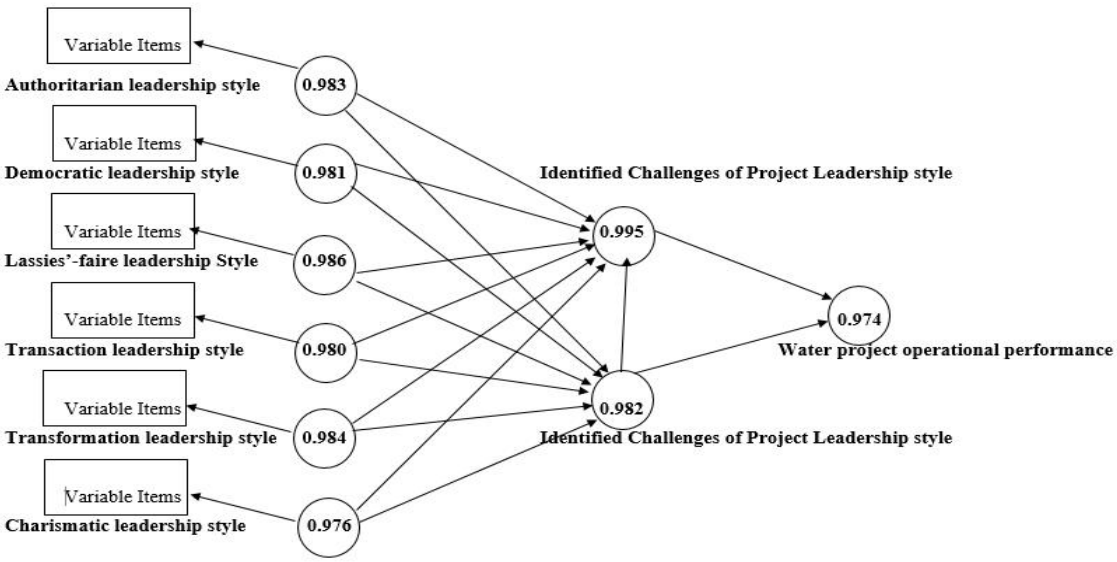


Figure 4.1: Research Construct path model showing Outer Loadings
Source: Source: SEM-PLS v 3.2.8 (2019)

The structural path model for research construct model were tested by measuring the separate sub-factors and scale reliability tracked by the convergent and discriminate validity of constructs' measures. Primarily the latent variables associations were displayed among authoritarian leadership style, democratic leadership style, laissez-faire leadership style, transactional leadership style, transformational leadership style, charismatic leadership style, project leadership and performance of water project. In

order to validate the reliability of the measurement model, the significance levels of the loading factors, composite reliability, average variance extracted (AVE) and square root of AVE is calculated for each of construct through PLS algorithm. Validating the measurement model is a recommended step before determining structural analysis of the model (Anderson and Gerbing, 1988).

4.3.2 Inner model path coefficient sizes and significance

The inner model suggests that challenges of identifies project leadership style has the strongest effect on performance of water project in Nigeria (0.576) followed by project leadership (0. 413) A detailed description of all inner model and associated values are available at Appendices. The hypothesized path relationship between project leadership and challenges of identifies project leadership style towards performance of water project in Nigeria is statistically significant. Also, the hypothesized path relationship between challenges of identifies project leadership style and performance of water project in Nigeria is statistically significant. This is because standardized path coefficient (0.576) and (0.413) respectively is greater than 0.1. Thus we can conclude that: project leadership and challenges of identifies project leadership style are both moderately strong predictors of performance of water project in Nigeria. Smart PLS algorithm was pragmatic, and the subsequent associations, coefficients, and values of loading were shown in Initial path model Figure 4.1.

4.3.3 Measurement of Research Construct

As recommended by Comrey (1973), a value of 0.45 was used as the minimum factor loading for sub-factors. In this study, the factors loading measurements of above 0.50 as suggested by Hulland (1999) was accepted. Loadings were above 0.50 which signifies that all the loadings are acceptable for the study. The research constructs were further assessed for construct reliability and validity. The composite reliability for each

construct of this study is presented in the appendices. The composite reliability values were used to examine reliability, which all of the constructs composite reliability exceed recommended cutoff of 0.7 that indicate a commonly acceptable level for confirmatory model. Inner consistency of measurement model was analyzed by using Cronbach's alpha and composite reliability. Valuation of construct reliability and prediction of inner constancy was focused on composite reliability.

As opined by Hair *et al.* (2011) that in PLS-SEM composite reliability was more appropriate compared to Cronbach's Alfa since it did not undertake that all indicators were similarly consistent. The cut-off score for composite reliability is 0.7 as suggested by Gefen *et al.* (2000) and least score should be above 0.6 for Cronbach's Alfa as suggested by (Hair *et al.,* 2010). The factor loadings, composite reliability and Cronbach's alpha values intended by PLS algorithms were charted in the appendices. The Cronbach's alpha value is above 0.702, and composite reliability score is more than 0.768. Hence, the research construct model can be said as reliable and trustworthy. Convergent validity of dignified constructs was assessed using Average Variance Extracted (AVE) tests, composite reliability scores and Cronbach's alpha which were achieved using Smart PLS software and the consequences are stated in appendices.

The consequences indicated that sub-factor were suitable for their individual constructs above the 0.7 thresholds proposed for all of the considered Cronbach's alpha standards and composite reliability scores according to Litwin (1995). Fornell and Larcker (1981) stated that AVE actions the amount of variance that a construct detained from its display comparative to the amount due to dimension errors. The consequences of the AVE test for the study confirmed that the AVE scores constructs are greater than 0.602 which signifies the acceptance of the loadings.

4.3.4 Explanation of variance in target endogenous variable

4.3.4.1 Coefficient of determination (R Square) between dependent and independent variables

The coefficient of determination (R Square) in Table 4.11 shows 0.966 for performance of water project in Nigeria endogenous latent variable. This means that the two latent variables (project leadership and challenges of identified project leadership) moderately explain 96.6% of the variance in performance of water project in Nigeria.

Table 4.11 Coefficient of determination (R Square) between dependent and independent variables

Variables	R Square	R Square Adjusted
Challenges of project leadership	0.988	0.988-
Performance of Water projects	0.966	0.966
Project leadership	0.983	0.982

Project leadership style (Authoritarian, democratic, lassiez-faire, transactional, transformational and charismatic) and project leadership together explain 98.8% of the variance of challenges of identified project leadership style.

Project leadership style (Authoritarian, democratic, lassiez-faire, transactional, transformational and charismatic) explains 98.3% of the variance of project leadership.

4.3.4.2 Cronbach's Alpha, Composite Reliability and AVE of Research Construct

Table 4.12 Cronbach's Alpha, Composite Reliability and Average Variance Extracted of Research Construct.

Research Construct Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Authoritarian Leadership style	0.978	0.980	0.983	0.904
Challenges of project leadership	0.995	0.995	0.995	0.907
Charismatic Leadership style	0.976	0.977	0.983	0.934
Democratic Leadership style.	0.977	0.979	0.981	0.898
Laissez-faire Leadership style.	0.983	0.984	0.986	0.922
Performance of water project	0.950	0.952	0.962	0.834
Project Leadership	0.978	0.978	0.982	0.902

Transactional Leadership style	0.975	0.975	0.980	0.889
Transformational Leadership style	0.981	0.981	0.984	0.911

4.3.4.3 Internal Consistency Reliability

Traditionally, "Cronbach's alpha" is used to measure internal consistency reliability in social science research but it tends to provide a conservative measurement in PLS-SEM. Prior literature by Bagozzi and Yi, 1988; Hair *et al.* (2012) as cited in Wong (2013) has suggested the use of "Composite Reliability" has no replacement.

The composite reliability is used to assess whether the sample is truly free from bias or if the responses– on the whole – are reliable. Composite reliability coefficients between 0.60 and 0.70 are considered appropriate in exploratory studies, while coefficients of 0.70 and 0.90 are considered satisfactory for the other types of research (Hair *et al*., 2014). Table 4.12 shows that the composite reliability of the model is well established. From Table 4.12, such values are shown to be larger than 0.6, so high levels of internal consistency reliability have been demonstrated among all nine (9) reflective latent variables.

4.3.4.4 Convergent validity

Table 4.13 Discriminant validity of research measure

	authoritarian leader	challenges of project leaders	charismatic l.s.	Democratic l.s	laissez faire l.s	Perform. of water project	project leader	Transactional l.s	Transformational l.s
authoritarian leader	0.951								
challenges of project leaders	0.978	0.952							
charismatic l.s.	0.967	0.978	0.967						
Democratic l.s	0.982	0.958	0.949	0.948					
laissez faire l.s	0.944	0.956	0.908	0.915	0.960				
performance of water project	0.973	0.979	0.970	0.969	0.949	0.913			
project leader	0.976	0.975	0.959	0.978	0.949	0.974	0.950		
transactional	0.968	0.970	0.960	0.983	0.916	0.969	0.983	0.943	
transformational	0.972	0.966	0.967	0.984	0.896	0.975	0.973	0.985	0.955

To check convergent validity, each latent variable's Average Variance Extracted (AVE) is evaluated. From table 4.13, it was found that all the AVE values are greater than the acceptable threshold of 0.5 therefore, convergent validity is confirmed. To ensure that individual constructs are truly distinct from each other, discriminant validity assessment is conducted.

According to Fornenell and Larcker (1981) as cited in Thangiah *et al.* (2019) that the square root of AVE in each construct must be larger than other correlation values between other constructs. Table 4.13 depicts the assessment of discriminant validity for this research construct. The square roots of AVE of each construct which are highlighted are larger than the correlation estimates of the factors (Thangiah *et al.*, 2019). This indicates that all the constructs exhibit discriminant validity that distinct from one another. Table 4.13 depicts another method of assessing the discriminant validity which is provided in the PLS-SEM software. According to Henseler *et al.* (2014) as cited in Thangiah *et al.* (2019) proposed a HTMT value between the range -1 and 1 ($-1 < HTMT < 1$) and any constructs which has the value between the range -1 and 1 are consider to have discriminant validity achieved.

In this conceptual framework all the values between each construct are within the range -1 and 1. Hence the discriminant validity is achieved. Table 4.13 result indicated that discriminant validity is well established. Thus, the model showed an adequate convergent validity and discriminant validity.

4.3.5 Projects Characteristics

As mentioned in Literature, water projects covered in this study had different characteristics in terms of completion time, functionality, affordability, complexity and quality as detailed in the following sections.

4.3.5.1 Project Performance

In this study, project performance was evaluated in terms of project time, functionality, affordability, complexity and quality performance.

Table 4.14: Distribution of Projects by Performance evaluation

Water project Performance evaluation	Loading	Outer weight	Collinearity statistics (VIF)
Functionality			
11g -Water project are rarely constructed where it is needed.	0.915	0.209	6.383
Time			
11h - Water project mostly over-run its allocated time frame.	0.907	0.224	5.934
Quality			
11i - Water project mostly provide water fit for use that meet consumption requirement.	0.938	0.227	7.380
Affordability			
11j - Water project regularly over-run its allotted cost schedule.	0.952	0.228	8.766
Complexity			
11k -Water project complexity requires high skilled professional.	0.851	0.206	2.959

Table 4.14 shows that loadings for water project performance were above 0.50 which signifies that all the loadings are acceptable for the study. Table 4.14 also, shows Collinearity Statistics (VIF) tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 indicates a multi-collinearity problem therefore complexity performance of water project has Collinearity statistics (VIF) 2.959 which indicated that there is a linear relationship between performance of water projects and complexity factor of water project.

4.4 Relationship among Variables of Construct Measures

In the analysis of the relationship among the study variables, PLS-SEM uses F Square to calculate correlation between variables. The absolute value of the correlation

coefficient (r) provided a measure of the strength of the relationship between the variables. The computed correlation coefficients among the variables are presented in Table 4.15.

4.4.1 F. Square Result of Correlation

The results in table 4.15 below shows varied degree of interrelationship among the study variables.

Table 4.15: Correlation between Project leadership styles, Project leadership, challenges of project leadership and performance of water project

	Autocratic L.S.	Challenges of project leadership	Charismatic L.S.	Democratic L.S.	Laissez-faire L.S.	Performance of water project	Project Leadership
Autocratic leadership style		0.108					0.002
Challenges of project leadership						0.490	
Charismatic leadership style		0.237					0.016
Democratic leadership style		0.187					0.030
Laissez-faire leadership style		0.606					0.417
Performance of water project							
Project Leadership		0.016				0.252	
Transactional leadership style		0.139					0.157
Transformational leadership s.		0.121					0.006

4.4.2 Relationship between Project leadership style and identified challenges of project leadership

Table 4.15 shows that there exists a strong statistically significant positive relationship between; charismatic leadership style and Identified challenges of project leadership (r= 0.237, p > 0.15), Democratic leadership style with identified challenges of project leadership have correlation coefficient (r) = 0.187, p > 0.15.

