

Exploring the Impacts of Fayol's Management Principles on Project Success in Building Construction of Nigeria

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Abstract

The complex nature of construction activities which involves various stakeholders' struggles to attain client objectives gave rise to the adoption of Henry Fayol's principles of management by construction firms. However, the inter-correlation of these principles and how its implementation influences project success in practice is not well examined, lacking or not investigated at all. Therefore, this study, aimed at determining the influences of Henry Fayol's 14 management principles on projects success in terms of correlational strength and impacts on project success. Study adopts descriptive and explorative design through survey approach. Data were collected through administering of questionnaires to contractors on sites using convenient and stratify sampling techniques. Data analyses using Pearson correlation and multiple regression analysis. Major finding show that, all the principles of management significantly correlates with one another and that deviation of work and discipline, unity of command and unity of direction identified as very strongly correlated principles in managing of building construction projects on sites. Moreover, the regression analysis indicates that the fourteen principles of management combined together explained at least 30.9% predictive capacity with discipline and divisions of work have the highest contribution of (66.2%) & (60.2%) toward projects success. The study concludes that, Henry Fayol's principles of management are very significant for managing construction sites with division of work and discipline as the most perceive important principles in practice. Study recommends the use of these principles by construction managers in managing building projects in Nigeria.

Keyword: Henry Fayol's, Project Success, Construction, Correlation and Impacts

1.0 INTRODUCTION

The complex nature of construction activities which involves various stakeholders' struggles to attain projects success gave rise to the adoption of Henry Fayol's principles of management by construction firms. Management regarded as a process that allows organizations to set their targets through planning, organization, control and the acquirability of their employees. In addition, management is essential for all organisations that want to be effective and achieve their objectives. Also, management skills are needed to improve the performance of an organisation in construction projects, and these involve many activities involving more people as a team working towards achieving organisational goal and objective (Kehinde et al., 2017). One way for attaining that is through the application of management principles on construction sites.

In place of that, Henry Fayol developed fourteen principles of management to consolidate these perspectives, which might serve as an effective way for an organisation to

achieve its aims and objectives (Uzuegbu & Nnadozie, 2015). Also, these management principles refer to a broad guideline that provides an overview of organisational decision-making (Godwin et al., 2017). Various sectors adopted the use of these principles in day to day activities which proved to be successful. According to Adeagbo et al., (2019) revealed that project managers always used most of these principles in the management of human resources on the construction site and acknowledged its importance within the construction industry of Nigeria. Also, Godwin et al., (2017) analysed Henri Fayol's 14 principles of management and argued that it could be used brazenly as tools in start-up organisations for a better and more effective approach in attaining goals. Moreover, various authors like Adam and Suleiman (2018) argued that an organisation would have difficulty in achieving its goals without the use of these principles of management. Additionally, the finding of Adeagbo et al., (2019) concludes that years of experience of projects managers have a significant correlation with the application of these principles on construction sites for managing human resources.

One good advantage of these principles is that it addresses human behaviour based on the current situation in a productive manner (Godwin et al., 2017). Besides, over the years, management researchers have considered that Fayol's ' 14 principles of management have turned into today's managers' administration, especially after 1949 as the general and industrial administration in managing the activities of an organisation (Uzuegbu & Nnadozie, 2015). Given the applicability of each organisation in the global economy, it believed that Fayol's principles of management contribute significantly to firms or organisations in pursuing it stated aimed and objectives as well as attaining the client needs. Although, lack of planning and motivation, non-adherence to principles/standards, clashes of interest and corruption revealed as top challenges for the implementation of Henry Fayol's management principles on construction site of building projects (Adeagbo et al., 2019).

