

INFLUENCE OF LEADERSHIP TRAITS ON TEAM PERFORMANCE AS CORRELATES OF SUCCESS IN CONSTRUCTION PROJECT DELIVERY

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ABSTRACT

The project environment in Nigeria is shifting from traditional practice towards dispersed teams thereby creating the need to understand leadership attributes that lead to successful project outcomes. This study assessed the impact of leadership traits on team performance as correlates of success in construction projects. Like many other management research, the study involve inferential survey. 172 participants drawn from the different professions in the construction industry selected from 42 mega projects completed in the last three years in south-south Nigeria were sampled. Twelve collaborative leadership traits drawn from emotional, managerial competencies were tested against team performance and team spirit stimulants from the literature. Mean item score was used to evaluate relevance of the traits to collaborative working while hypotheses were tested using chi square. While the result of the study is not different from literature, the far reaching implication is that, project team members' satisfaction translates into successful projects. Project management's leadership quest to satisfy the project team must be guided towards collaboration. The current result has advance significantly the understanding of team leadership attributes for the research environment and further buttress the need to meet project participants' mutual objectives for a successful project.

KEYWORDS

Collaborative working, leadership traits, multi-cultural projects, team spirit, and team performance

1. INTRODUCTION

The effectiveness of project management has been linked to the success of the project (Hyva'ri, 2006). The nexus between project success and project manager's performance has also been established (Rahman *et al.*, 2008). The mainstay of effective project management has been predicated on people and leadership as critical drivers. A study by Nauman & Khan (2008) identified people as the most essential project management resource. Impacts of leadership on project management effectiveness and project success have been widely studied. Zimmerer & Yasin (1998) found that positive leadership contributed about 76% to the success of projects. Negative or poor leadership contributed 67% to the failure of projects (Kahn & Nauman, 2008). While these studies considers broad theme of leadership; study on the specific construct of leadership traits is not apparent as research on project leadership are limited (Cleland, 1995 and Chan & Chan, 2005). In the context of the developing countries, Odusami, Omirin & Iyagba (2003) believes the lack of focus on leadership research is not only a case in academic but also a

significant problem in practice. In Nigeria, very few studies are conducted in this area (Ekung, 2012). Previous studies in Nigeria evaluate mainly leadership behaviour (style) on project performance (Odusami Omirin & Iyagba, 2003). But construction projects are social systems that include numerous areas: organisational behaviour; leadership competence; and human resource management (Huemann, Keegan & Turner 2007). Despite this awareness, the conventional model of construction management's research tends to emphasize technology and management to the marginalization of leadership; this is therefore a case for reconsideration (Skipper & Bell, 2006). The impact of this trend is widespread and shortage of skilful 'construction leaders' leads other factors (Toor & Ofori, 2008).

The present study focuses on traits as a sub-set of leadership competence. Trait is an important component of the competence thought in leadership that does a better job at predicting that a construction project manager may be an effective leader than actually distinguishing between an effective or ineffective leader (Shead, 2011). Traits refer to external behaviours that emerge from things going on within the leader's mind. It is these internal belief and processes that are important for effective leadership (Mosier, 2010). The project management in Nigeria is largely engrossed in traditional practice (Ekung, 2012; Odusami Omirin and Iyagba, 2003) and is gradually transiting to virtual team practice. The context of its project management therefore is neither originally collocated nor purely virtual. With the on-going transition from traditional to virtual project environment, it is pertinent to identify proven collaborative leadership traits for each project environment based on their influence on team spirit and performance.

2. PROJECT TEAM

The team is a group of people with predetermined purpose of achieving a goal or set goals through collective efforts, resources and responsibility for the results achieved (Oyedele, 2010). Katzenbach & Smith (1993) in Oyedele (2010) described a team as a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach of which they are mutually accountable. In the context of construction project, a team can be described as a group of people assembled for a temporary endeavour to achieve defined goal. Project teams play an important role not only in traditional projects, such as new product development, systems design and construction, but also in implementing organisational change, transferring technology concepts and in executing unique projects like construction (Thamhain, 2004).

Teams do not emerge through a natural process but requires a conscious selection process. There are different stages in project team formation process. Tuckman and Jensen (1977) in Tseng, *et al.*, (2004) identify five stages of team development: forming; storming; norming; performing and adjourning. Oyedele (2010) identified stages of team selection or election to include induction, training or both; performance and adjournment. After due diligence selection, a project requires team development to fully integrate in order to relish required performance. Several writers have shown that an effective team is artificially built and not naturally born, hence the role of the project manager and his leadership traits cannot be overemphasized. Other studies have also shown that individual qualities of team member do not naturally add up to the quality of a team except the qualities is managed to advantage hence the need to collaborate.