Laissez-faire leadership style with Identified challenges of project leadership have correlation coefficient (r) = 0.606 p > 0.15. A statistically significant negative relationship exists between transactional leadership and identified challenges of project leadership with correlation coefficient (r) = 0.139, p < 0.15. Also, negative relationship exists between transformation leadership style and identified challenges of project leadership with correlation coefficient (r) = 121, p < 0.15.

4.4.3 Relationship between performance of water project and other construct measure variable

Table 4.15 shows that there exists a strong statistically significant positive relationship between performance of water project and identified challenges of project leadership (r = 0.490, p > 0.15). Also, table 4.16 shows that performance of water project has correlation coefficient (r) = 0.252, p > 0.15 with project leadership.

4.4.4 Relationship between project leadership and other variables

Table 4.15 shows further that positive relationship exist between; Project leadership and laissez-faire leadership style (r = 0.417, p > 0.15), project leadership and transactional leadership style (0.157, p > 0.15).

Furthermore, there exist negative relationship between; Project leadership and authoritarian leadership style (r=0.002, p < 0.15), Project leadership and democratic leadership style (r=0.030, p < 0.15), Project leadership and transformational leadership

style (r=0.006, p < 0.15). Also there exist a negative relationship between Project leadership and challenges of identified project leadership (r=0.016, p < 0.15).

4.5 Structural Path Significance in Bootstrapping

SmartPLS can generate T-statistics for significance testing of both the inner and outer model, using a procedure called bootstrapping. In this procedure, a large number of subsamples (e.g., 5000) are taken from the original sample with replacement to give bootstrap standard errors, which in turn gives approximate T-values for significance testing of the structural path. The Bootstrap result approximates the normality of data. Using a two-tailed t-test with a significance level of 5%, the path coefficient will be significant if the T-statistics is larger than 1.96.

The dimension sub-factors that subsidized smallest to the latent constructs were then detached from the dimension model to improve the model fit. To address the study objectives, three research hypotheses were tested and the results are presented in this section. In each of the analysis, R square and adjusted R square have been reported. However, in order to avoid over-stating of the model predictive power as the number of predictors increases, the study adopted the use of adjusted R square. In addition, F test was used to determine the statistical significance of the resulting STEM-PLS Model while t-test was used to test the significance of each of the model coefficients.

4.5.1 Relationship between Project leadership style and performance of water projects

Once the bootstrapping procedure is completed, the “Path Coefficients (Mean, STDEV, T-Values) indicate the “T-Statistics” column to see if the path coefficients of the inner model are significant or not. Using a two-tailed t-test with a significance level of 5%, the path coefficient will be significant if the T-statistics is larger than 1.96.

Table 4.16: Relationship between project leadership style and performance of water project

Latent Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (S.D)	T Statistics (IO/STDEVI)	P Values
Authoritarian L.S -> Challenges of project leadership	0.305	0.308	0.080	3.799	0.000
Authoritarian L.S -> Project Leadership	-0.047	-0.052	0.082	0.570	0.569
Challenges of project leader. -> Perform. of water project	0.576	0.575	0.055	10.427	0.000
Charismatic L.S -> Challenges of project leadership	0.287	0.287	0.050	5.781	0.000
Charismatic L.S -> Project leadership	0.088	0.084	0.047	1.853	0.065
Democratic L.S -> Challenges of project leadership	-0.456	-0.458	0.083	5.466	0.000
Democratic L.S -> Project leadership	0.218	0.221	0.096	2.274	0.023
Laissez-faire L.S -> Challenges of project leadership	0.347	0.347	0.034	10.296	0.000
Laissez-faire L.S -> Project leadership	0.291	0.288	0.031	9.422	0.000
Project Leadership -> Challenges of project leadership	-0.105	-0.106	0.067	1.569	0.117
Project Leadership -> Performance of water project	0.413	0.414	0.055	7.568	0.000
Transactional L.S -> Challenges of project leadership	0.321	0.319	0.060	5.327	0.000
Transactional L.S -> Project leadership	0.382	0.387	0.067	5.744	0.000
Transformational L. S -> Challenges of project leadership	0.317	0.317	0.071	4.451	0.000
Transformational L.S -> Project leadership	0.081	0.086	0.077	1.059	0.290

4.5.2 Relationship between project leadership style and performance of water Project

The first objective was to identify style that improves the performance of water project in Nigeria with the null hypothesis that performance of water project is not affected by project leadership style in Nigeria. In order to determine the contribution of each of the leadership style towards water project performance, SmartPls bootstrapping analysis was carried out.

Table 4.17: Total indirect effect of dependent variable on the independent variable

Relationship between construct Measures Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (SD)	T Statistics (|O/STDEV|)	P Values
Authoritarian L.S. -> Performance of Water Project	0.159	0.156	0.052	3.054	0.002
Charismatic L.S. -> Performance of Water Project	0.196	0.196	0.041	4.782	0.000
Democratic L.S. -> Performance of Water Project	-0.186	-0.183	0.059	3.162	0.002
Laissez-faire L.S. -> Performance of Water Project	0.302	0.302	0.016	18.851	0.000
Transactional L.S. -> Performance of Water Project	0.32	0.319	0.043	7.458	0.000
Transformational L.S. -> Performance of Water Project	0.211	0.212	0.043	4.883	0.000

Table 4.17 shows analysis response of relationship between project leadership styles and performance of water project in Nigeria. It was discovered that; Authoritarian project leadership style - performance of water project relationship has STDEV of 0.052 (T-Stat. = 3.054), Charismatic project leadership style - performance of water project relationship has STDEV of 0.041 (T-Stat. = 4.782), Democratic project leadership style - performance of water project relationship has STDEV of 0.059 (T-Stat. = 3.162), Laissez-faire project leadership style - performance of water project relationship has STDEV of 0.016 (T-Stat. = 18.851), Transactional project leadership style - performance of water project relationship has STDEV of 0.043 (T-Stat. = 7.458), Transformational project leadership style - performance of water project relationship has STDEV of 0.043 (T-Stat. = 4.883).

Findings in table 4.2 signifies that there is a significant positive relationship between project leadership style (Authoritarian, Charismatic, Democratic, Laissez-faire, Transactional, And Transformational). It was also revealed that relationship between performance of water project and Laissez-faire with Transactional project leadership style with STDEV of 0.016 (T-Stat. = 18.851) and STDEV of 0.043 (T-Stat. = 7.458) respectively has the strongest significant relationship to improve the performance of water project in Nigeria.

4.5.3 Relationship between identified challenges of project leaders, project leadership style and Project Leadership Style.

The second objective was to examine the challenges of identified project leadership style in the execution of water project in Nigeria with null hypothesis that performance of water project is not affected by identified challenges of project leadership style in Nigeria.

Table 4.18 Categories of identified challenges of project leadership style

Categories	Identified challenges of project leadership style
Identified of challenges project leadership style 1	13a - Experience of team members
	13b - Risk minimization
	13c - Inadequate communication
	13d - Managing stakeholder's expectation
	13e - Managing Project changes
Identified of challenges project leadership style 2	13f - Providing clarity on project direction
	13g - Managing unrealistic deadlines
	13h - Managing scope creep
	13i - Insufficient team skills
	13j - Poorly defined goals and objectives
Identified of challenges project leadership style 3	13k - Managing teamwork
	13l - Lack of accountability
	13m - Managing estimated expenses
	13n - Lack of trust
	13o - Presence of conflict and tension
Identified of challenges project leadership style 4	13p - Improper flow of information
	13q - Low team commitment and engagement
	13r - Lack of transparency
	13s - Long-term thinking

Table 4.19: Relationship between identified challenges of project leadership style, project leadership style and performance of water project

Relationship between construct Measures Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (SD)	T Statistics (|O/SD|)	P Values
Authoritarian L.s. -> Identified challenges of project leader 1	0.156	0.159	0.117	1.338	0.182
Authoritarian L.s. -> Identified challenges of project leader 2	0.360	0.360	0.098	3.671	0.000
Authoritarian L.s. -> Identified challenges of project leader 3	0.776	0.777	0.087	8.904	0.000
Authoritarian L.s. -> Identified challenges of project leader 4	0.493	0.495	0.081	6.064	0.000
Identified challenges of project leader 1 -> Project Performa.	0.459	0.434	0.069	6.697	0.000
Identified challenges of project leader 2 -> Project Performa.	-0.137	-0.079	0.15	0.914	0.361
Identified challenges of project leader 3 -> Project Performa.	0.495	0.407	0.164	3.010	0.003
Identified challenges of project leader 4 -> Project Performa.	0.168	0.226	0.190	0.886	0.376
Charismatic L.s.-> Identified challenges of project leader 1	0.165	0.170	0.061	2.721	0.007
Charismatic L.s. -> Identified challenges of project leader 2	-0.035	-0.039	0.062	0.568	0.570
Charismatic L.s. -> Identified challenges of project leader 3	0.404	0.404	0.067	6.057	0.000
Charismatic L.s. -> Identified challenges of project leader 4	0.185	0.189	0.060	3.094	0.002
Democratic L.s.-> Identified challenges of project leader 1	-0.263	-0.266	0.106	2.480	0.013
Democratic L.s. -> Identified challenges of project leader 2	-0.602	-0.601	0.109	5.500	0.000
Democratic L.s. -> Identified challenges of project leader 3	-0.839	-0.837	0.110	7.661	0.000
Democratic L.s. -> Identified challenges of project leader 4	-0.640	-0.635	0.108	5.906	0.000
Laissez Faire L.s. -> Identified challenges of project leader 1	0.215	0.216	0.045	4.753	0.000
Laissez Faire L.s. -> Identified challenges of project leader 2	0.492	0.493	0.034	14.561	0.000
Laissez Faire L.s.-> Identified challenges of project leader 3	0.131	0.131	0.029	4.511	0.000
Laissez Faire L.s. -> Identified challenges of project leader 4	0.287	0.287	0.033	8.620	0.000
Transactional L.s. -> Identified challenges of project leader 1	-0.004	-0.011	0.089	0.049	0.961
Transactional L.s.-> Identified challenges of project leader 2	0.369	0.367	0.076	4.849	0.000
Relationship between construct	**Original**	**Sample**	**Standard**	**T**	**P**

Measures Variables	Sample (O)	Mean (M)	Deviation (SD)	Statistics (|O/SD|)	Values
Transactional L.s.-> Identified challenges of project leader 3	0.381	0.379	0.068	5.585	0.000
Transactional L.s.-> Challenges of project leader 4	0.482	0.476	0.067	7.145	0.000
Transform. L. S._ -> Identified challenges of project leader 1	0.736	0.737	0.118	6.232	0.000
Transform. L. S._ -> Identified challenges of project leader 2	0.423	0.427	0.090	4.708	0.000
Transform. L. S._ -> Identified challenges of project leader 3	0.141	0.140	0.099	1.425	0.155
Transform L. S._ -> Identified challenges of project leader 4	0.198	0.193	0.083	2.390	0.017

4.5.4 Relationship between identified challenges of project leaders and project leadership style

Result of analysis in table 4.18 and table 4.19 shows the relationship between categorized identified challenges of project leaders and project leadership style as follows for:

Authoritarian project leadership style; Authoritarian project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.117 (T-Stat. = 1.338), Authoritarian project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.098 (T-Stat. = 3.671), Authoritarian project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.087 (T-Stat. = 8.904), Authoritarian project leadership style - Identified challenges of project leader category 4 relationship has STDEV of 0.081 (T-Stat. = 6.064). It was discovered that there is a significant positive relationship between Authoritarian project leadership style with Identified challenges of project leaders' category 2, Identified challenges of project leaders' category 3 and C Identified challenges of project leaders' category 4.

Charismatic project leadership style; Charismatic project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.061 (T-Stat. =

2.721), Charismatic project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.062 (T-Stat. = 0.568), Charismatic project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.067 (T-Stat. = 6.057), Charismatic project leadership style - Identified challenges of project leader category 4 relationship has STDEV of 0.06 (T-Stat. = 3.094).

It was discovered that there is a significant positive relationship between Charismatic project leadership style with Identified challenges of project leaders' category 1, Identified challenges of project leaders' category 3 and Identified challenges of project leaders' category 4.

Democratic project leadership style; Democratic project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.106 (T-Stat. = 2.48), Democratic project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.109 (T-Stat. = 5.5), Democratic project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.11 (T-Stat. = 7.661), Democratic project leadership style - Identified challenges of project leader category 4 relationship has STDEV of 0.108 (T-Stat. = 5.906). It was discovered that there is a significant positive relationship between Democratic project leadership style with Identified challenges of project leaders' category 1, Identified challenges of project leaders' category 2, Identified challenges of project leaders' category 3 and Identified challenges of project leaders' category 4.