Even though the application of Henry Fayol principles of management seems too enforced and adopted within various sectors, especially in construction projects by projects managers on sites for projects delivery. However, the inter-correlation of these principles and how its implementation influences project success in practice is not well examined, lacking or not investigated at all. Therefore, this study, aimed at determining the influences of Henry Fayol's 14 management principles on projects success in terms of inter-relationship strength and impacts in practice. By doing so, it will create a clear avenue for the projects managers to properly utilised these principles within construction sites of Nigeria. Also, the study will give a greater emphasis on how these principles can be applied by a construction company and also identifying new strategies for the achievement of client/project objectives. In order to achieve the stated aim, the following research question formulated for the study;

- ✓ To what extent does Fayol's principles of management relates or correlate with one another in managing construction projects?
- ✓ How the implementation of Fayol's principles of management does contribute to projects success in building construction of Nigeria?

2.0 PRINCIPLES OF MANAGEMENT AND ITS IMPLEMENTATION.

According to Van-Vliet (2009) stated that Henri Fayol was able to synthesise 14 principles of management after years of study as follows;

1. Divisions of Work

The first management principle of Henry Fayol states that employees perform better in their work when they are designated to perform tasks according to their specialities. Therefore it is essential that the work is divided into a smaller element and manage by a various specialist (Uzuegbu & Nnadozie, 2015). The advantages of implementing these principles are that it promotes the effectiveness of the workforce, enhance productivity and above all ensure the

proper use of the workforce, keep them focused and industrious towards the achievement of project objectives (Van-Vliet, 2009).

2. Authority and Responsibility

Authority is the right to issue orders as defined by Fayol, whereas responsibility involves responsibility. Therefore, anyone who takes responsibility also is responsible for that work in whatever aspects might be. Van-Vliet (2009) States that, the management principle of Fayol in this regard is that an active manager exercises his authority to the best extent possible and does not absolve responsibility. Furthermore, Uzuegbu and Nnadozie (2015) also argue that this principle suggests that managers need authority to command subordinates to do jobs while they are accountable.

3. Discipline

A disciplined workforce is essential for improving quality and production quantities at sites. Due to that, Uzuegbu and Nnadozie (2015) believe that this principle, clearly defined regulations are advocated to achieve good discipline and obedience for employees. Also, discipline can be achieved by providing adequate supervision at all levels and that managers can provide their subordinates with an excellent example of discipline. Moreover, this principle is, therefore, crucial in the construction sector because without it; services will be reduced, client satisfaction would not be achieved, and even fraud will be reduced.

4. Unity of Command

This principle also stipulates that employees should receive orders and report directly to only one manager, which means employees should only be accountable to an immediate supervisor or superior (Uzuegbu & Nnadozie, 2015). Instead of that, Fayol claimed that when the control unit has been breached, authority is undermined; discipline is endangered, the order is disturbed, and stability threatened, distraction may likely result, in a breach of client objectives that has serious consequences.

5. Unity of Direction

This management principle is all about concentration and unity, and it means that the whole organisation should move in the right direction to a common goal, and it is essential if all employees of a company are to have one vision (Mbalamula et al., 2017). Therefore, it can be said that nearly all the categorizations of professionals working on a given project are aimed at ensuring that the projects fulfil their time, cost, quality and satisfaction objectives.

6. Subordination of Individual Interest

An organisation always has all sorts of interests. Henri Fayol stated that personal interest is subordinate to the interest of the organisation in order to have a functioning organisation. The focus is primarily on organisational goals and not on individual objectives. In other words, it says that employees should surrender their interests before the organisation's general interest (Tasie, 2017). The employees often overlook the interests of the organisation due to ignorance, egotism, laziness, lack of care and emotional pleasure.

7. Remuneration

In order to keep the staff motivated and productive, the management principle argues that pay should be sufficient. Fayol also believes employees should receive fair pay to provide equal satisfaction for employees and owners. The manager must, therefore, ensure that employees receive compensation based on their work.

8. Degree of Centralization

Management and decision-making authority in an organisation must be adequately balanced. This depends on the size, volume and hierarchy of an organisation. The concentration of decision-making powers within the top management implies centralisation. Decentralisation by Henri Fayol means that the process of decision-making is extended to mediate or lower management level.

