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Assessment of Effective Project Delivery in the Nigerian Construction Industry: A Focus on Leadership Capability

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Abstract: Leadership be it good or bad has a very significant impact on the overall success or failure of any endeavour. Ineffective leader is a common cause of employee disengagement and motivation loss, which often lead to poor performance, project delays and delivery in the construction industry. This research was aimed at assessing the leadership capability in the Nigerian construction industry towards an effective project delivery. The objectives were to assess the leadership capabilities in the construction industry in Lagos State, to assess the effective leadership skills and styles used in Lagos construction industry, to assess the factors affecting project delivery among professionals in the construction industry in Lagos state and to ascertain ways of improving on leadership capabilities for effective project delivery. Data were collected from both secondary and primary sources. The primary data were from structured questionnaires administered on 154 construction professionals employed in both private and public organizations in Lagos State. Frequency Analysis, Average Index and Relative importance index were used to analysed the data. The results showed that Proper planning of projects, Communication skills, Effective leadership role and Industrial training are the panace for effective project delivery. The correlation coefficient of the measure of the relationship between leadership capability and effective project delivery in the construction industry in Lagos state was 0.31 (p = 0.022). It is therefore, recommended that for better project delivery in the construction industry in Lagos State, there has to be a higher leadership capabilities and managerial skills.

Keywords: Leadership, capabilities, construction, project, delivery,

Introduction

In the vein of the present movement of transforming one of the densely populated black nations in the world, heavy infrastructural projects replace the existing ones and major sophisticated construction project springs up daily. The observation to the successful completion of such projects efficiently, have depicts leadership frenzy appropriateness and capability among the other reasons amidst the stakeholders in the construction industry.

Leadership, being the act and the skill of leading people (project team) setting direction and influencing them to follow and to achieve a set goal. Maxwell (1993). Leadership is one of the most important and essential factors in project execution, management and delivery. Walker (1999) defines leadership as the manner in which the project leader conducts themselves in their role, in order to obtain the best performance from the people they are leading.

Numerous literatures, Vroom and Jago (2007), Bennis (2007), Avolio (2005), Thor and Ofori (2008), reject a strict single definition of leadership rather questioned and argued persistently whether leaders are born or made and whether there is a difference between leadership and management. The leader is responsible for the performance of their team and the achievement of their goals. Also, Suresh (2009), an ardent advocate, emphasised that the construction leader who has good and high skills can alter and modify their approach to overcome challenges and guarantee success.

The construction industry has a greater need for leadership than any other field of endeavour has emphasized by Ofori (2008) and afterward summarized reasons that sustain this argument thus: first, “construction projects are

large and technically complex and they involve a combination of specialized skills. Thus, the teams are not only large, but also multi-disciplinary, multi-cultural and from several different organisations. Second, the projects are typically expensive and the stock of buildings represents a large proportion of a nation's savings. Thus, the quality of the built product is of the essence. Thor (2012), stresses thirdly that the projects take a long time to complete and involve a large number of discrete activities, which increases certain time-related risks and exacerbate problems with communication, co- ordination and the ability to manage a wide range of risks. He further finally pointed out that projects and the constructed product have serious implications for the health and safety of the workers involved, as well as the general public. Thus, due care, diligence and expertise are necessary safeguards". This underscores the importance of leadership in the management of people-oriented project since leadership is a key factor for success in any activity that involves collaboration among a group of people. As any project's success is generally defined on the basis of time, cost, or quality, we cannot diminish the impact of key individuals on the project's ultimate success or failure.

Umeora (2013), supported his argument with the fact that incessant cases of building collapse and project performance deficiencies such as cost and time overruns, poor work quality, technical defects, poor durability of projects, as well as inadequate attention to safety, health and environmental issues are more prevalent in developing countries than elsewhere. This can only be piloted on appropriation of an effective leader in construction; thus, corroborate that leadership capability more acute. Despite this recognition that leadership is important at all levels of the construction industry, emphasis has been on the technical and management aspects, and leadership receives inadequate attention.