Laissez-Faire project leadership style; Laissez-Faire project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.045 (T-Stat. = 4.753), Laissez-Faire project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.034 (T-Stat. = 14.561), Laissez-Faire

project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.029 (T-Stat. = 4.511). Also, Laissez-Faire project leadership style - Identified challenges of project leader category 4 relationship has STDEV of 0.033 (T-Stat. = 8.62). It was discovered that there is a significant positive relationship between Laissez-Faire project leadership style with Identified challenges of project leaders' category 1, Identified challenges of project leaders' category 2, Identified challenges of project leaders' category 3 and Identified challenges of project leaders' category 4.

Transactional project leadership style; Transactional project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.089 (T-Stat. = 0.049), Transactional project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.076 (T-Stat. = 4.849), Transactional project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.068 (T-Stat. = 5.585), Transactional project leadership style - Identified challenges of project leader category 4 relationship has STDEV of 0.067 (T-Stat. = 7.145). It was discovered that there is a significant positive relationship between Transactional project leadership style with Identified challenges of project leaders' category 2, Identified challenges of project leaders' category 3 and Identified challenges of project leaders' category 4.

Transformational project leadership style; Transformational project leadership style - Identified challenges of project leader category 1 relationship has STDEV of 0.118 (T-Stat. = 6.232), Transformational project leadership style - Identified challenges of project leader category 2 relationship has STDEV of 0.09 (T-Stat. = 4.708), Transformational project leadership style - Identified challenges of project leader category 3 relationship has STDEV of 0.099 (T-Stat. = 1.425), Transformational project leadership style - Identified challenges of project leader category 4 relationship has

STDEV of 0.083 (T-Stat. = 2.39). It was discovered that there is a significant positive relationship between Transformational project leadership style with Identified challenges of project leaders' category 1, Identified challenges of project leaders' category 2 and Identified challenges of project leaders' category 4.

4.5.5 Relationship between identified challenges of project leadership style and performance of water project.

Identified challenges of project leader 1 - Performance of water project relationship has STDEV of 0.069 (T-Stat. = 6.697), Identified challenges of project leader 2 - Performance of water project relationship has STDEV of 0.15 (T-Stat. = 0.914), Challenges of project leader 3 - Performance of water project relationship has STDEV of 0.164 (T-Stat. = 3.01), Identified challenges of project leader 4 - Performance of water project relationship has STDEV of 0.19 (T-Stat. = 0.886).

It was discovered that there is a significant positive relationship between Performance of water project with Identified challenges leaders' category 1 and Identified challenges of project leaders' category 3 which signifies that there exist a positive and functional relationship between:

1. Authoritarian project leadership style and Identified challenges of project leaders' category 3,
2. Charismatic project leadership style with Identified challenges of project leaders' category 1 and Identified challenges of project leaders' category 3.
3. Democratic project leadership style with Identified challenges of project leaders' category 1 and Identified challenges of project leaders' category 3.
4. Laissez-Faire project leadership style with Identified challenges of project leaders' category 1 and Identified challenges of project leaders' category 3.
5. Transactional project leadership style with Identified challenges of project leaders' category 3.

6. Transformational project leadership style with Identified challenges of project leaders' category 1.

4.5.6 Relationship between Project Leadership style and performance of water Project.

The third objective was to examine the relationship between project leadership style and performance of water projects in Nigeria with null hypothesis that performance of water project does not have a relationship with project leadership style in Nigeria. Table 4.21: Show analysis response of project leadership style, project leadership and identified challenges of project leadership style with project leadership variable on performance of water project in Nigeria.

Table 4.20: Relationship between all construct measuring variables.

Relationship between construct Measures Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (SD)	T Statistics (|O/SD|)	P Values
Authoritarian L.S. -> Project Leader -> Challenges of project leaders	0.005	0.005	0.01	0.482	0.63
Charismatic L.S. -> Project Leader -> Challenges of project leadership	-0.009	-0.008	0.007	1.252	0.211
Democratic L.S. -> Project Leader -> Challenges of project leader	-0.023	-0.022	0.017	1.348	0.178
Laissez-faire L.S. -> Project Leader -> Challenges of project leader	-0.031	-0.03	0.019	1.579	0.115
Transactional L.S. -> Project Leader -> Challenges of project leader	-0.04	-0.04	0.027	1.472	0.142
Transformational L.S. -> Project Leader -> Challenges of project leader	-0.009	-0.009	0.012	0.74	0.459
Authoritarian L.S. -> Challenges of project leader -> Perform of Water Project	0.176	0.174	0.041	4.322	0
Charismatic L.S. -> Challenges of project leadership -> Perform of Water Project	0.165	0.167	0.036	4.599	0
Democratic L.S. -> Challenges of project leadership -> Perform of Water Project	-0.263	-0.261	0.046	5.723	0
Laissez-faire L.S. -> Challenges of project leadership -> Perform of Water Project	0.2	0.198	0.026	7.603	0
Authoritarian L.S. -> Project Leader -> Challenges of project leader -> Perform of Water Project	0.003	0.003	0.006	0.503	0.615
Charismatic L.S. -> Project Leader -> Challenges of project leader -> Perform of Water Project	-0.005	-0.005	0.004	1.296	0.196
Democratic L.S. -> Project Leader -> Challenges of project leader -> Perform of Water Project	-0.013	-0.012	0.01	1.391	0.165
Laissez-faire L.S. -> Project Leader -> Challenges of project leader -> Perform of Water Project	-0.018	-0.017	0.011	1.661	0.097
Transactional L.S. -> Project Leader-> Challenges of project leadership -> Perform of Water Project	-0.023	-0.023	0.016	1.493	0.136
Project Leadership -> Challenges of project leadership ->	-0.061	-0.058	0.037	1.651	0.099

Performance of Water Project					
Transformational L.S. -> Project Leader -> Challenges of project leaders -> Perform of Water Project	-0.005	-0.005	0.006	0.785	0.433
Transactional L.S. -> Challenges of project leadership -> Performance of Water Project	0.185	0.181	0.035	5.294	0
Transformational L.S. -> Challenges of project leadership -> Performance of Water Project	0.183	0.182	0.04	4.569	0
Authoritarian L.S. -> Project Leadership -> Performance of Water Project	-0.019	-0.023	0.035	0.548	0.584
Charismatic L.S. -> Project Leadership -> Perform of Water Project	0.036	0.037	0.02	1.8	0.072
Democratic L.S. -> Project Leadership -> Perform of Water Project	0.09	0.095	0.044	2.037	0.042
Laissez-faire L.S. -> Project Leadership -> Perform of Water Project	0.12	0.121	0.024	5.02	0
Transactional L.S. -> Project Leadership -> Perform of Water Project	0.158	0.156	0.032	4.967	0
Transformational L.S. -> Project Leadership -> Performance of Water Project	0.034	0.035	0.034	0.991	0.322

Results of analysis in table 4.20 shows that the calculated T-Statistics for Authoritarian Leadership style -> Project Leadership -> Challenges of project leadership relationship (0.482), Charismatic Leadership style -> Project Leadership -> Challenges of project leadership relationship (1.252), Democratic Leadership style -> Project Leadership -> Challenges of project leadership relationship (1.348), Laissez-faire Leadership style -> Project Leadership -> Challenges of project leadership relationship (1.579), Transactional Leadership style -> Project Leadership -> Challenges of project leadership relationship (1.472), Transformational Leadership style -> Project Leadership -> Challenges of project leadership relationship (0.74), Authoritarian Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (4.322), Charismatic Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (4.599), Democratic Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (5.723), Laissez-faire Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (7.603), Authoritarian Leadership style -> Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (0.503), Charismatic Leadership style -> Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (1.296), Democratic Leadership style -> Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (1.391), Laissez-faire Leadership style -> Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (1.661), Transactional Leadership style -> Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (1.493), Project Leadership -> Challenges of project leadership -> Performance of Water Project relationship (1.651), Transformational Leadership style -> Project Leadership ->

Challenges of project leadership -> Performance of Water Project relationship (0.785), Transactional Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (5.294), Transformational Leadership style -> Challenges of project leadership -> Performance of Water Project relationship (4.569), Authoritarian Leadership style -> Project Leadership -> Performance of Water Project relationship (0.548), Charismatic Leadership style -> Project Leadership -> Performance of Water Project relationship (1.8), Democratic Leadership style -> Project Leadership -> Performance of Water Project relationship (2.037), Laissez-faire Leadership style -> Project Leadership -> Performance of Water Project relationship (5.02), Transactional Leadership style -> Project Leadership -> Performance of Water Project relationship (4.967), Transformational Leadership style -> Project Leadership -> Performance of Water Project relationship (0.991).

This means that there is a significant relationship between performance of water project in Nigeria and Democratic Leadership style (2.037, >1.90), Laissez-faire Leadership style (5.02, >1.90) and Transactional Leadership style (4.967, >1.90) which signifies that performance of water project in Nigeria is improved by Laissez-faire, Transactional and Democratic leadership style. It is also observed that all project leadership style is associated with either category 1 or/and category 3 of identified challenges of leadership.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study was carried out to achieve three objectives. Firstly, to identify the leadership styles that improves the performance of water project in Nigeria with hypothesis construct that performance of water project is not affected by project leadership styles in Nigeria. Secondly, to examine the challenges of identified project leadership style in the execution of water project in Nigeria with hypothesis construct that performance of water project is not affected by the challenges faced by identified project leadership style in Nigeria. Lastly, to examine the relationship between Project leadership and project performance in the execution of water projects in Nigeria with hypothesis that performance of water project does not have a relationship with project leadership in Nigeria. The study in achieving its first objective found out that Laissez-faire leadership style, Transactional leadership style and Democratic leadership style are project leadership styles that improves performance of water project in Nigeria. Therefore, the study submitted that performance of water project in Nigeria is affected by project leadership styles. The study in achieving its second objective found out that Identified challenges of project leadership category 1 (Experience of team members, Risk minimization, inadequate communication, managing stakeholder's expectation, Managing Project changes) and Identified challenges of project leadership category 3 (Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust, Presence of conflict and tension) affect the performance of water projects in Nigeria.

In achieving the study third objective, findings prove that there is a significant relationship between project leadership and performance of water projects in Nigeria. Thus, performance of water project has a relationship with project leadership in Nigeria. This study concludes that laissez-faire leadership style, Transactional leadership style and Democratic leadership style are project leadership styles that improves the performance of water project in Nigeria. The study also, concludes that Authoritarian Leadership style is associated with Identified challenges of project leadership category 3 (Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust, Presence of conflict and tension), democratic Leadership style is associated with Identified challenges of project leadership category 1 and 3 (Experience of team members, Risk minimization, inadequate communication, Managing stakeholder's expectation, Managing Project changes, Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust and Presence of conflict and tension), laissez-faire Leadership style is associated with Identified challenges of project leadership category 1 and 3 (Experience of team members, Risk minimization, inadequate communication, Managing stakeholder's expectation, Managing Project changes, Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust and Presence of conflict and tension), Charismatic Leadership style is associated with Identified challenges of project leadership category 1 and 3 (Experience of team members, Risk minimization, inadequate communication, Managing stakeholder's expectation, Managing Project changes, Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust and Presence of conflict and tension), Transactional Leadership style is associated with Identified challenges of project leadership category 3 (Managing teamwork, Lack of accountability, managing estimated expenses, Lack of trust, Presence of conflict and tension).

Furthermore, Transformational Leadership style is associated with Identified challenges of project leadership category 1 (Experience of team members, Risk minimization, inadequate communication, managing stakeholder's expectation, and Managing Project changes).

The findings of this research attest to Xiong (2008) position that project leadership is of high importance and also, an essential factor in proper project management. Therefore, project leadership is an essential factor for water project performance in Nigeria.

5.2 Recommendations

In view of research findings, the following recommendations are made that:

1. A proper project leadership structure should be put in place at water project initiation stage to drive project performance during and after project execution.
2. Laissez-faire leadership style, Transactional leadership style and Democratic leadership style are suitable project leadership style for improving performance of water project in Nigeria when properly adopted.
3. Mechanism to improve trust and communication among project team members should be put in place to enhance water project performance in Nigeria.
4. Project team members experience is vital to curtail the complexity of water project in Nigeria.
5. Project expenses should be properly estimated to encourage accountability.
6. Teamwork and project changes must be properly managed to minimize project risk.
7. Information must be properly channel to manage stakeholder's expectation and commitment.
8. Conflict and tension control mechanism should be put in place to manage Long-term thinking and experience of project team members.

5.3 Contribution to Knowledge

Findings of this study would go a long way to improve literature and assist project professionals, Project policy makers and project teams in water sector especially government that:

- Establishment of policies to regulate water project leadership structures before initiating water projects will greatly affect the delivery of water projects in Nigeria.
- Establishment of control measures to challenges of identified project leadership (Experience of team members, Risk minimization, inadequate communication, managing stakeholder's expectation, managing project changes, managing teamwork, lack of accountability, managing estimated expenses, lack of trust and presence of conflict and tension) will improve the performance and delivery strategies of water projects in Nigeria.
- Water project professionals should be influence with the establishment of laissez-faire project leadership style to handle project complexity and periodical review of Project leadership style of water project should be done to improve performance of water projects in Nigeria.