3. TEAM PERFORMANCE

Team performance has been addressed in the team literature. (Doinne Atwater & Spangler, 2004) appraised a generalized framework that includes inputs (i.e. resources), processes (i.e. collective effort) and outcomes (i.e. specific performance indicators). Because specific performance indicators and availability of certain resources may vary from team to team, it is essential to

develop and agree criteria for evaluating performance as the project develops. Accordingly, several researches have examined performance inducers for the overall construction industry. However, Nzekwe-Excel Nwagboso, Proverbs, and Georgakis' (2005) satisfaction parameters lean towards team spirit building. In their study, satisfaction 'stimulants' are regarded as correlates of successful project outcome. Other studies emphasised individual qualities of team member do not naturally add up to the success of the team except the qualities is collaborated. Duygulu & Ciraklar (2009) maintained that performance expectations differ depending on groups receiving services while Odusami Omirin & Iyagba, (2003) placed emphasis on the project manager's competence, qualification and profession. There is therefore no known correlation between leadership traits and team performance.

The traditional project management practice emphasizes procedural, managerial and operational functions benchmarked on coordinating and controlling project's internal and external resources (Dominick *et al.* 2004). As a result, the project organisation is driven towards meeting time, budget and technical objectives. But due to an increasing rate of technological change and globalisation, impetus has shifted to collaborative working by project teams. Also, the need for cross-functional competencies has also increase. However, while procedural and operational issues are important, researchers and professionals believe projects can be more successful when leaders encourages the realisation of members individual objectives. The present study aims to evaluate the impact of leadership traits on project success. The objective of the study is to determine leadership traits that enhance collaborative working and its impact on project team's effectiveness in construction projects. In this context, project success is assessed as the project management effectiveness in terms of concern for people and his ability to satisfy the team to deliver on project objectives as a correlate of successful project outcome. The departure in project management practice imposes the need to understand fully the leadership traits which enhances the realisation of project objectives in the emerging environment. Drives towards innovation in projects in different parts of the world also place impetus on the need to understand the leadership traits that will support successful delivery outcome in emerging project environments.

In this light of reality, based on literature's failure to address this problem in the research environment, there is need for an empirical study to investigate the leadership traits that can improve team performance as a measure of success in construction projects. The relationship is hypothesized on project management success factor 'empowering team members to perform creatively'. Although, some aspect of the leadership competence have been studied (Turner & Muller, 2005; Zhang, 2009) and the relationship between project success and leadership style apparent, the trait set peculiar to successful project in the study environment is not apparent. To determine this relationship and based on an earlier studies by Turner & Muller *Ob cit*; an aspect of the managerial competence trait was studied. The research question is to determine the extent in which 'collaborative leadership trait' satisfies team building imperatives generated individually and collectively from the literature and practice thereby 'empowering the team to perform creatively' as a determinant of successful outcome in projects. The need is based on assertion in the literature that leadership trait should match the needs of the project stakeholders (PMI, 2008 & Zhang, 2009). While the term 'stakeholder' is comprehensive and used pluralistically, the study focused on the upstream stakeholders' set which constitutes the project team. The study also seeks to buttress the need to determine leadership traits of the project managers' as a behavioural inputs in delivering on project objectives. Although, the role of the project managers have been largely ignored in research (Turner & Muller, 2005); few studies continually solicits respondents 'project managers' opinion of their own impact on project success. This approach will lead to self-reporting bias. An alternate approach is used in this study. The perceptions of stakeholders in the project teams were elicited. The importance of determining perceptions is predicated on its ability to influence decision, team behaviour and product outcome (Dada, 2013).

4. VARIABLES OF THE STUDY

Ekung (2012), Duygulu & Ciraklar (2009) and Nauman & Khan (2008) shared corroborative views on the effective leadership traits for successful project outcomes, team effectiveness and project management effectiveness. The presents study adopts the 'collaborative management style as the umbrella trait which encompasses twelve other leadership traits drawn from emotional, managerial competencies namely: 'effective communication'; 'problem solving ability'; 'accessibility'; 'honesty and integrity'; 'self- confidence'; 'effective time management'; 'result oriented'; 'forward looking'; 'ability to delegate tasks'; 'competence'; 'enthusiasm'; and 'persuasiveness and social adaptability' validated relevant to construction project delivery in an earlier study by the author.