This study sets out to understand the contributions of the capabilities of the leadership in the construction in industry for effective project delivery in Nigeria by answering the following questions: What are the capabilities of leadership in project delivery in the construction industry? What are the leadership skills identified among leaders in the construction industry in Nigeria? And what are the factors affecting project delivery in the construction industry in Nigeria?

Research Hypothesis

H_0: There is no significant relationship between leadership capability and effective project delivery in the construction industry in Nigeria.

H_1: There is a significant relationship between leadership capability and effective project delivery in the construction industry in Nigeria.

Methodology

Self-administered structured questionnaire survey was used to answer the objectives of the study. This method is easier and demands less time to complete for data collection and analysis *(*Wuensch, 2005). With the adoption of Likert rating, information were obtained from the respondents. In analyzing the data, frequency distributions, means and standard deviation, correlation and regression analysis were employed while Statistical Software for Social Sciences (SPSS 23) was used in analysing the collected data.

RESULT AND FINDINGS

The demography of the respondents revealed that 85.2% of them are male, 87% are 25 years or more, 61.1% are married, 63% had worked for over 5 years in their current organisations and 67% have been in the industry for over 5 years. 44% of the respondents are consultants, 51.9% are contractors and only 3.7% are clients. 42.6% are members of the Nigerian Institute of Building (NIOB), 24.1% are from Nigerian Institute of Quantity Surveying (NIQS), 18.5% from the Nigerian Institute of Architectures (NIA), 13% from the Nigerian Society of Engineers (NSE) , while only 1.9% of them belong to other professional associations.

In addition, the table also shows that 42.6% of the respondents are Project managers, 44.4% are supervisors, 7.4% are foremen while 5.6% constitute others. Lastly, while Only 3.7% of the respondents hold a doctorate degree in a construction related field, 44.4% hold Master of Science (M.Sc)., 38.9% are first degree holders, 13% hold ND/NCE certificate.

The analysis indicates higher level of responsibility (male), academic education (Master) and experiences in project delivery (Professional in the building institute with a decade of experiences)

Research Question One: What are the functions of leadership in project delivery in the construction industry?

Table 1: Functions of leadership in project delivery

S/N	Leadership functions in construction.	Very important	Important	Relatively important	Less important	Not important
1.	Proper planning of projects	143 (92.6)	11 (7.4)	-	-	-
2.	Develop the knowledge and skills of members	60 (38.9)	77 (50)	17 (11.1)	-	-
3.	Ensure effective communication among members	88 (57.4)	57 (37)	9 (5.6)	-	-
4.	Lead construction team toward ultimate objectives	100 (64.8)	40 (25.9)	11 (7.4)	3 (1.9)	-
5.	Identifying key time, cost, and quality constraint.	88(57.4)	54 (35.2)	12(7.4)	-	-
6.	Handles changes in the design and design development.	66 (42.6)	63 (40.7)	23(14.8)	2 (1.9)	-
7.	Creating a supportive work environment for the project participants.	60(38.9)	80(51.9)	9(5.6)	5(3.7)	-
8.	Aids in harmonizing goal and preventing conflict management in construction projects.	66(42.6)	71 (46.3)	14(9.3)	3(1.9)	-
9.	Resource control in construction projects	68 (44.4)	66 (42.6)	14 (9.3)	6 (3.7)	-
10.	Helps in creating group cohesiveness which helps in proper utilization of the team work.	77(50)	54 (35.2)	17(11.1)	6 (3.7)	-
11.	Helps to manage cultural issues during the construction process.	57(37)	40(25.9)	42(27.8)	6(3.7)	8 (5.6)
12.	Coordination of construction process.	91(59.3)	57(37)	6(3.7)	-	-
13.	Implement policies and procedure in construction projects.	71(46.3)	57 (37)	23(14.8)	3(1.9)	-
14.	Maintains project objectives.	94 (61.1)	42 (27.8)	9(5.6)	9 (5.6)	-
15.	Motivate other workmen to achieve results on construction projects.	91(59.3)	43(27.8)	14(9.3)	7(3.7)	-

Table 1 shows that 100% of the professionals rated proper planning of projects as important or very important leadership function, 88.9% rated developing the knowledge and skills of members, 94.4% rated effective communication among members and 90.7% rated leading the construction team toward ultimate objectives as important or very important leadership function.