REFERENCES

Adair, J. (1983). Effective leadership: A self-development manual. Aldershot, UK: Gower.

Agarwal, N. & Rathod, U. (2006). Defining Success for Software Projects: An exploratory Revelation. *International Journal of Project Management*, 24(4), 358-370;

Ahsan N., Ghafoor M. M. & Yasin M. (2016). The Impact of Project Leadership and Team Work on Project Success, *International Journal of Humanities and Social Science,* Vol. 6, No. 11;

Akpabio, E. M. (2012). Water Supply and Sanitation Services Sector in Nigeria: The Policy Trend and Practice Constraints. ZEF Working Paper Series, Department of Political and Cultural Change Center for Development Research, University of Bonn Editors: Joachim von Braun, Manfred Denich, Solvay Gerke, Anna-Katharina Hornidge and Conrad Schetter

Akpe, A. (2012). Nigeria: President Promises Water, Slashes Budget. Business Day newspaper, March 31, 2012.

Anantatmula, V. S. (2010). Project Manager Leadership Role in Improving Project Performance. *Engineering Management Journal, 22(1), pp.13–22.*

Armandi, B., Oppedisano, J. & Sherman, H. (2003), Leadership theory and practice: A "case" in point', Management Decision, 41/10, pp.1076-1088.

Assaf, S. & Al-Hejji, S. (2006). Causes of delays in large construction projects. *International Journal of Project Management, 24(4), 349-357.*

Atkinson, R. (1999). Project management: Cost, time and quality, two best guesses and a phenomenon, it's time to accept other success criteria. *International Journal of Project Management,* 17(6), 337- 342.

Avolio, B. J., Walumbwa, F.O. & Weber, T.J. (2009). Leadership: Current theories, research, and future directions. Annual Review of Psychology, 60(1), pp. 421–449.

Bagozzi, R. P. & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16(1), 74–94.*

Bass, B. M. (2009). Bass and Stogdhill's handbook of leadership: Theory, research & managerial applications. New York. Free Press

Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics,* 18(3), 19-31.

Bass, B. M. (1985). *Leadership and performance beyond expectations.* Free Press, Collier Macmillan.

Bass, B. M. (1981), *Stogdill's Handbook of "Leadership: A survey of Theory and Research."* New York, NY: The Free Press

Bass, B. M., & Avolio, B. J. (1994). Transformational leadership and organizational culture. *Public Administration Quarterly,* 17 (1), 112-117.

Benator B. & Thumann A. (2003). *Project Management and Leadership Skills for Engineering and Construction Projects,* Marcel Dekker, Inc. New York

Bennett, H. (2000). 10 Typical Project Management Challenges Faced by Businesses retrieved from https://www.keyedin.com/article/10-typical-project-management-challenges-faced-by businesses/

Bennis W.G. & Nanus B., Leaders: *The strategies for taking charge,* (HarperCollins, (2007)

Berg, M. E., & Karlsen, J. T. (2007). *Mental models in project management coaching. Engineering Management Journal,* 19(3), 3-14.

Blake, R. R. & McCanse, J. S. (1991), *"The managerial grid illuminated: Leadership dilemmas grid solutions",* Houston, TX: Gulf.

Blake, R. R., & Mouton, S. J. (1978). The new managerial grid. Houston, TX: Gulf.

Bucia, T., Robinson, L. & Ramburuth, P. (2010). Effects of leadership style on team learning. *Journal of Workplace Learning, 22 (4), 228-248.*

Burns, J. M., (1978), Leadership, N.Y, Harper and Row.

Carroll B., Lester L. & David R (2008). Leadership as Practice: Challenging the Competency Paradigm, *Leadership* Volume 4, No. 4, pp 363-379.

Ceric, A. (2011). Minimizing communication risk in construction projects: A delphi study of the key role of projects managers, working paper proceedings. Engineering Projects Organizations Conference, Estes Park, Colorado, August 9-11.

CESCR (Committee on Economic, Social and Cultural Rights) (2002). General Comment No. 15, The Right to Water, UN Doc. E/C.12/2002/11.

Chase R. B., Aquilano N. J. & Jacobs F. R. (2001). *Operations management for competitive advantage.* 9th Edition. McGraw-Hill Companies, Inc.

Cheng, J., Proverbs, D. G. & Oduoza, C. F. (2006). The satisfaction levels of UK construction clients based on the performance of consultants. Engineering, *Construction Architectural Management,* 13 (6), 567 -583.

Chervier, S. (2003). Cross-cultural management in multinational project groups. *Journal of World Business*, 38 (2), 141-149.

Chukwu, K. E. (2015). Water Supply Management Policy in Nigeria: Challenges in the Wetland Area of Niger Delta, *European Scientific Journal,* Sept, Nigeria, 11, 303-323

Cleland, D. I. & Ireland, L.R. (2007). *Project manager's handbook: Applying best practices across global industries.* New York: McGraw-Hill.

Cole, G. A. (1996). *Management: Theory and practice,* 5th Ed. Ashford Color Press: London

Cookie-Davies, T. (2002). The real success factors on projects. *International Journal of Project Management*, 20 (3), 185-190.

Crawford, L., Pollack, J. & England, D. (2006). Uncovering the trends in project management: Journal emphases over the last 10 years. *International Journal of Project Management,* 24(2), 175 -184.

DeMarco T. & Lister T. (2013), *Peopleware: Productive Projects and Teams,* Addison Wesley; 3rd edition

Drucker Peter Ferdinard (2006). The effective leadership and effectiveness.

Dulewicz, V. & Higgs, M. (2005). Assessing leadership dimensions, styles and organizational context. *Journal of Managerial Psychology,* 20 (2), 105–123.

Dulewicz, V. & Higgs, M. J. (2003). Design of a new instrument to assess leadership dimensions and styles.

Egbinola, C. N. (2017). Trend in Access to Safe Water Supply in Nigeria. *Journal of Environment and Earth Science. Nigeria,* Vol.7, No.8,

Elliot, R. & Kimotho, J. (2013). *Sangailu water project,* Kenya. Retrieved April 5, 2014 from http://www.gov.gg/CHttpHandler.ashx?id=82849&p=0

Ellemers, N., DeGilder, D. & Haslam, S. A. (2004). Motivating individuals and groups at work: A social identity perspective on leadership and group performance. *Academy of Management Review*, 29(3), 459-478.

Emoabino I. U. & Alayande A. W. (2007). *Water Demand Management, Problems and Prospects of Implementations in Nigeria*. Being Paper Presented at National Water Resources Institute, Kaduna, and Nigeria. Retrieved on 27 May, 2010 from Encyclopaedia Dictionaries & Glossaries (n.d), Definition of Water Management.

Eric W, Huey-Wen C & James J (2005). The impacts of charismatic leadership style on team cohesiveness and overall performance during ERP implementation, *Int. J. of Project Management,* 23(3): 173-180.

Faith N. M., (2018). The Effect of Project Management Leadership On Performance of Compassion International Projects in Kitui County, Kenya, Published Master Thesis, Kenyatta University, July.

Federal Ministry of Water Resources (FMWR) (2014). The project for review and update of Nigeria, National water resources master plan. Federal Republic of Nigeria. National water resources master plan 2013. Japan International Cooperation Agency (JICA). Vol. 6

Federal Republic of Nigeria (2004). National Water Policy, July 2004

Felfe, J., Tartler, K. & Liepmann, D. (2004). Applied research in the field of transformational leadership. *German Journal of Research in Human Resource Management,* 18 (4), 262 - 288.

Fiedler, F. E. (1967). A theory of leadership effectiveness.New York: McGraw-Hill.

Flint, M. & Hearn, V. E. (2016) 10 common problems project teams face. Retrieved from https://www.apm.org.uk/blog/10-common-problems-project-teams-face/

Fornell C. & Larcker D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research,* 18: 39-50.

Frame, J. D. (1987). *Managing projects in organizations.* San Francisco: Jossey Bass.

Gadirajurrett, H., Srinivasan, R., Stevens, J. & Jeena, N. (2018), *"Impact of Leadership on Team's Performance".Engineering and Technology Management Student Projects,* published Thesis,. Portland State University, 1912.

Gay, L. R. (1996). *Educational research: Competencies for analysis and application.* Merrill, Upper Saddle River, NJ.

Gebrehiwot, M. (2014). *An Assessment of Challenges of Sustainable Rural Water Supply: The Case of OflaWoreda in Tigray Region.* Msc Thesis, Regional and Local Development Study (RLDS). A.A.U. Ethiopia.

Goleman, D., Boyatzis, R. & McKee, A. (2002). The New Leaders. Boston: Harvard Business School Press.

Gowan, J. & Mathieu, R. (2005). The importance of management practices in IS project performance: An empirical study. *Journal of Enterprise Information Management,* 18 (2), 235–255.

Hackman, M. Z. & Johnson, C. E. (2004), *Leadership: A communication perspective* (4th Ed.). Long Grove, IL: Waveland Press.

Hair, J. F., Sarstedt, M., Ringle, C. M. & Mena, J. A., (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science,* 40(3), 414-433.

Hebert, B. (2002). Tracking progress: More companies are recognizing the value of project management as part of their overall strategy particularly in times of change. *CMA Management,* 24-27.

Henseler, J., Dijkstra T. & Sarstedt, (2014). Common beliefs and reality about partial least squares: Comments on Organizational Research Methods 17: 182-209.

Hersey, P. & Blanchard, K. H. (1993). Management of organizational behaviour, 6th Edition. Englewood Cliffs, NJ: Prentice-Hall.

Hershey, P. & Blanchard, K. H. (1988). Management of organizational behaviour (5th ed.). Englewood Cliffs, NJ: Prentice Hall

Hersey, P., & Blanchard, K. (1982). Management of organizational behaviour. 4th Edition, Englewood Cliff, NJ: Prentice-Hall

Heston, E. (2019). Biggest Challenges faced as a project Manager. Retrieved from https://www.projectinsight.net/blogs/project-management/biggest-challenges-faced-as-a-project-manager

Hofstede, G. (1991). Cultures and organziations: Software of the mind, London: McGraw-Hill.

Hodgkinson J. (2009). Leadership Styles for Program and Project Managers, published at www.asapm.org

House, R. J. (1971). A path-goal theory of leader effectiveness. Administrative Science Quarterly, September, Vol. 15, pp.321–338

Hwang, B. G., Tan, H. F. & Sathish, S. (21013). Capital project performance measurement and benchmarking in Singapore. En1gineering, Construction and Architectural Management, 20 (2), 143- 159.

IBQM (2015). International Business and Quality Magement Institute LLC. https://news.ibqmi.org/five-challenges-faced-by-project-managers

Ikpefan, F. & Uchendu, O. (2017). Only 31 per cent Nigerians have water in their homes – Federal Government of Nigeria. The nations Newspaper of October 3, 2017

Jacob, K. S., (2017). *Factors influencing performance of community water projects in Tigania central District, Meru County,* Kenya. Unpublished master's thesis, University of Nairobi

Jowah, L. E. (2016). The impact of leadership styles on effective project execution, *Sky Journal of Business Administration and Management,* June, Vol. 4(3), pp. 010 - 017

Jugdev, K. & Muller, R. (2005). A retrospective look at our evolving understanding of project success. *Project Management Journal,* 36(4), 19-31.

Kakumba, U. (2010). Local Government Citizen Participation and Rural Development: Reflections on Uganda's Decentralization System', International Review of Administrative Sciences.

Kaliba, C., Muya M. & Mumba, K. (2009). Cost escalation and schedule delays in road construction projects in Zambia. International Journal of Project Management, 27(5), 522-531.

Kariuki, J. T. (2015). Project manager leadership style, teamwork, project characteristics and performance of water projects in kenya published Ph.D. Thesis, University of Nairobi, Nov.

Kashyap, S. (2019). 10 Common Challenges in Project Management (and How to Solve Them). Retrieved from https://www.proofhub.com/articles/project-management-challenges

Kasiaka, K., (2004). Participatory planning and sustainability of water TASAF water,

Katz, R. (1977), *"The influence of group conflict on leadership effectiveness",* Organizational Behaviour and Human Performance, Vol. 20, pp. 265–286

Keegan, A. E. & Den Hartog, D. N. (2004). Transformational leadership in a project-based environment: A comparative study of the leadership styles of project managers and line managers. *International Journal of Project Management,* 22(8), 609-618.