9. Scalar Chain

In any given organisation, Hierarchy presents itself. This varies from the senior management to the smallest level in the company. Each employee may contact a manager or an emergency supervisor without challenging the hierarchy, in particular, if it concerns immediate superiors with reports of disasters. This principle is much more applicable within the construction sector with each party, knowing the clear line of competence and ordering the execution of a particular task during project execution on sites.

10. Order

This principle requires that employees in an organisation have the appropriate resources to work correctly in an organisation. The working environment must be safe, clean and clean as well as social order (Rodrigues, 2001). Fayol states that the physical and social factors such as land, raw materials, tools and equipment and staff should be adequately, systematically, and orderly arranged. In other words, the principle states that every land piece and every article should be used, economically, and as effectively as possible (Uzuegbu & Nnadozie, 2015).

11. Equity

The staff must be treated freely and equally, according to Henri Fayol. Managers should oversee this process and deal fairly and impartially and apply to all management levels. Equity means a blend of fairness, kindness and justice towards employees in (Tasie, 2017). Equity is a combination of fairness, kindness and justice for employees in (Godwin et al., 2017). In addition, their managers should be treated fairly and equally in order to achieve commitment and loyalty from their staff, particularly about their positions and authority.

12. Stability of Tenure

Management seeks to minimise the turnover of employees and to have the right personnel in the right position. Focus areas such as frequent position changes and adequate development have to be well managed.

13. Initiative (creative ideas)

Henri Fayol argued that employees should be allowed to express new ideas under this management principle as these might promote interest, engagement and provides the organisation with added value. Furthermore, under this principle, Godwin et al., (2017) stated that managers should from time to time; provide creative ideas, skills and methods for carrying out tasks. Also, to implement this principle in an organisation successfully, it involves managers being creative to introduce and implement new concepts, technologies, giving employees room to contribute to innovation and productivity in building projects.

14. Esprit de Corps

The esprit de corps management principle stands for worker participation and unity, and it contributes to cultural development and creates a mutual trust and comprehension atmosphere. [4] views esprit-de-corps as the level to which employees must achieve a common objective for an organisation to succeed, Fayol suggested that there should be a team spirit

amongst the employees of the organisation, all of whom must consider themselves members of organisations that maintain a high level of moral morality and unity.

3.0 METHODOLOGY

The study utilized a descriptive design using a survey study and explanatory design through a literature search. Descriptive research portrays an accurate profile of persons, events or situations while explorative design involves a search of literature that is relevant to the objectives and provides qualitative information on developmental issues on a view (Kothari, 2004). The study area is the Bauchi States targeting tertiary institutional projects. It was chosen because of the high rates of construction activities with a high number of construction professionals (Usman et al., 2012).

The population is the core building professionals working as project managers in the construction sites, this group were chosen because of their significance in terms of executing of construction works, and they are involved almost in all day-to-day activities of construction works on sites. Therefore, they deemed the best groups to fulfill the objectives of this study. A total of fifteen (15) contractors that are currently on-site work were identified within Abubakar Tafawa Balewa University, Federal Polytechnic, and State Polytechnic Bauchi. Also, three (3) professionals were selected within the construction sites making a total of 45 respondents for the study. The study used questionnaire as an instrument in collecting data from the respondents and convenience sampling techniques used in distributing the questionnaire to the respondents. Therefore, this study used SPSS version 23 as tool for analysis while descriptive statistics and inferential statistics such as Pearson correlation and multiple regression analysis was used to checks for interrelationship among management principles of Henry Fayol and it impacts on project success within the study area.