Eight factors are used to determine the impact of leadership traits on team spirit: level of involvement; open and honest communication; level of commitment; high level of self-confidence; proven loyalty to each other; consultation with other team member; and an atmosphere of trust.

Nzekwe-Excelet *al.* (2008) developed satisfaction parameters for evaluating team performance as a correlate of project success. They defined satisfaction as a '*measure, or the extent to which the needs, requirements and expectations of clients, team members and customers for a project are met*'. Their satisfaction parameters were defined along four most commonly identified success criteria in the construction industry; cost, quality, safety and time with 16 attributes. **Cost:** 'Project fee is paid for as agreed'; 'Changes are fairly introduced'; 'Supplier cost estimates are in accordance with my requirements'; and 'Flexibility for changes or introduction'. **Quality:** 'Project design contains sufficient details'; 'Project consultants are responsive to question and changes'; 'Open and friendly communication'; 'Client interactions are open and friendly'; and 'Minimal defects in supply'. **Safety:** 'Project schedules are detailed and easy to understand'; and 'Health, safety, and risk procedures are with no incidents'. **Time:** 'Project is completed on time'; 'Communication flow is consistent'; 'Response to complaints is quick production'; 'Ensures that changes are introduced as early as possible'; and 'Supplier's ability to meet my deadlines'. By satisfying these stimulants the team members are adjudged 'empowered to perform creatively'. Two research hypotheses are proposed:

Hypothesis 1(H₀): *there is no significant relationship between project managers' collaborative leadership traits and team spirit*

Hypothesis 2 (H₀): *there is no significant relationship between project managers' collaborative leadership traits and team performance.*

5. RESEARCH METHODOLOGY

The study is an inferential survey research. Data were collected using structured questionnaire from 172 professionals on 42 projects completed in the last three years. Three years from completion was selected because empirical evidence reveals most project review and feedback are done within this time frame and memories on the project are deemed fresh(PMI, 2008). Projects were carefully selected based on strong variables of multi-cultural teams and construction cost above N2Billion. To facilitate the selection, projects with disperse participants in different states were targeted. The objective was to select projects that meet the changing project environment in Nigeria. They include roads, bridges, housing and other infrastructures. Government archival data were obtained from Ministries of Works, Housing and Transport in selected states and project team address and details were obtained. Participants were sampled using snowballing. The approach was deemed most suitable because most projects studied have

been completed and team members disengaged. Snowballing involves selecting samples based on network (Kumar, 2011) and is widely used in construction management research (Dada, 2013). The study was conducted in six States of the Niger Delta Nigeria. The Niger Delta occupies south-south and part of south west Nigeria. It is the oil rich region and it was selected for the study due to the massive infrastructural development in the area in the last few post amnesty period. 42 projects with 172 participants comprising Architects, Builders, Engineers, Project Managers and Quantity surveyors were contacted for information about the projects they were involved. 20 projects are located in Akwa Ibom State, 4 in Cross River, 6 in Delta, 4 in Rivers, 6 in Edo and 2 in Bayelsa.

Data were collected using scale 1- *strongly disagree* to 5- *strongly agree*. The data were collected in two tiers. First the respondents were asked to identify the preponderance of the selected leadership traits as relevant to promoting collaborative leadership. Second, they were required to rank the degree in which identified traits realised certain performance satisfiers in team spirit building and performance stimulation. Data were analysed statistically using SPSS after reliability test with Alpha Cronbach Test. This was to validate the stability of the data collection instrument and accuracy of collected data. Accordingly, the value of 0.78 was obtained and this is an indication of strong stability and reliability. Mean item score was used to determine the degree of impact while hypotheses were tested using chi square.