Kendrick, T. (2012). *Results without Authority: Controlling a Project When the Team Doesn't Report to You*—A Project Manager's Guide (2nd ed.). New York: American Management Association;

Kerzner, H. (2009). *Project Management: A Systems Approach to Planning, Scheduling and Controlling,* 10th ed. John Wiley & Sons, Inc., New York.

Kendra, K., Taplin, L.J., (2004). Project success: a cultural framework. *Project Management Journal* 35 (1), 30–45.

Khan, M. S., Khan, I. & Akhtar, B. Y. (2014). Styles of leadership and its impact upon the project success. *Public Policy and Administration Research,* 4 (11), 48-52.

Kirkpatrick, S. A. & Locke, E. A. (1991). Leadership traits do matter. Academy of Management Executive, March, 44-60.

Kissi, J., Dainty, A. & Tuuli, M. (2012). Examining the role of transformational leadership of portfolio managers in projects performance. *International Journal of Project Management,* 31(4), 485-497.

Kloppenborg, T., & Opfer, W. (2012). The current state of project management research: Trends, interpretations, and predictions. *Project Management Journal,* 33(2), 5-27.

Komin, S. (1990). Culture and work related values in Thai organizations. *International Journal of Psychology,* 25 (5/6), 681 -704.

Kouzes, J. M. & Posner, B. Z. (2007). *The Leadership Challenge.* (4th. ed.) San Francisco, CA. Wiley.

Krech, D., Crutchfield, R. S. & Ballachey, E. L. (1962). Individual in 111society. New York: McGraw-Hill.

Kumaraswamy, M. M., Ng, S. T., Ugwu, O. O., Palaneeswaran, E. & Rahman, M. M. (2004). Empowering collaborative decisions in complex construction project scenarios. Engineering, Construction and Architectural Management, 11(2), 133-142.

Lee-Kelley, L. & Sankey, T. (2008). Global Virtual Teams for Value Creation and Project Success: A Case Study. *International Journal of Project Management,* 26(1), 51-62;

Lim, C. S. & Mohamed, M. Z. (1999). Criteria of project success: An exploratory reexamination. 0 17(4), 243-248.

Lin, Chin-Yen & Kuo, Tsung-Hsien. (2007). The mediate effect of learning and knowledge on organizational learning positively influences knowledge management capacity

Love, P. E. D., Edwards, D. J. & Wood, E. (2011). Loosening the gordian knot: The role of emotional intelligence in construction. Engineering, Construction and Architectural Management, 1 (18), 50- 65.

Maimuna, M. & Kidombo, H. (2017), Factors influencing performance of water projects in arid and semi-arid areas. A case of Ewaso Ng'iro North Borehole Projects, Isiolo County, Kenya, *International Academic Journal of Information Sciences and Project Management,* Volume 2, Issue 1, pp. 217-238

Manazar, H. A., Kashif, A. & Zulqarnain, W. (2015), Impact of Project Manager's Soft Leadership Skills on Project Success, *Journal of Poverty, Investment and Development,* Vol.8,

Manyindo, J. (2009). Mzima water pipeline in Tsavo West National Park. Daily Nation, p. 9.

McColl-Kennedy, J. R. & Anderson, R. D. (2002). Impact of leadership style and emotions on subordinate performance. The Leadership Quarterly, 13(5), 545-559.

Medina, R. & Medina, A., (2014). The project manager and the organisation's long-term competence goal. *International Journal of Project Management,* 32(8), pp.1459–1470.

Melanie, S. K., Raisinghani, M. S. & Webb, K. S. (2009). The Importance of Leadership in Project Management, 216

Muller, R., Geraldi, J. & Turner, J. R. (2012). Relationships between leadership and success in different types of project complexities. Engineering Management, IEEE Transactions, 59 (1), 77 -90.

Muller, R. & Turner, R. (2010). Leadership competency profiles of successful project managers. *International Journal of Project Management,* 28 (7), 437-448.

Muller, R. & Turner, J. R. (2007). Matching the project manager's leadership style to project type. *International Journal of Project Management,* 25 (1), 21-32.

Mulwa, F. (2008). Participatory Monitoring and evaluation of community projects. Paulines publications Africa. Nairobi. Kenya

Muzio, E., Fisher, D. J., Thomas, E. R. & Peters, V. (2007). Soft skills quantification (SSQ) for project manager competencies, *Project Management Journal,* 38(2), 30-38.

Mwakila, W. (2008). An assessment of community participation in water supply and sanitation services: the case of Yombo Dovya and,Barabara ya Mwinyi, water community projects, Temeke, Tanzania. Published master's thesis, institute of social studies, 2008 dec., 1

Northouse, P. G. (2004), Leadership: Theory and practice, Thousand Oaks, CA: Sage

OECD (2008). Donor profiles on aid to water supply and sanitation. The note is an extract from the publication"CRS Aid Activities in support of water supply and sanitation, 2001-2006

Ogunlana, S. O., Siddiqui, Z., Yisa, S. & Olomlolaiye, P. (2002). Factors and procedures used in matching project managers to construction project in Bangkok. *International Journal of Project Management,* 20 (5), 385-400.

Ogunlana, S. O. & Limsila, K. (2008). Performance and leadership outcome correlates of leadership styles and subordinate commitment. Engineering, Construction and Architectural Management, 15 (2), 164 – 184.

Okoye, C. J. (2015). The Challenges of Water supply management in the Niger Delta wetland. Seminar on Tropical Environment, Enugu State University of Science and Technology Business School, Enugu 18th July, 2014

Pettersen, N. (1991). What do we know about the effective project manager*? International Journal of Project Management,* 9 (2), p. 99-104.

Pinto, J. K. & Slevin, D. P. (1988). Project success: Definitions and measurement techniques. *Project Management Journal,* 19(1), 67 – 72.

Prabhakar, G. P. (2008). Teams and projects: A literature review. *International Journal of Business Management,* 3 (10), 20-28

Pretorius, S. Steyn, H. & Bond-Barnard, T. J. (2018). Leadership Styles in Projects: Current Trends and Future Opportunities, *South African Journal of Industrial Engineering November* 2018 Vol 29(3), Pp 161-172

Project Management Institute, (2008). A Guide to the Project Management Body of Knowledge (PMBOK guide) – 4th Edition, Newtown Square, PA: Project Management Institute, Inc.

Project Management Institute, (2004). A guide to the project management body of knowledge, A (PMBOK Guide), 3rd ed., Newtown Square, PA: Project Management Institute

Riaz, A., Noor, A. & Muhammad, T. M. (2013). The Essence of Project Leadership is Significant to Project Management, *Research Journal of International Science Congress Association,* May, Vol. 2(5), 44-48,

Robbins, S. P. (1997). Essentials of organizational behavior, Englewood Cliffs, NJ: Prentice Hall.

Robertson, S. & Williams, T. (2006). Understanding project failure: Using cognitive mapping in an insurance project. *Project Management Journal* 37 (4), 55-71.

Rowlinson, S. M., Ho. T. K. K., &Yuen, P. H. (1993). Leadership style of construction managers in Hong Kong. *Construction Management and Economics,* 11 (6), 455- 465.

Schein, Edgar, H. (2004). Organizational culture and leadership. 3rd edition, jossey-bass, san franscisco

Schmid, B. & Adams, J. (2008). Motivation in project management: The project manager's perspective. *Project Management Journal,* 39(2), 60-71.

Shenhar, A. J. & Dvir, D. (2007). Project management research: The challenge and opportunity. *Project Management Journal,* 38(2), 93-99.

Shenhar, A. (2001). One size does not fit all projects: Exploring classical contingency domains. Management Science, 47(3), 394-414.

Slevin, D. P. (1989). The whole manager. New York: Amacom.

Srica, V. (2008). Social intelligence and project leadership. The Business Review, 9(2), 189-200.

Shepherd, M. & Atkinson, R., (2011). Project management bodies of knowledge; conjectures and refutations. *Electronic Journal of Business Research Methods,* 9(2), pp.152–158.

Shore, B. (2005). Failure rates in global IS projects and the leadership challenge. *Journal of Global Information Technology Management,* 8(3), 1-5.

Spector, P. E. (1997). Advanced topics in organizational behaviour. Job satisfaction: application, assessment, causes and consequences. Thousand oaks, ca. sage publications

Stoyanova, Z. (2017). Risk Assessment of Project Management in Water Sector in Bulgaria. Scientific papers series management, economic engineering in agriculture and rural development. Bulgaria, vol. 17, Issue 1

Tabassi, A. A., & Babar, S. (2010). Towards assessing the leadership style and quality of transformational leadership. The case of construction firms of Iran. *Journal of Technology Management in China,* 5 (3), 245-258.

Taylor, R. (2014). Managing Expectations … A Project Managers Biggest Challenge. Retrieved fromhttps://www.pickeringusa.com/managing-expectations-a-project-managers-biggest-challenge/

Tannenbaum, R. & Schmidt, K. H. (1958). How to choose a leadership style? *Harvard Business Review*, March-April.

Thangiah, M., Shuib B. & Dhanapal D. D. (2019). *Analyzing the Conceptual Model for Exploratory Testing Framework using PLS-SEM*

Thomas, J. (2012). *The 5 Team Leadership Principles for Project Success, 2011 PMI Global Congress Proceedings* – Dallas, TX, USA

Toor, S. & Ogunlana, S. O. (2010). Beyond the 'iron triangle': Stakeholder perception of key performance indicators for large-scale public sector development projects. *International Journal of Project Management,* 28(3), 228–236.

Turner J.R. & Muller R., (2005) The Project Manager's Leadership Style as a Success Factor on Projects: A Literature Review, *Project Management Journal,* 36, 49-61

Turner, R., & Muller, R. (2004), Communication and cooperation on projects between the project owner as principal and the project manager as agent. *European Management Journal,* 22 (3), 327-336.

Turner, J. R. (1999). The handbook of project-based management: Improving the processes for achieving strategic objectives. London: McGraw-Hill.

Vanderstoep, S. W. & Johnston, D. D. (2009). Research Methods for Everyday Life: Blending Qualitative and Quantitative Approaches. Jossey-Bass, San Francisco, CA, 351.

Vankatraman & Ramanujan, (1986) measurement of business performance in strategy research: A comparison of approaches. Academy of management review, 11, 801-814

Verzuh, E. (1999). The fast forward MBA in Project Management. New York: Wiley & Sons.

Xiong, R. (2008). Leadership in Project Management, published M.sc Thesis Georgia Institute of Technology, Georgia, Dec. 2008

Waldman, D. A. & Atwater, L. E. (1994). The nature of effective leadership and championship processes at different levels in a R&D hierarchy. *The Journal of High Technology Management Research,* 5(2), 233-245.

Walker, A. & Kalinowski, M. (1994). An anatomy of a Hong Kong project organization, environment and leadership. Construction Management and Economics, 12, 191 –216.

WaterAid, (2006). National Water Sector Assessment. Nigeria Where Local Governments Have the Statutory Responsibility, but Cannot Access Sufficient Funds to Provide Water and Sanitation. www. wateraid.org. July, 2006.

Wateridge, J. H. (1995). IT projects: *A basis for success. International Journal of Project Management,* 13 (3), 169-172.

Wechuli, T. W. & Kavale, S. (2017). The Role of Leaders on the Performance of Water Resources Projects in Kwale County, *International Journal of Scientific and Research Publications,* Volume 7, 206-214

Were, V. L. A. (2014). The Nexus of Nongovernmental Organization Water Projects, Monitoring and Evaluation, and Kenya's Water Law Ph. D. Dissertation, University of Minnesota, August,

WHO, (World Health Organization) (2002). World Health Report 2002: Reducing Risks, Promoting Healthy Life. World Health Organization, Geneva.

Wilson, F. (2018). 5 Common Project Management Challenges and Solutions to tackle them like a Pro. Retrieved from https://www.ntaskmanager.com/blog/project-management-challenges-and-solutions/

Wong, K. K. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. Marketing Bulletin, 24, http://marketing-bulletin.massey.ac.nz

World Water Council, (2006). Final report of the 4th World Water Forum; Local Actions for Global Challenge.

WWAP (United Nations World Water Assessment Programme), (2015). The United Nations World Water Development Report 2015: Water for a Sustainable World. Paris, UNESCO.

Yamane, Taro. (1967). Statistics, an Introductory Analysis, 2nd Ed., and New York: Harper and Row.

Yang, L. R., Huang, C. F. & Wu, K. S. (2011). The association among project manager's leadership style, teamwork and project success. *International journal of project management,* 29(3), 258-267.

Yaya, O. O., Dossah, B. & Chukwurah, M. A. (2003). An appraisal of hand-pump boreholes in Zamfara State; Nigeria. 29th WEDC International Conference, Towards the Millennium Development Goals, Abuja, Nigeria.