4.0 RESULTS AND DISCUSSION

4.1 Correlation analysis of Henry Fayol Principles of Management in Construction

In order to find out the inter-relationship among Henry Fayol principles of management in management of human resource in construction projects, a correlation analysis was used to investigate the relationships between pairs of Henry Fayol's principles of management in practices and the results obtained are shown in Table 1. The aim of this analysis was to investigate whether there are any statistically significant correlations between Henry Fayol principles of management in practices. According to Pallant (2011) correlation coefficients provide a numerical summary of the direction and the strength of the linear relationship between two variables with value ranges from -1 to $+1$. The result revealed a positive and statistically significant correlation of all 144 possible correlations as shown in Table 1. The statistically significant correlations coefficients are indicated in Table 1 as shown below;

Table 1 Coefficient of Correlation of Henry Fayol's Principle of Management

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Divisions of Work	1	.684	.825	.720	.765	.664	.772	.667	.510	.643	.628	.678	.673	.670
2.Authority		1	.675	.615	.577	.563	.541	.513	.461	.657	.463	.425	.519	.531
3.Discipline			1	.762	.759	.729	.716	.591	.568	.660	.611	.636	.657	.576
4.Unity of Command				1	.812	.684	.568	.637	.420	.720	.650	.582	.686	.588
5.Unity of Direction					1	.656	.618	.629	.563	.754	.618	.609	.801	.669
6.Subordination of Individual Interest						1	.656	.614	.551	.671	.536	.588	.702	.647
7.Remuneration							1	.500	.388	.603	.552	.562	.596	.571
8.Degree of Centralization								1	.551	.554	.536	.686	.632	.587
9.Scalar Chain									1	.638	.617	.498	.638	.559
10.Order										1	.690	.579	.734	.650
11.Equity											1	.579	.655	.797
12.Stability of Tenure												1	.662	.527
13.Initiative													1	.699
14.Esprit-de-Corps														1

Based on Table 1, it is possible to note that the maximum value of coefficient of correlation has been identified between division of work and discipline ($p=0.825$) while the least values of coefficient of correlation has been identified between remuneration and scalar chain of hierarchy ($p=0.388$) respectively. These correlation coefficients of different variables have been classified according to the rules of thumb about the strength of correlation coefficient (Kumar et al., 2013). In addition to that, the variables have been classified into five categories as shown in Table 2 below;

Table 2 Classification of Variables based upon Coefficient of Correlation

Variables	Very strongly correlated (a)	Strongly correlated (b)	Moderately corrected (c)	Weak correlated (d)	Not correlated (e)
1.Divisions of Work	1,3	2,4,5-6,8,10-14	9		
2.Authority	2	3,4,10	5-9,11-14		
3.Discipline	3	4-7,10-11	8,9,14		
4.Unity of Command	4,5	6,8,10,11,13	7,9,12,14		
5.Unity of Direction	5,13	6-8,10-11,13	7,9,12,14		
6.Subordination of Individual Interest	6	7,8,10,13,14	9,11-2		
7.Remuneration	7	10	8,11-14	9	
8. Centralization	8	12,13	9-11,14		
9.Scalar Chain	9	10,11,13	12,14		
10.Order	10	11,13,14	12		
11.Equity	11	13.14	12		
12.Stability of Tenure	12	13	14		
13.Initiative	13	14			
14.Esprit de Corps	14				

(a)Variable numbers having a correlation coefficient between 0.801 and 1.000; (b)variable numbers having a correlation coefficient between 0.601 and 0.800; (c)variable numbers having a correlation coefficient between 0.401 and 0.600; (d)variable numbers having a correlation coefficient between 0.201 and 0.400; (e)variable numbers having a correlation coefficient less than or equal to 0.200.....Source: (Kumar et al., 2013)

From Table 2 the fourteen principles of management were classified base on five categories of correlation in practice and it's clearly seen that deviation of work and discipline, unity of command and unity of direction and initiatives with unity of direction identified as very strongly correlated principles in management of building construction projects on sites. Furthermore, remunerations and scalar chain of hierarchy identified as weak correlated principles. The most interesting parts of these classifications vindicate no uncorrelated principles among the fourteen principles in practice. Moreover, the implication of these findings reveals that, at least each of these principles of management significantly correlates with one another in managing construction sites of building projects in Bauchi state of Nigeria.