In addition, 92.6% viewed identifying key time, cost, quality constraint as important or very important, 83.3% rated handling changes in the design and design development, 90.8% rated creating a supportive work environment for the project participants and 88.9 rated ads in harmonizing goal and preventing conflict management in construction projects as important or very important leadership function in the construction industry.

Furthermore, 87% viewed resource control in construction projects as important or very important, 85.2% rated helping in creating group cohesiveness which helps in proper utilization of the team work, 62.9% rated helping to manage cultural issues during construction process and 96.3% rated coordination of the construction process as important or very important leadership function in the construction industry.

Lastly, 83.3% rated implementing policies and procedure in construction projects as important or very important leadership functions, 88.9% viewed maintaining project objectives and 87% rated motivating other workmen to achieve results on construction projects as important or very important leadership function in the construction industry.

Research Question Two: What are the leadership skills identified among leaders in the construction industry in Nigeria?

Table 2: Leadership skills identified among leaders in the construction industry

S/N	Effective Leadership Skills	Most relevant	Relevant	Partially relevant	Not relevant
1.	Communication skills – oral & written.	131(85.2)	17(11.1)	6(3.7)	-
2.	Motivating and promoting.	77 (50)	74(48.1)	3 (1.9)	-
3.	Honesty and development of trust.	80(51.9)	68(44.4)	6(3.7)	-
4.	Self-awareness	65(42.6)	63(40.7)	20 (13)	6(3.7)
5.	Teamwork, delegation.	102(66.7)	40(25.9)	9(5.6)	3(1.9)
6.	Flexibility.	71(46.3)	68(44.4)	11 (7.4)	3(1.9)
7.	Achievement of targets.	108(70.4)	43(27.8)	3 (1.9)	-
8.	Goal orientation.	86(55.6)	63(40.7)	3 (1.9)	3(1.9)
9.	Team building, formation, development.	97(63)	54(35.2)	3 (1.9)	-
10.	Persuasiveness.	83(53.7)	63(40.7)	6(3.7)	31.9)
11.	Leading by example.	108(70.4)	43(27.8)	3 (1.9)	-
12.	Assertiveness, willingness to assume responsibility.	91(59.3)	54(35.2)	9(5.6)	-
13.	People orientation.	65(42.6)	71(46.3)	17(11.1)	-
14.	Technical expertise.	105(68.5)	46(29.6)	3 (1.9)	-
15.	Problem identification and solving.	88(57.4)	54(35.2)	11(7.4)	-
16.	Emotionally balanced	86(55.6)	49(31.5)	17(11.1)	3(1.9)

Table 2 reveals the relevant leadership skills identified in the construction industry in Lagos State. 96.3% identified communication skills (oral & written) as relevant or most relevant skills, 98.1% motivating and promoting, 96.3% identified honesty and the development of trust, and 83.3% identified self-awareness.
In addition, others skills identified are: teamwork and delegation (92.6%), flexibility (90.7%), achievement of targets (98.1%) and goal orientation (96.3%).
Furthermore, 98.1% identified team building, formation and development as relevant or most relevant skills, 94.6% identified persuasiveness, 98.1% identified leading by example and 94.4% identified assertiveness, willingness to assume responsibility as relevant or very relevant skills in the construction industry.
Lastly, other skills identified were: people orientation (89.9%), technical expertise (98.1%), problem identification and solving (92.6%) and emotional balance (87%).