Youker, R. (1999). The difference between different types of projects. In Proceedings of the 30th Annual Project Management Institute 1999 Seminars & Symposium, Philadelphia, PA, USA

Yu, A. G., Flett, P. D. & Bowers, J. A. (2005). Developing a value proposal for assessing project success. *International Journal of Project Management*, 23 (6), 428 – 436

Yukl, G. (2006). Leadership in organizations (6th Edition.). Pearson-Prentice Hall. NJ Upper Saddle River

Yukl, G. (2002). Leadership in organizations (5th edition). Upper Saddle River, NJ: Prentice-Hall.

Zhang, L. & Fan, W. (2013). Improving performance of construction projects: A project manager's emotional intelligence approach. *Engineering, Construction and Architectural Management,* 20 (2), 195 -207

Zimmerer, T. & Yasin, M. M. (2008). A leadership profile of American project managers. *Project Management Journal,* 29(3), 31-38

APPENDICES

Appendix A (Summary of Empirical Literature and Research Gaps)

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
Faith (2018)	The effect of project management leadership on performance of compassion international (CI) projects in kitui county, kenya	Study survey 160 respondents comprises of project managers, project team members, community leaders and project beneficiaries who are involved in the implementation of CI projects in Kitui County,	Study found that leadership skills affects the performance of C. I. projects. It was established that there is no one superior leadership skill to the other, but different competences mixes are needed at different managerial levels	Further research should be carried out to establish factors attributed to affecting the performance of CI projects as the current study only examined project management leadership aspects of skills, experience, control and style.	Project leadership style, challenges and water project characteristics were analyzed in this study for performance
Kariuki (2018)	The Effect of Project Manager's Leadership Style on Performance of Water	Study comprised 102 water and sanitation projects completed in Kenya between	The study concludes that there is a significant relationship between project	Further research should consider other aspect of project performance	Project leadership challenges is analyzed in this study for performanc

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
	Projects in Kenya	2011 and 2014	manager's leadership style and project performance.	such as client satisfaction, stakeholder satisfaction and impact of the project on the environment	e
Jacob (2017)	Factors influencing performance of community water projects in Tigania Central District, Meru county, Kenya	Discriptive survey of 6 water project, 3880 people; comprises of management committee members, project members, water development officers and local administrators.	Study submit that project members and government shuld show serious attention and commitment for the success of water project	Further research should focus on other factors influencing performance of community water project	Project leadership style, challenges were analyzed in this study for performance
Wechuli and Kavale (2017)	The Role of Leaders on the Performance of Water Resources Projects in Kwale County, Kenya	Study comprises of project committee members, project coordinators who are directly or indirectly in the implementation and management of water resources projects within Kwale County. 21 projects and	Findings showed that role of leaders were very critical in determining how projects performed. The role of coordination and monitoring were found to have the greatest influence	Further research should be carried out to establish the other factors that are attributed to affecting the performance of water projects as the current study only examined leaders role	Project leadership style and challenges were analyzed in this study for performance

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
		190 personnel were used as the targeted population			
Kariuki (2015)	Project manager leadership style, teamwork, project characteristics and performance of water projects in kenya	Out of the targeted 102 projects, complete data was received for 68 projects giving a response rate of 67 percent. This study adopted a descriptive cross-sectional research design	Study findings submit that majority of water project in kenya experience significant amount of time and cost over-run with the average time over-run being 100 percent and average cost over-run being 20 percent.	Further study should track project performance from the start of the project to completion.	Project leadership challenges and water project characteristics aspects were analyzed in this study
Assaf *et al.* (2014)	Impact of project team effectiveness on project performance (cost and time performance).	Survey involved 94 project team members from 13 different projects.	A strong positive correlation between team effectiveness and project performance was found as well as correlation	Effect of project characteristics on the relationship was not considered in the study.	Water project Characteristic were included in this study.

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
			between leadership style and project performance.		
Kariuki (2014)	Influence of leadership skills on the success of information technology projects within the Kenyan banking industry:	Leadership skills, top management support	The study found that leadership skills are key determinants of the success of the information technology projects within Kenyan banking industry	The research focus on one variable; leadership style. There is need to study other aspects that were found to have an influence on leadership	This study includes water project Characteristics
Thwala (2014)	The relationship between leadership styles and project success in the South Africa construction industry	Laissez faire transactional leadership styles	Study revealed that there is a positive relationship between transactional leadership and project success. The results further revealed that there is no relationship between Laissez faire, leadership style and success of construction project.	Other factors found to influence performance was not studied	Project leadership challenges and water project characteristics were analyzed in this study for performance
Huwein (2013)	Impact of Project Manager's	communication, interpersonal,	Study indicates that a statistically	The study only focused on soft	Study include water

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
	Soft leadership skills on project success.	coordination, team building and delegation, problem finding skills	significant positive relationship exist between each of identified soft leadership skills and project performance.	skills and ignored hard skills	project Characteristics.
Kissi et al. (2013)	Role of portfolio manager's transformational leadership style on project performance in UK.	Case study approach was used 350 questionnaires administered to project managers for a company operating across UK.	Transformational leadership behaviour of portfolio managers was found to be positively related to project performance.	Study was based on one organization which limits generalizability. Effect of project characteristics was not considered.	Projects from Several organizations included in the study.
Yakhchali and Farsani (2013)	Investigation on whether different project require different leadership styles.	Survey method used, 341 questionnaires administered to project managers in Iran.	Results showed differences in leadership style of project managers in successful projects of different application areas.	Effect of challenges of project leadership was not investigated.	This study investigate challenges of project leadership
Muller and Turner (2010)	Leadership competency profiles of successful project managers in different types of projects.	Snowball sampling technique was used. Study used data from 400 questionnaires received back.	Differences in project manager's leadership competency profiles in successful projects of different type were found.	The study did not consider the effect of challenges of project leadership on project performance.	Project leadership challenges were captured in this study.
Limsila	Relationship	Survey data	Study found	Effect of	Project

Researcher (s)	Focus of the Study	Methodology and Location of Study	Key Study Findings	Research Gaps	Current Study and the Gaps
and Ogunlana (2008)	between project manager's leadership style, subordinates' commitment and work performance in Thailand's construction industry.	was collected from 52 project managers, 92 engineers and 12 architects.	that project managers switch leadership style based on the needs of the project. Transformational leadership style was found to be the most dominant style in Thailand.	project leadership challenges and project characteristic not considered in the study.	leadership challenges and water project were analyzed in this study.
Muller and Turner (2007)	Impact of project manager's leadership style on project success and whether different leadership styles are appropriate for different types of projects.	Snowball sampling technique used. Study used data from 400 questionnaires and 14 interview results.	Project manager's leadership style was found to influence project success and that different leadership styles were found to be appropriate for different types of projects.	Study did not include Project leadership challenges on Water project Effect of was also not considered.	Project leadership challenges and water project aspects was captured in this study.

Appendix B (Research Construct Model showing inner variable)

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Project Leadership			**0.978**	**0.982**	**0.902**
	11a - Project leadership is more about influencing project teams than managing water projects.	0.941			

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
	11b - Project leader's effort drive performance of water project.	0.943			
	11c - Successful water project has high level of project leadership influence.	0.967			
	11d - Challenges faced by project leaders affect performance of water projects.	0.963			
	11e - Different project leadership styles are required at different stages of water project	0.923			
	11f -. Project leaders are responsible for creating environment for project team members to take ownership of the decision making processes which enhances water project performance.	0.961			
Authoritarian Leadership Style			0.978	**0.983**	**0.904**
	12ai - Project team need to be supervised closely otherwise they are not able to do their job	0.967			
	12aii - It is fair to say that most project team members are lazy	0.89			
	12aii - Employees must be given rewards and punishments in order to motivate them to do their jobs	0.978			
	12aiv - Most employees feel insecure and need direction in their jobs	0.96			
	12v - Project leader is the chief judge to the achievement of the members in the group	0.973			

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
	12vi - Effective leaders give orders and clarify procedures	0.933			
Democratic Leadership Style			0.977	**0.981**	**0.898**
	12bi - Project team members want to be part of the decision making process	0.979			
	12bii - Providing guidance without pressure is the key to being a good leader	0.958			
	12biii - Project team members want frequent and supportive communication from their leader	0.872			
	12biv - Leaders need to help subordinates accept responsibility for completing their work	0.955			
	12bv - It is the leaders responsibility to help subordinates in commitment towards project goals	0.952			
	12bvi - People are always competent and if given a task will do good	0.965			
Laisse-Faire Leadership Style			0.983	**0.986**	**0.922**
	12ci - Leaders should let subordinates work problems on their own	0.929			
	12cii - Leadership involves staying out of the way as subordinates do their work	0.967			
	12ciii - Leaders should allow their subordinates to appraise their work	0.946			
	12civ - Leaders should give subordinates complete freedom to solve problems in their work	0.95			
	12cv - In most situations, workers prefer little input	0.954			

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
	from their leader				
	12cvi - Leader avoids making decisions, abdicates responsibility and does not use authority	0.909			
Transactional Leadership Style		0.929	0.975	**0.980**	**0.889**
	12di - Leadership style focuses on a specific task and based on performance results	0.967			
	12dii - Leader provides awards and punishments for performance purposes	0.946			
	12diii - Motivation is a tool for encouraging project team members	0.95			
	12div - Rewarding project team members for meeting performance targets	0.954			
	12dv - Leaders are actively vigilance to ensure goals are met	0.909			
	12dvi - Leaders intervene after mistakes have happened	0.929			
Transformational Leadership Style			0.981	**0.984**	**0.911**
	12ei - Leaders advise, support, and care for project team members	0.93			
	12eii - It's about initiating change in project approaches, styles and thoughts	0.964			
	12eiii - Set more challenging expectations and typically achieve higher performance	0.959			
	12eiv - Leaders tends to have more committed and	0.969			

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
	satisfied followers				
	12ev - Leaders Challenge creativity for problem solving	0.955			
	12evi - Leaders energizing followers by optimism, goals, and vision	0.95			
Charismatic Leadership Style			0.976	**0.983**	**0.934**
	12fi - Leader manifests revolutionary power	0.979			
	12fii - Leader leads a team primarily through magnetism of personality	0.97			
	12fiii - Leaders inspire a high level of enthusiasm and success on short projects	0.967			
	12fiv - Focus is on the project leader and on the project goals and team development	0.949			
Challenges of Identified Leadership style			0.995	**0.995**	**0.907**
	13a - Experience of team members	0.867			
	13b - Risk minimization	0.942			
	13C - Inadequate communication:	0.967			
	13d - Managing stakeholder's expectation	0.951			
	13e - Managing Project changes	0.946			
	13f - Providing clarity on project direction	0.962			
	13g - Managing unrealistic deadlines	0.943			
	13h - Managing scope creep	0.965			
	13i - Insufficient team skills	0.95			

Constant	Variable Items	Loading	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
	13j - Poorly defined goals and objectives	0.97			
	13k – Managing teamwork	0.919			
	13l - Lack of accountability	0.972			
	13m - Managing estimated expenses	0.965			
	13n - Lack of trust	0.975			
	13o - Presence Managing teamwork of conflict and tension	0.958			
	13p - Improper flow of information	0.961			
	13q - Low team commitment and engagement	0.963			
	13r - Lack of transparency	0.962			
	13s - Long-term thinking	0.943			
	13t - Inspiring project team	0.958			
Performance of water project in Nigeria			0.967	**0.974**	**0.883**
	Functionality 11g– Water project are rarely constructed where it is needed.	0.915			
	Time 11h – Water project mostly over-run its allocated time frame.	0.907			
	Quality 11i– Water project mostly provide water fit for use that meet consumption requirement.	0.938			
	Affordability 11j – Water project regularly over-run its allotted cost schedule.	0.952			
	Complexity 11k – Water project complexity requires high skilled professional.	0.851			

Appendix C (Total indirect effect of Project Leadership style on dependent variable)

Total Indirect Effects

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected | Samples | Copy to Clipboard: | Excel Format | R Format

	Original Sample (O)	Sample Mean (...	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Authoritarian L.S. -> Challenges of project leadership	0.005	0.005	0.010	0.487	0.626
Authoritarian L.S. -> Performance of Water Project	0.159	0.156	0.052	3.054	0.002
Authoritarian L.S. -> Project Leadership					
Challenges of project leadership -> Performance of Water Project					
Charismatic L.S. -> Challenges of project leadership	-0.009	-0.008	0.008	1.218	0.224
Charismatic L.S. -> Performance of Water Project	0.196	0.196	0.041	4.782	0.000
Charismatic L.S. -> Project Leadership					
Democratic L.S. -> Challenges of project leadership	-0.023	-0.022	0.017	1.328	0.185
Democratic L.S. -> Performance of Water Project	-0.186	-0.183	0.059	3.162	0.002
Democratic L.S. -> Project Leadership					
Laissez-faire L.S. -> Challenges of project leadership	-0.031	-0.030	0.020	1.556	0.120
Laissez-faire L.S. -> Performance of Water Project	0.302	0.302	0.016	18.851	0.000
Laissez-faire L.S. -> Project Leadership					
Project Leadership -> Challenges of project leadership					
Project Leadership -> Performance of Water Project	-0.061	-0.060	0.038	1.612	0.108
Transactional L.S. -> Challenges of project leadership	-0.040	-0.041	0.027	1.464	0.144
Transactional L.S. -> Performance of Water Project	0.320	0.319	0.043	7.458	0.000
Transactional L.S. -> Project Leadership					
Transformational L.S. -> Challenges of project leadership	-0.009	-0.010	0.012	0.719	0.472
Transformational L.S. -> Performance of Water Project	0.211	0.212	0.043	4.883	0.000
Transformational L.S. -> Project Leadership					