4.2 Impacts of Fayol's Principles of Management on Project Success in Constructions.

To determine the influence of Fayol's principles of management on project success, a multiple regression analysis were carried out on the two variables with 14 principles of management as independent variables while projects success as dependent variables. The project's success were measured based on the respondent perceptual impact on the three dimensional factors of cost, time and quality. In regression analysis, the value of R² used to indicate the predictive strength of the independent variables on the dependent variable and also indicates which of the factors best influence projects success in building projects (Aiyetan et al., 2012). A higher R² indicates a higher predictive capability of the block of independent variables on the dependent variables (Pallant, 2011) as shown in the Table 3 below;

Table 3 Model Summary of regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556 ^a	.309	-.025	1.819

From Table 3 (Model summary) show the R² for the fourteen variables to be .309, indicating that the fourteen predictors' principles variables combined together explained at least 30.9% predictive capacity of projects success. In addition, the R value of the correlation between the dependant variable (projects success) and independent variables (principles of management) is R=0.556 which indicates a positive and medium relationship among the variables interaction.

Furthermore, the results of the Standard Multiple Regression Analysis in Table 4 show no significance difference on the levels of contribution of one principles to another on project success because all the values are greater than the specified p=.05 as shown below;

Table 4 Regression Analysis on Impacts of Fayol's Principles on Projects Success

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	14.541	1.365		10.654	.000
Divisions of Work	1.037	.647	.602	1.604	.120
Authority	.424	.449	.240	.945	.353
Discipline	-1.207	.664	-.662	-1.819	.079
Unity of Command	-.072	.606	-.044	-.118	.907
Unity of Direction	.108	.599	.070	.181	.858
Subordination of Interest	.884	.537	.493	1.646	.111
Remuneration	.060	.499	.034	.121	.905
Centralization	-.574	.469	-.318	-1.224	.231
Scalar Chain	.179	.477	.100	.376	.710
Order	-.445	.529	-.269	-.841	.407
Equity	-.219	.656	-.116	-.333	.741
Stability of Tenure	.056	.515	.028	.108	.915
Initiative (creative ideas)	.332	.544	.193	.610	.547
Esprit de Corps	-.844	.590	-.477	-1.431	.163

a. Dependent Variable: PROJECT SUCCESS

The aimed of this analysis is to determine the extent of contribution of each principle toward projects success in building projects. According to Pallant (2011) the levels of contribution of independent variables toward dependent variables can be seen under Beta values of Standardized Coefficients regardless of sign values, in which the independent variables with high Beta values has the highest contribution to dependent variable and vice versa. Therefore, from Table 4 it can be deduced that, Discipline (66.2%), Divisions of Work (60.2%), Subordination of Individual Interest (49.3%) and Esprit de Corps (Team work) (47.7%) have the highest contribution toward achieving projects success in building projects. The implication of these findings show a good signal for implementing Henry Fayol's principles of management in achieving projects success especially the above four principles. The study found that these four principles attained a combined minimum contribution of (55.85%) toward project success in managing construction sites of Nigeria.

5.0 CONCLUSION AND RECOMMENDATIONS

The study explored the potential impacts of Henry Fayol's principles of management on projects success in building construction sites of Nigeria. It also investigated the correlation strength among these principles in practices using Pearson correlation. It can be concluded that all the principles significantly correlates with each other and classified into three categories as very strongly, strongly and moderate relationship for managing construction. However, division of work and discipline has the highest correlation while the least values of coefficient of correlation identified between remuneration and scalar chain of hierarchy. Moreover, study concludes that discipline, divisions of work, subordination of individual interest and esprit de corps (team work) with combined minimum contribution of (55.85%) are paramount important in attaining project success at different phases of building projects. Above all, based on the findings and discussions of this paper, study recommend that, the construction practitioners or managers can easily choose appropriate principles of management from three identified categories especially the above four mentioned principles for managing construction sites as they found to be effective and have the potential to improve projects success in building construction of Nigeria. Furthermore, further studies can be conducted to assess the level of effectiveness of these principles in practices as well as establishing the hierarchical relationship among the management principles of Henry Fayol for managing construction projects.

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