Research Question Three: What are the factors affecting project delivery in the construction industry in Nigeria?
Table 3: Measures of the factors affecting effective project delivery.

s/n	Project delivery	Very critical	Critical	Less critical	Not critical
1.	Effective leadership role	122 (79.6)	20 (13)	11 (7.4)	-
2.	Cost e.g. variation cost and modification cost	105(68.5)	40(25.9)	6(3.7)	3 (1.9)
3.	Time	100(64.8)	49(31.5)	6(3.7)	-
4.	Quality e.g. technical specification	117(75.9)	31(20.4)	3(1.9)	3(1.9)
5.	Participant satisfaction	68 (44.4)	66(42.6)	17(11.1)	3(1.9)
6.	User expectation	57(37)	57(37)	29(18.5)	11 (7.4)
7.	Safety	83(53.7)	54(35.2)	14(9.3)	3 (1.9)
8.	Environmental performance	74(48.1)	60(38.9)	14(9.3)	6 (3.7)
9.	Good organization strategic planning and management process	89(57.5)	46(29.6)	14(9.3)	6 (3.7)

Table 3 revealed that 92.6% viewed effective leadership role as either critical or very critical in the effective project delivery, 94.4% viewed cost as either critical or very critical in effective delivery, 96.3% viewed time as either critical or very critical in the effective project delivery and 96.3% rated the quality as critical or very

critical in effective project delivery. In addition, 87% viewed participant satisfaction as critical or very critical in the effective project delivery, 74% rated user expectation as critical or very critical in the effective project delivery, and 88.9% rated safety as critical or very critical in effective project delivery.
Lastly, 87% of the respondents viewed environmental performance as critical or very critical in effective project delivery while 87% viewed good organisation strategic planning and management process as critical or very critical in effective project delivery.

Research Question Four: What are the suggested ways of improving on leadership capabilities in the construction industry in Lagos state?

Table 4: Ways of improving on leadership capabilities.

S/N	Ways to improve leadership capability.	SA	A	N	D	SD
1.	Leadership development workshop.	80(51.9)	54 (35.2)	17 (11.1)	3(1.9)	
2.	Motivation	66(42.6)	71(46.3)	17(11.1)		
3.	Focus on developing existing talents	80(51.9)	49(31.5)	20(13)	6(3.7)	
4.	Retain talents.	77(50)	68(44.4)	3 (1.9)	3(1.9)	3 (1.9)
5.	Improve manager skills.	77(50)	74(48.1)	3 (1.9)		
6.	Drive innovations.	88(57.4)	49(31.5)	17(11.1)		
7.	Self-motivation, inspiration.	88 (57.4)	54(35.2)	11(7.4)		
8.	Individual training.	86 (55.6)	51(33.3)	17(11.1)		
9.	General management training.	80 (51.9)	68(44.4)	6(3.7)		
10.	Mentoring.	83(53.7)	43(27.8)	29(18.5)		
11.	Investing in strengthening leadership capability.	86(55.6)	49(31.5)	17 (11.1)	3(1.9)	
12.	Financial benefit.	63(40.7)	43(27.8)	46(29.6)	3(1.9)	
13.	Give leaders time and space to think strategically.	60(38.9)	68(44.4)	23(14.8)	3(1.9)	
14.	Industrial training.	91(59.3)	54(35.2)	9(5.6)		
15.	Parental training.	37(24.1)	51(33.3)	37(24.1)	20(13)	9(5.6)
16.	Ensure project managers are equipped to drive leadership capability.	83(53.7)	46(29.6)	23(14.8)	3 (1.9)	
17.	Increase collaboration between clients, construction teams and other stakeholders.	103(66.7)	37(24.1)	14(9.3)		
18.	Improve leaders' communication skills.	94(61.1)	49(31.5)	11(7.4)		
19.	Management should acquire modern ICT tools to construction leaders.	80(51.9)	51(33.3)	20(13)	3 (1.9)	
20.	Imbibe good and godly characters in leaders.	71 (46.3)	29(18.5)	51(33.3)	3 (1.9)	