Appendix D (Relationship between categorized identified challenges of project leadership style, project leadership style and performance of water project)

Path Coefficients

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected | Samples

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Authoritarian_ -> Challenges of project leader 1	0.156	0.159	0.117	1.338	0.182
Authoritarian_ -> Challenges of project leader 2	0.360	0.360	0.098	3.671	0.000
Authoritarian_ -> Challenges of project leader 3	0.776	0.777	0.087	8.904	0.000
Authoritarian_ -> Challenges of project leader 4	0.493	0.495	0.081	6.064	0.000
Challenges of project leader 1 -> Project Performance	0.459	0.434	0.069	6.697	0.000
Challenges of project leader 2 -> Project Performance	-0.137	-0.079	0.150	0.914	0.361
Challenges of project leader 3 -> Project Performance	0.495	0.407	0.164	3.010	0.003
Challenges of project leader 4 -> Project Performance	0.168	0.226	0.190	0.886	0.376
Charismatic -> Challenges of project leader 1	0.165	0.170	0.061	2.721	0.007
Charismatic -> Challenges of project leader 2	-0.035	-0.039	0.062	0.568	0.570
Charismatic -> Challenges of project leader 3	0.404	0.404	0.067	6.057	0.000
Charismatic -> Challenges of project leader 4	0.185	0.189	0.060	3.094	0.002
Democratic -> Challenges of project leader 1	-0.263	-0.266	0.106	2.480	0.013
Democratic -> Challenges of project leader 2	-0.602	-0.601	0.109	5.500	0.000
Democratic -> Challenges of project leader 3	-0.839	-0.837	0.110	7.661	0.000
Democratic -> Challenges of project leader 4	-0.640	-0.635	0.108	5.906	0.000

Appendix E (Analysis response of Project Leadership style, identified challenges of project leadership and performance of water project in Nigeria)

Specific Indirect Effects

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected | Samples | Copy to Clipboard: Excel Form

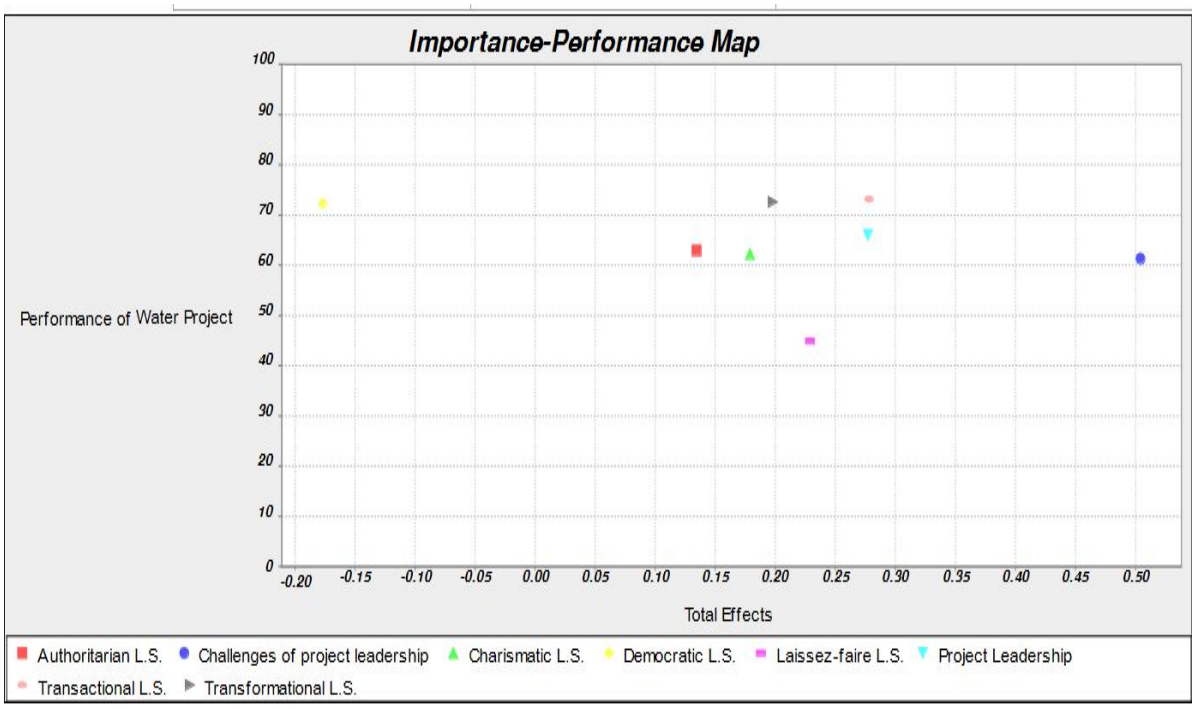
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Authoritarian L.S. -> Project Leadership -> Challenges of project leadership	0.005	0.005	0.010	0.482	0.630
Charismatic L.S. -> Project Leadership -> Challenges of project leadership	-0.009	-0.008	0.007	1.252	0.211
Democratic L.S. -> Project Leadership -> Challenges of project leadership	-0.023	-0.022	0.017	1.348	0.178
Laissez-faire L.S. -> Project Leadership -> Challenges of project leadership	-0.031	-0.030	0.019	1.579	0.115
Transactional L.S. -> Project Leadership -> Challenges of project leadership	-0.040	-0.040	0.027	1.472	0.142
Transformational L.S. -> Project Leadership -> Challenges of project leadership	-0.009	-0.009	0.012	0.740	0.459
Authoritarian L.S. -> Challenges of project leadership -> Performance of Water Project	0.176	0.174	0.041	4.322	0.000
Charismatic L.S. -> Challenges of project leadership -> Performance of Water Project	0.165	0.167	0.036	4.599	0.000
Democratic L.S. -> Challenges of project leadership -> Performance of Water Project	-0.263	-0.261	0.046	5.723	0.000
Laissez-faire L.S. -> Challenges of project leadership -> Performance of Water Project	0.200	0.198	0.026	7.603	0.000
Authoritarian L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	0.003	0.003	0.006	0.503	0.615
Charismatic L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.005	-0.005	0.004	1.296	0.196
Democratic L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.013	-0.012	0.010	1.391	0.165
Laissez-faire L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.018	-0.017	0.011	1.661	0.097
Transactional L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.023	-0.023	0.016	1.493	0.136

Specific Indirect Effects

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected | Samples | Copy to Clipboard: Excel Form

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Charismatic L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.005	-0.005	0.004	1.296	0.196
Democratic L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.013	-0.012	0.010	1.391	0.165
Laissez-faire L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.018	-0.017	0.011	1.661	0.097
Transactional L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.023	-0.023	0.016	1.493	0.136
Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.061	-0.058	0.037	1.651	0.099
Transformational L.S. -> Project Leadership -> Challenges of project leadership -> Performance of Water Project	-0.005	-0.005	0.006	0.785	0.433
Transactional L.S. -> Challenges of project leadership -> Performance of Water Project	0.185	0.181	0.035	5.294	0.000
Transformational L.S. -> Challenges of project leadership -> Performance of Water Project	0.183	0.182	0.040	4.569	0.000
Authoritarian L.S. -> Project Leadership -> Performance of Water Project	-0.019	-0.023	0.035	0.548	0.584
Charismatic L.S. -> Project Leadership -> Performance of Water Project	0.036	0.037	0.020	1.800	0.072
Democratic L.S. -> Project Leadership -> Performance of Water Project	0.090	0.095	0.044	2.037	0.042
Laissez-faire L.S. -> Project Leadership -> Performance of Water Project	0.120	0.121	0.024	5.020	0.000
Transactional L.S. -> Project Leadership -> Performance of Water Project	0.158	0.156	0.032	4.967	0.000
Transformational L.S. -> Project Leadership -> Performance of Water Project	0.034	0.035	0.034	0.991	0.322

Appendix F (Importance-Performance Map Analysis (IPMA) of construct measure)


Importance-Performance Map
Performance of Water Project
Total Effects
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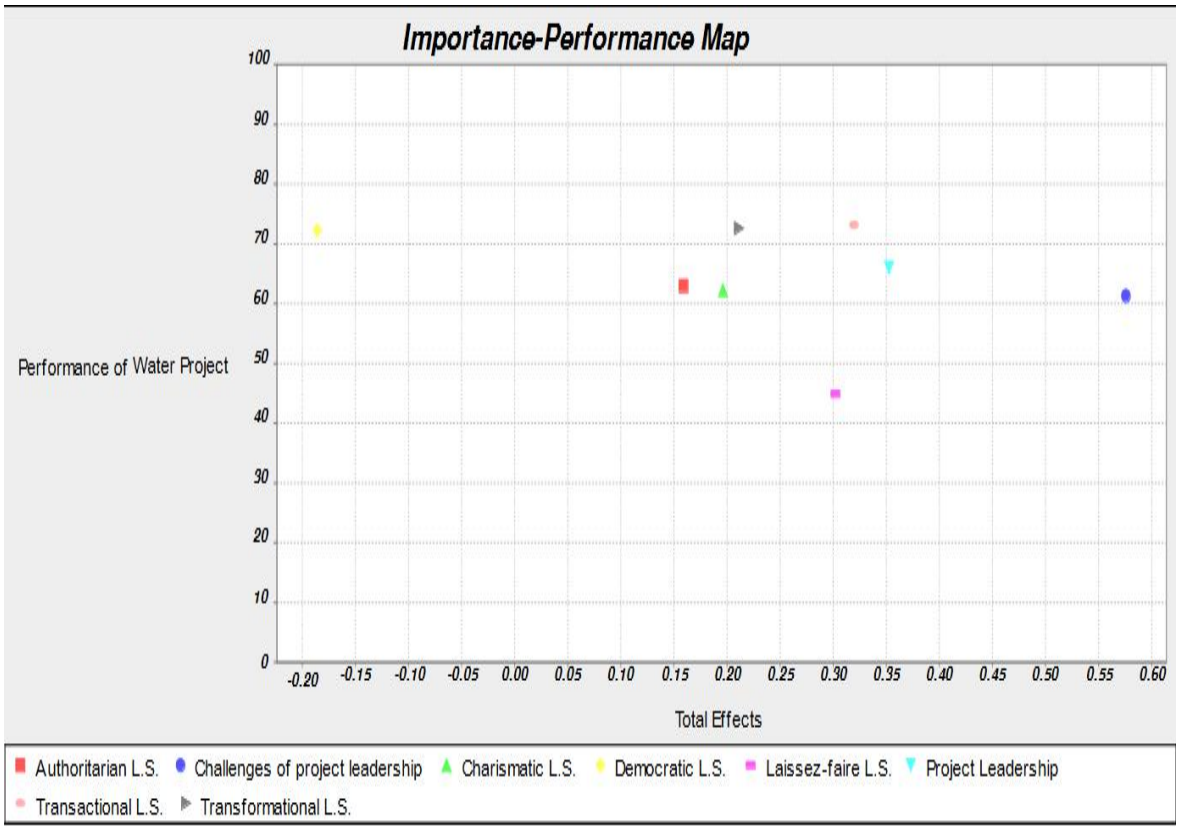
90
80
70
60
50
40
30
20
10
0
-0.20 -0.15 -0.10 -0.05 0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50
Authoritarian L.S.
Challenges of project leadership
Charismatic L.S.
Democratic L.S.
Laissez-faire L.S.
Project Leadership
Transactional L.S.
Transformational L.S.