6. RESULTS

The objective of the study was to determine the impact of collaborative leadership traits on team performance as correlates of successful project outcome. Descriptive statistics of the project studied indicates there are 43% roads, 29% tourism projects, 19% housing and 9% other related infrastructure projects. Road works include bridges, flyovers and drainages while tourism includes parks, stadia, cinemas and hotels. Over 48% of these projects are above 20Billion Naira, 38% are above N5Billion but below N20Billion Naira while only 18% are below N5Billion Naira respectively. Every project studied utilizes multicultural teams comprising of State, National and Foreign nationals. The study determines the extent in which collaborative leadership trait promotes team spirit as an indicator of the ability to perform creatively. The collaborative leadership traits of the construction project manager highly promotes level of involvement, enhanced communication and level of commitment in the team; and averagely influence level of self-confidence, promote loyalty to each other, improve consultation and build trust (Fig 1). Improved level of involvement ranked 1st, enhanced open and honest communication ranked 2nd, promote level of commitment 3rd while influence level of self-confidence and proven loyalty to one another ranked 4th and 5th respectively. Others are promotes consultation among team members, promoting atmosphere of trust 6th and 7th. The mean score of 3.00 and above was validated critical to accept result. Accordingly all seven indicators of team building have mean item score above 3.00

Table 1: Project and Team Characteristics

Type of Project				Project Costs			Team Members' Nationals		
Roads	Tourism	Housing	others	<N5Billion	<20Billion	>20Billion	State	National	Foreign
18	12	8	2	4	16	20	20%	60%	20%

Similarly, high ranking results were obtained on the impact of collaborative leadership trait on team performance. Consistent communication flow ranked 1st on the influence of collaborative leadership trait on team performance (Fig 2). Consultant response to questions and changes ranked 2nd, while client ability to maintain open and friendly interaction ranked 3rd. others are

changes are fairly introduced 4th; project is paid for as agreed 5th, project is completed on time 6th, and health, safety and risk procedures are with no incidents 7th.



Hypotheses Testing

The null hypothesis is accepted with a P-value of 0.05 and above while the alternate hypothesis is accepted with a P-value less than 0.05

Hypothesis 1 H_0 : there is no significant relationship between project managers' leadership traits and team spirit.

Alternate H_1 : there is a significant relationship between project managers' leadership traits and team spirit.

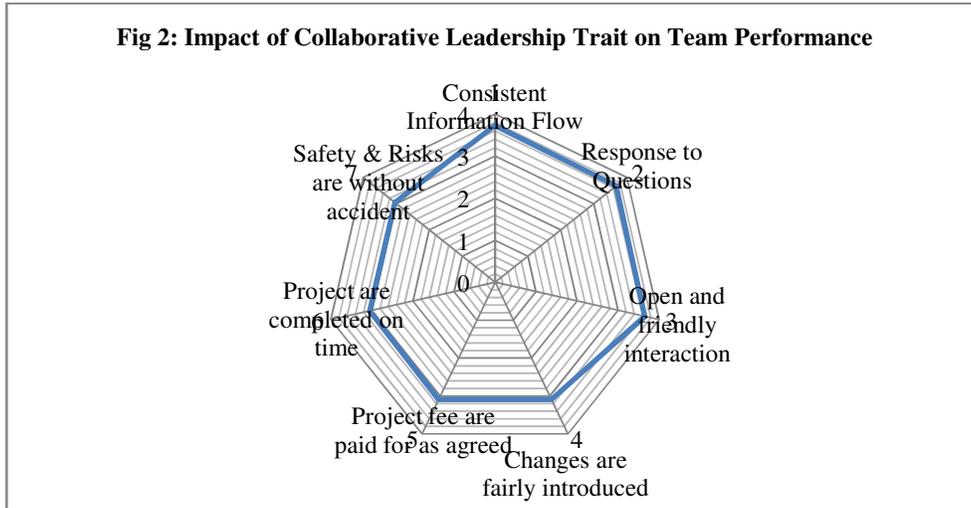


Table 2: Influence of Collaborative Leadership Trait on Team Spirit

Leadership Traits/Team Spirit Factors	α^2	df	P-value	Decision
Promote level of Involvement	24.78	16	2.82	Accept
Enhanced open and honest Communication	22.05	3	1.94	Accept
Promote level of Commitment	14.62	9	5.26	Accept
Ensure collaborative decision making	5.75	12	0.06	Accept
Promote high level of self confidence	28.31	12	1.45	Accept
Motivate proven loyalty to each other	14.47	9	4.64	Accept
Encourage consultation among team members	13.28	9	0.05	Accept
Ensures an atmosphere of Trust	82.46	9	24.49	Accept
	16.48	9	02.14	Accept

=Number of respondents; df = degree of freedom; and α^2 = chi square value

Hypothesis 2 H_0 : there is no significant relationship between collaborative leadership traits and team performance.

Alternate H_1 : there is a significant relationship between collaborative leadership traits and team performance.