SA = Strongly Agreed, A = Agreed, N = Neutral, D = Disagreed, SD = Strongly Agreed

Table 4 shows all the suggested ways to improve on project delivery among leaders in the construction industry. 87.1% suggested leadership development workshop, 88.9% suggested motivation, 87.4% suggested focusing on developing existing talents and 94.4% suggested retaining talents. Also, other suggestions were: improving manager skills (98.1%), driving innovations (88.9%), self-motivation, inspiration (92.6%), and individual training (88.9%). In addition, others suggested general management training (96.3%), mentoring (81.5%), investing in strengthening leadership capability (87.1%), and financial benefits (68.5%). Furthermore, 83.3% suggested giving leaders time and space to think strategically, 94.4% suggested industrial training, 57.4% suggested parental training and 83.3% suggested ensuring project managers are equipped to drive leadership capability. Lastly, other suggested improvements include, increased collaboration between clients, construction teams and other stakeholders (90.7%), improve leaders' communication skills (92.6), acquisition of modern ICT tools for construction leaders (85.1%) and imbibing good and godly characters in leaders (64.8%).

Table 5: The correlation coefficient between effective project delivery and leadership capabilities in the construction industry

Variables	Mean	Stdev.	N	R	P	Remarks
Leadership capabilities in the construction industry	87.55	7.84	54	0.31	0.022	Significant
Effective Project delivery	86.26	10.57				

The correlation coefficient of the measure of the relationship between leadership capability and effective project delivery in the construction industry in Nigeria was 0.31 with a p-value of 0.022. The null hypothesis (H_0) is rejected and it is concluded that there is a significant relationship between leadership capability and effective project delivery in the construction industry in Nigeria ($p < 0.05$). The implication is that with higher (more) leadership capabilities, project delivery in the construction industry in many parts of Nigeria will be more effective and successful.

Table 6: Modelling project delivery with effective capabilities of leadership in the construction industry

Variable	Coefficients	Std error	T	P
Constant	48.565	15.606	3.176	0.003
Leadership capabilities	0.419	0.178	2.361	0.022
$F_{1,52} = 5.574$; $p = 0.022$; $R^2 = 0.097$				

The model fitted for project delivery is given as:

Project Delivery = 48.565 + 0.419*Leadership Capabilities

This result implies that a percent increase in leadership capability will increase project delivery by 0.42% in the construction industry and this contribution of leadership capability is significant ($p < 0.05$). However, in the absence of leadership capabilities, project delivery will be in the region of 48%. The coefficient of determination (R^2) of 0.097 implies that leadership capabilities only accounts for 9.7% of the total variability in project delivery in the construction industry.

Findings

The following are the findings from the research:

- All the leadership functions in the construction industry identified during the cause of the study were perceived to be very important in a construction project delivery. All (100%) of the respondents rated 'Proper planning of project' as very important, a high percentage (96.3%) rated 'Coordination of the construction process' as an important leadership function in the Nigeria construction industry.
- The best and most effective skills a good leader handling construction project must possess is " leadership by example" and "expertise in technical aspects."
- Transformational leadership style, i.e. ability to demonstrate self confidence and conviction, inspiring workers to perform at a higher level and a host of others should be adopted for use during construction projects as identified by respondent in respect of transactional and laissez –faire leadership style.
- Effective leadership role was identified as the most critical factors which catalyzes effective project delivery in the construction industry.
- Construction organizations and individuals must improve their various managerial skills and also engage in general periodic managerial training so that they can effectively manage a construction project by ensuring timely completion, within cost and to specified standards.

Conclusions

Leadership is an important skill of a project manager. It is the project manager's responsibility to develop leadership and people skills. The two major challenges in the industry in terms of leadership seem to be the lack of skills and the lack of experience by the project managers. Communication and people skills are seen as important skills to be applied by a project manager, yet it is not very successfully applied or developed.