Importance-Performance Map
Performance of Water Project
Total Effects
100
90
80
70
60
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0
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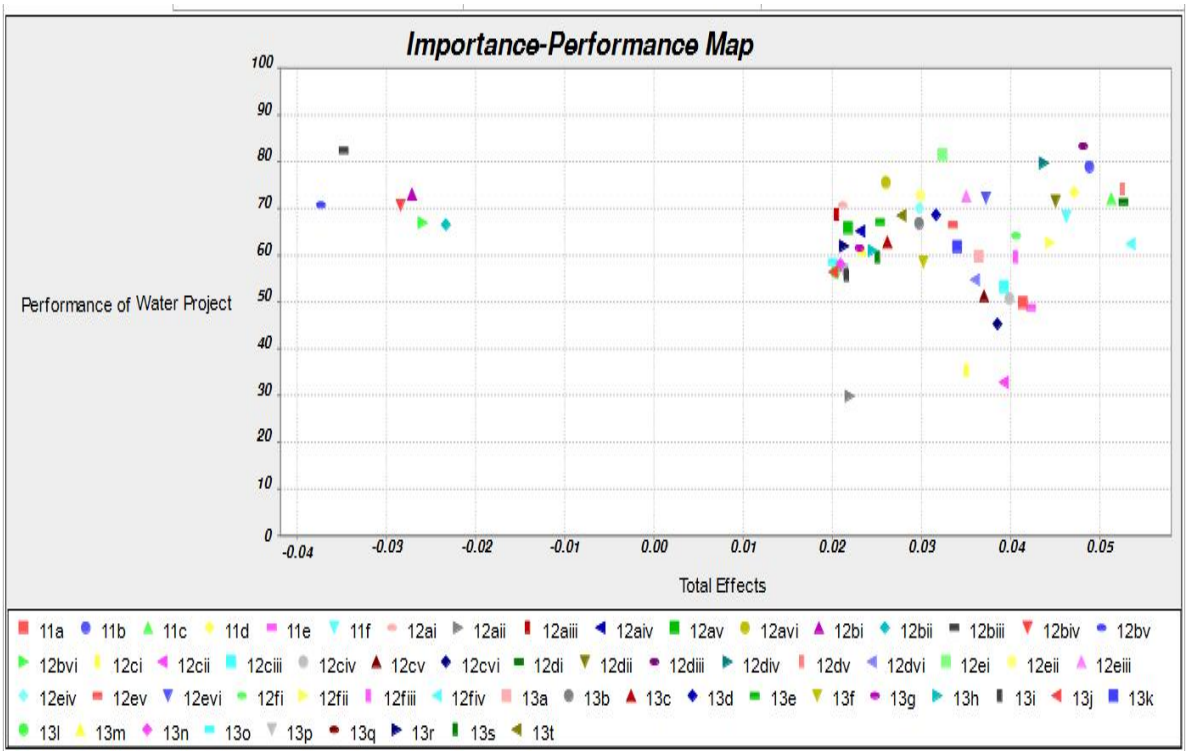
Authoritarian L.S.
Challenges of project leadership
Charismatic L.S.
Democratic L.S.
Laissez-faire L.S.
Project Leadership
Transactional L.S.
Transformational L.S.


Importance-Performance Map
Performance of Water Project
Total Effects
100
90
80
70
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30
20
10
0
-0.04
-0.03
-0.02
-0.01
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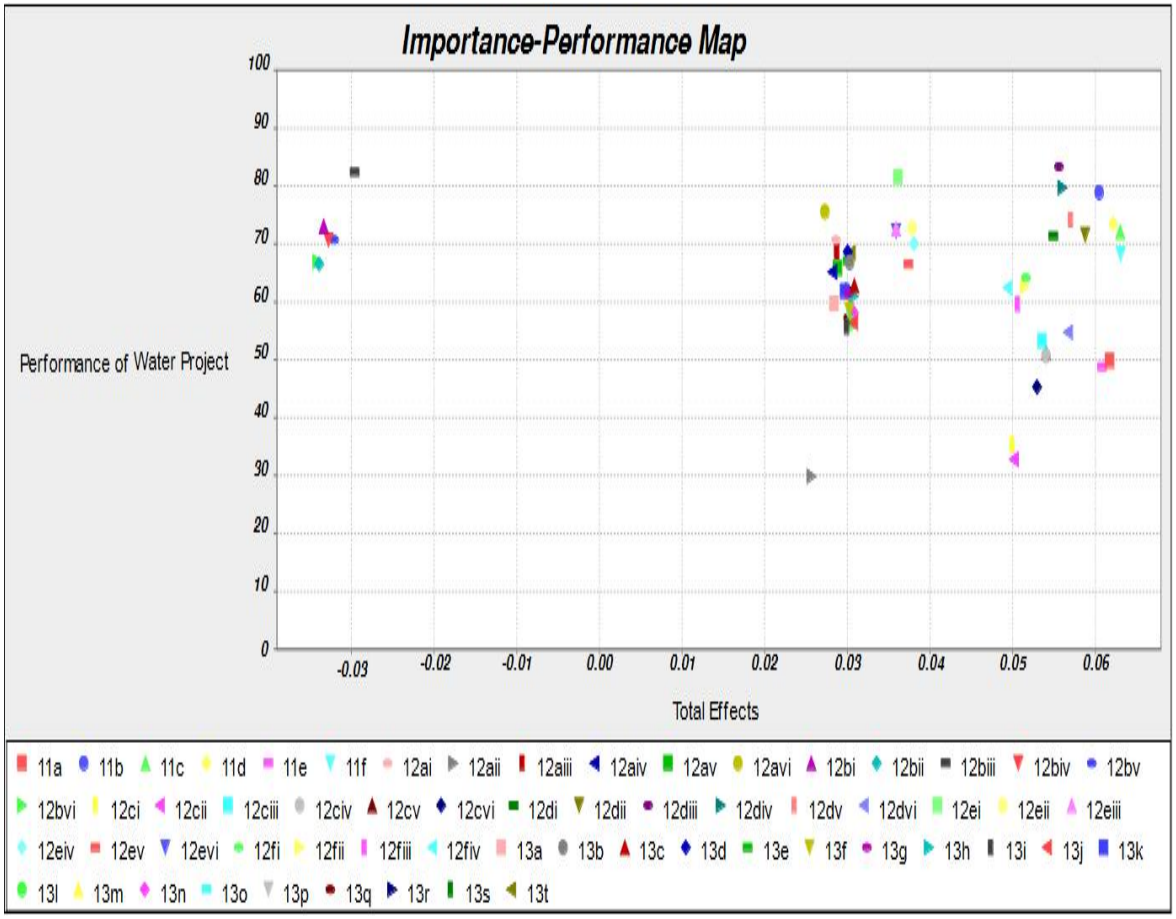
0.04
0.05
11a 11b 11c 11d 11e 11f 12ai 12aii 12aiii 12aiv 12av 12avi 12bi 12bii 12biii 12biv 12bv
12bvi 12ci 12cii 12ciii 12civ 12cv 12cvi 12di 12dii 12diii 12div 12dv 12dvi 12ei 12eii 12eiii
12eiv 12ev 12evi 12fi 12fii 12fiii 12fiv 13a 13b 13c 13d 13e 13f 13g 13h 13i 13j 13k
13l 13m 13n 13o 13p 13q 13r 13s 13t


Importance-Performance Map
Performance of Water Project
Total Effects
100
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11a 11b 11c 11d 11e 11f 12ai 12aii 12aiii 12aiv 12av 12avi 12bi 12bii 12biii 12biv 12bv
12bvi 12ci 12cii 12ciii 12civ 12cv 12cvi 12di 12dii 12diii 12div 12dv 12dvi 12ei 12eii 12eiii
12eiv 12ev 12evi 12fi 12fii 12fiii 12fiv 13a 13b 13c 13d 13e 13f 13g 13h 13i 13j 13k
13l 13m 13n 13o 13p 13q 13r 13s 13t

Appendix G (Questionnaire)

Please, provide the following information

Section A: Personal Information

1. Please, specify your gender Male Female

2. Please, indicate your highest level of education attained so far. PhD M.Sc/M.Tech B.Sc/B.Tech HND/OND SSCE

Section B: Experiential Information

3. Have you ever been a member or engage in water project development? Yes No

4. Years of work experience in water sector/industry? 0-3 years 4-7 years 8-13 years 14-19 years More than 19 years

5. What is your current job position? Project Manager Engineer/Suppliers Geologist/Geo-physicians Water-Scientist/environmental surveyor Others, please specify _____

6. Name/Title of the water project? Water supply project Water irrigation project Water dams and reservoirs project Water quality, pollution and drainage project Others, please spec66ify _____

7. In your opinion, how can you rate the performance of water project in Nigeria (Please tick as appropriate) Very Good Good Average Bad Very Bad

8. Water project Principal organization category? Government Ngo Private Community Others, please specify _____

9. Based on water projects that your organization has undertaken in the past, kindly rate water project complexity. Low Medium High 1

10. Water Project duration? Below 2 years 2 to 4 5 to 9 10 to 15 Others, please specify:

_____

Section C: Research Constructs under Measure

11. Kindly, indicate the extent to which you agree with each of the following Project Leadership/Project performance relationship statement. -

Please, note: Strongly- Agree - 5 points, Agree - 4 points, Neutral - 3 points, Disagree - 2 points, Strongly Disagree -1 point.

statement	strongly disagree	disagree	neutral	agree	strongly agree
Project Leadership					
11a - Project leadership is more about influencing project teams than managing water projects.					
11b - Project leader's effort drive performance of water project.					
11c - Successful water project has high level of project leadership influence.					
11d - Challenges faced by project leaders affect performance of water projects.					
11e - Different project leadership styles are required at different stages of water project					
11f -. Project leaders are responsible for creating environment for project team members to take ownership of the decision making processes which enhances water project performance.					
Water Project Performance					
Functionality 11g– Water project are rarely constructed where it is needed.					
Time 11h – Water project mostly over-run its allocated time frame.					
Quality 11i– Water project mostly provide water fit for use that meet consumption requirement.					
Cost 11j – Water project regularly over-run its allotted cost schedule.					
Complexity 11k – Water project complexity requires high skilled professional.					

12. For the project mentioned above, kindly indicate the extent to which you agree with each of the following Project Leadership Style concerning their degree of influence on the performance of water projects in Nigeria

water project leadership styles	strongly disagree	disagree	neutral	agree	strongly agree
A - Authoritarian Leadership Style					
12ai - Project team need to be supervised closely otherwise they are not able to do their job					
12aii - It is fair to say that most project team members are lazy					
12aii - Employees must be given rewards and punishments in order to motivate them to do their jobs					
12aiv - Most employees feel insecure and need direction in their jobs					
12v - Project leader is the chief judge to the achievement of the members in the group					
12vi - Effective leaders give orders and clarify procedures					
B - Democratic Leadership Style					
12bi - Project team members want to be part of the decision making process					
12bii - Providing guidance without pressure is the key to being a good leader					
12biii - Project team members want frequent and supportive communication from their leader					
12biv - Leaders need to help subordinates accept responsibility for completing their work					
12bv - It is the leaders responsibility to help subordinates in commitment towards project goals					
12bvi - People are always competent and if given a task will do good					
C - Laissez-faire Leadership Style					

water project leadership styles	strongly disagree	disagree	neutral	agree	strongly agree
12ci - Leaders should let subordinates work problems on their own					
12cii - Leadership involves staying out of the way as subordinates do their work					
12ciii - Leaders should allow their subordinates to appraise their work					
12civ - Leaders should give subordinates complete freedom to solve problems in their work					
12cv - In most situations, workers prefer little input from their leader					
12cvi - Leader avoids making decisions, abdicates responsibility and does not use authority					
D - Transactional Leadership Style					
12di - Leadership style focuses on a specific task and based on performance results					
12dii - Leader provides awards and punishments for performance purposes					
12diii - Motivation is a tool for encouraging project team members					
12div - Rewarding project team members for meeting performance targets					
12dv - Leaders are actively vigilance to ensure goals are met					
12dvi - Leaders intervene after mistakes have happened					
E - Transformational Leadership Style					
12ei - Leaders advise, support, and care for project team members					
12eii - It's about initiating change in project approaches, styles and thoughts					
12eiii - Set more challenging expectations and typically achieve higher performance					

water project leadership styles	strongly disagree	disagree	neutral	agree	strongly agree
12eiv - Leaders tends to have more committed and satisfied followers					
12ev - Leaders Challenge creativity for problem solving					
12evi - Leaders energizing followers by optimism, goals, and vision					
F - Charismatic Leadership Style					
12fi - Leader manifests revolutionary power					
12fii - Leader leads a team primarily through magnetism of personality					
12fiii - Leaders inspire a high level of enthusiasm and success on short projects					
12fiv - Focus is on the project leader and on the project goals and team development					

13. Kindly indicate the extent to which you agree with each of the following statement as the challenge of project leadership regarding the performance of water projects in Nigeria.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a - Experience of team members					
b - Risk minimization					
C - Inadequate communication:					
d - Managing stakeholder's expectation					
e - Managing Project changes					
f - Providing clarity on project direction					
g - Managing unrealistic deadlines					
h - Managing scope creep					
i - Insufficient team skills					
j - Poorly defined goals and objectives					

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
k - Managing teamwork					
l - Lack of accountability					
m - Managing estimated expenses					
n - Lack of trust					
o - Presence of conflict and tension					
p - Improper flow of information					
q - Low team commitment and engagement					
r - Lack of transparency					
s - Long-term thinking					
t - Inspiring project team					