Table 3: Influence of Collaborative Leadership Traits on Team Performance

Leadership Traits/Team Performance Stimulants	α^2	df	P-value	Decision
Project is paid for as agreed	15.05	1	0.36	Accept
Changes are fairly introduced	8.15	3	4.45	Accept
Open and friendly communication	81.19	9	27.49	Accept
Project schedules are detailed and easy to understand				
Project is completed on time	12.99	9	0.61	Accept
Communication flow is consistent	47.99	9	6.69	Accept
Client interaction are open and friendly	31.89	9	0.60	Accept

10.05	9	0.02	Accept
N=Number of respondents; df = degree of freedom; Standard deviation; α^2 = chi square value			

In Table 2 and 3, Null hypotheses H_0 are accepted. There is therefore significant relationship between collaborative leadership trait and team spirit as enabler to perform creatively and team performance as correlates of successful outcome.

7. DISCUSSIONS

The collaborative leadership trait of the construction project manager significantly influence project outcome if it delivers on key team spirit building factors. Respondents ranked as critical seven indicators of effective team spirit factors against twelve leadership traits which enhances collaborative working. Project managers' ability to promote valuable level of involvement of all team members, enhance consultation, communication, level of commitment, collaboration, trust, self-confidence, and proven loyalty to each other among team members. The result of the findings reveals project managers who exhibit these traits will effectively build a good team spirit; hence they were rated above average signifying strong agreement. These finding of the study is supported by the findings of Oberlender (2000) and Oyedele (2010). Oyedele (2010) discussed 'Team management: lessons from the leadership styles of successful team managers' and opinionated that in order to build an effective team; the team leader must promote related factors. Oberlender (2000) discussed key factors in team leadership and emphasized that team communications are vital to a successful team because highly motivated and dedicated worker wants, and need to be informed. The high ranking of the project manager's ability to promote effective participation of all members is not unexpected as earlier studies emphasized people as the key resources to successful project outcome. Makilouko (2004) found that project managers are primarily people- focused while Lee-Kelly (2003) found that half of their study sample was relationship – oriented. Contemporary approaches for delivering superlative results in timely completion, quality projects and on budget and possibly savings are built around collaborative working. Wood (2005) had found 20 -30% savings on time and cost with partnering delivery approach while not jeopardising quality.

The collaborative leadership trait of the construction project manager promotes team performance if it satisfies certain satisfaction criteria. The finding of the study revealed quality based satisfiers as the best team performance stimulators. Project consultants are responsive to questions and changes that is the ability to communicate effectively and adaptability traits of the project manager receive high rating alongside communication flow is consistent. Clients' interactions are open and friendly (quality based satisfier) also rated third depicting emphasis on quality project delivery by project team members. Other performance stimulants considered critical by respondents include remuneration (project fee is paid for as agreed) fourth and changes are fairly introduced fifth.

However, the result with 'project fee is paid for as agreed' was not unexpected. This result is similar to Morgan Maslow proposition that people are driven by needs that actualises oneself than even the basic necessities of life. Similarly, Thamhain (2004) identified two sets of variables team leadership and team environment as strong indicators of team performance. The study's satisfaction stimulators are a combination of these two variables as it evaluates leadership with factors in the project environment. Raiden, Dainty and Neale (2004) identified individuals need to meet expectation in terms of gaining experience or training as a stimulant to team performance while Dionne, Atwater & Spangler (2004) also found strong ties between leadership attributes and team performance. The implication from this study reaffirms the need for a complete move away from the adversarial traditional contracting towards relational contracting in order to promote collaborative leadership.

8. CONCLUSION

This study, using survey assessed the impact of collaborative leadership trait on team performance as trigger of successful project outcome. The test of the study's hypotheses indicates strong relationship between collaborative leadership traits and team performance. The implication therefore is that, project team members' satisfaction translates into successful project. It is also an indication that these leadership traits are essential for effective team performance and successful construction projects delivery. Concern however arises in respect to the use of self-report data although it is not uncommon with management research. This approach is limited by the ability to influence results due to mutual origin prejudice. However, the study sampled only construction project team members and therefore did not include construction managers themselves. Future research may be necessary using other approach for data collection and on mono-cultural projects since the present studies examined multi-cultural projects. The current result advance significantly the understanding of team leadership attributes and further buttress what behaviour and team nourishing ingredient is necessary for successful project outcome. There is the tendency that further studies may yield innovative conceptual acumen that will advance successful project management.

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