Project management in the building industry needs to be efficient and success oriented. The impact of losses and damages can be large; therefore, it is primarily the leader's responsibility to ensure effective and efficient management of the project.

The research identified that recognition of effective and successful leaders within the construction industry would help to promote leadership and inspire others.
Self-motivation and inspiration were regarded as key factors in developing leadership potential and certainly two of the important traits of a project manager are management and leadership skills. When these two project management traits are successfully combined and applied, the success rate of the project will most probably increase.
Conclusively, through extensive study it was deduced that with higher (more) leadership capabilities, project delivery in the construction industry in Nigeria will be more effectively successful.

Recommendations

As a results of strong cases, the study therefore recommends that:

1. Construction companies should focus more on leadership development programmes tailored specifically for construction industry professionals. These leadership development programmes should include education and training (particularly communication skills and general management training), work experience, mentoring schemes and secondment programmes.
2. They should also include strategies for identifying the leaders of the future, and for rewarding and celebrating success.
3. Construction industry must look to positively develop its working cultures and to break down any organisational barriers that do not recognise, and provide opportunities for those that show leadership potential. This is in line with the belief of The Chartered Institute of Building (CIOB).
4. Transformational leadership style should be practiced while celebrating and communicating leadership successes on construction projects, which raises individual's profile should also be continued where it exists, and developed where it doesn't.

REFERENCES

Bresnen, M.J., A. Bryman, A. Beardsworth, J. Ford and E. Keil. (1986). Leader Orientation of Construction Site Managers. *Journal of Construction Engineering and Management*, 118(3): 370-386.

Chan, Antony T.S., and Edwin H.W. Chan. (2005). "Impact of Perceived Leadership Styles on Work Outcomes." *Journal of Construction Engineering and Management,* 131(4): 413-422.

Collins, Jim. (2001) Good to Great. New York, NY: *HarperCollins Publishers,* Inc.

Conger, J.A. (1998). Qualitative research as the cornerstone methodology for understanding leadership. *The Leadership Quarterly*, 9(1): 107–121.

Gharehbaghi, Koorosh, and Kerry McManus. (2003). "Effective Construction Management." *Leadership and Management in Engineering,* January, 54 – 55.

Godwin, R.S.C. (1993). Skills Required of Effective Project Managers. *Journal of Management in Engineering,* 9(3): 217-226.

Griffith, Andrew F., Edward Gibson Jr., Michele R. Hamilton, Aniello L. Tortora, and Charles T. Maxwell, John C. (1993) Developing the Leader Within You. Nashville, Tennessee: Thomas Nelson, Inc

Hackman, J.R. and Wageman, R. (2007). Asking the right questions about leadership. *American Psychologist,* 62: 43–47.

Herbert, A., Martvall, K., and Wirdenius, H. (1970). Site Management and Production Disturbances. *Build Tech Manage.* 7: 19–20.

Langford, D. A., Fellows, R., Hancock, M., and Gale, A. (1995). Human Resource Management in Construction, Longman: London.

Meindl, J R., and S B. Ehrlick. (1987). "The Romance of leadership and the evaluation of organizational performance." *Academy of Management Journal,* 30: 90 - 109.

Nahavandi, A. (2003). The Art and Science of Leadership. Upper Saddle River, New Jersey: Prentice Hall.

Odusami, K.T. (2000). Perceptions of Construction Professionals Concening Important Skill of Effective Project Leaders. *Journal of Management in Engineering,* 18(2): 61-67

Ofori, G. and Toor, S.R. (2012) Leadership and construction industry development in developing countries", J. of Constr. in Dev. Countries, 17(1): 1-21.

Umeora, C. O (2013). The incidence of building collapse and emergency managemt in Nigeria. *Journal of Environmental Science and Resources Management*, Vol. 5, No. 2.