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# Buildings and Facilities Maintenance Projects in Nigerian Universities: An Institutional Leadership Approach

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A B S T R A C T

Top university management has decisive roles to play in creating a maintenance culture of university buildings and facilities. Quality and functional buildings and facilities not only promotes healthy living within the university community, but also enhance student's academic performance. This study examines the top university management leadership roles and behaviours in term of maintenance of buildings and facilities in their universities. Descriptive survey was employed with structured questionnaire as research design and administered to five randomly selected universities in the South-South geopolitical zone of Nigeria. The questionnaires were administered to Directors of works and physical planning units, Directors of budget and planning, Directors of maintenance units and manages in the offices of works and physical planning, budgeting and maintenance units of the three selected federal universities and two State universities in the study area

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## INTRODUCTION

University buildings and facilities should be continuously maintained to realize her primary goals of teaching and research. A major role of university management is to provide conducive environment and facilities for learning and healthy living. To achieve this goal, university buildings and facilities need to be well maintained and on regular bases. Evidence from empirical researches has shown that basic improvements on facilities such as lightings in the classrooms, libraries and students' halls of residence has a remarkable improvement on student academic performance. Also, researches by Masrek and Zainol (2015); and Tayah et al. (2016), showed that there is a positive link between well-maintained universities buildings and facilities and the well-being of students and staff alike. Ibrahim-Adedeji (2016), acknowledged that good quality buildings and facilities promote staff and students' comfort on campus. Similarly, Hassanain (2008), reported that staffs' retention could be linked to the quality and functionality of university buildings and facilities. Furthermore, Ikpo (2009) posits existence of relationship between improved facilities and students' academic performance. Undisputedly, a well-designed and maintained buildings and facilities in the university's environments tend to increase academic performance and social relationships between students and staffs, whereas a lack leads to a reverse. Organizational effectiveness including maintenance of universities buildings and facilities has been linked to leadership commitment and behaviors. Leadership commitment is a driving force to achieving organizational goals. Thus, University's management has a major role of building and nurturing a sustainable maintenance culture, and this declaration underpins this study.

## LITERATURE REVIEW

### Concept of Leadership

Sharma and Jain (2013), views the leadership concept as a process that involves an exertion of influence from a person to another in order to achieve an objective, and in a manner that allows coherence and cohesion. Attempts to define leadership has not been an easy one as it largely depends on a combination of factors which border on the philosophies, values, perspectives, personalities, and profession of those involved. Yukl (2010: 23), asserts that leadership in an organization is used to describe a certain type of social interaction between people, while the term leader is used to denote a person who motivates and encourages others and by so doing influences them. On the other hand, Northouse (2010: 12), states that leadership is used to describe personality traits, behaviour, power and influence.

Leadership according to Cohen (1990), involves influencing others to maximally perform tasks, projects, and objectives. Kouzes and Posner (1995) conceptualize leadership as the art of motivating individuals towards shared goals. Leadership is viewed by Hersey and Blanchard (1988), as the process of influencing individual or group actions to achieve goals. Northouse (2010: 13) identifies four common themes: leadership as a process, leadership involves influence, leadership occurs in a group context and leadership involves goal attainment. Northouse (2010: 20) sums up and defines 'leadership' as "a process

whereby an individual influences a group to achieve a common goal." Leadership is not limited to individuals in formal leadership positions such as government departments, political parties and churches. Leadership could include the influence an appointed Directors of works and physical planning unit, Director of budgeting and maintenance managers in established organization such as universities. Thus, their influence entails direction, inspiration, guidance, control, trust, motivation, persuasion, commitment and empathy towards employees. Building and sustaining a maintenance culture in the university environment requires a visionary leader who inspires, motivate, direct, control and influence workers to achieve organizational set goal like effective maintenance of university buildings and facilities. Buildings and facilities which is regarded as the second asset to universities after students should be regularly maintained to achieve the university set objectives. Requisite Leadership qualities include but not limited to consistency, effective communication, active listening, empowerment, conscientiousness, and persistence. Elements of leadership must focus on goal setting, team building, decision making, communicating vision, relationship building, and delegating responsibility.

**Leadership Theories, Traits, Styles and Behaviours**

According to University of Cambridge Institute for Sustainable Leadership (UCISL, n.d), the theories of leadership fall into the following schools of thought- Greatman/Trait school, Situational/context school, Transactional/transformational, Behavioral/styles school, and Contingency/interactionist school. A political view of leadership theories, namely political philosophy perspectives of Chan and Chan, 2014; Keohane, 2014 tended to align leadership to structures of ideal governance and political leadership behavior of philosophers like Aristotle, Plato, Machiavelli, Confucius; political sociology-drawing from Max Weber's influential leadership (Shore, 2014); political psychology- which connects the attitudes of political leaders with their official role play ( Reicher, et.al, 2014; Augoustinos and De-Garis, 2012); analytical and methodological which embraces the nature of analysis carried out by scholars (Zarefsky, 2010; Uhr, 2014; Walter, 2014). Jordan et al. (2008), identified that leadership development is hinged on behaviorist theory-which sees learning as one evolving through conditioning, reinforcement or repetition occasioning a permanent change behavior; cognitive theory in which mode of information conveyance is as important as information conveyed (Hartley, 1998); constructivist theory in which existing knowledge together with new information builds active learning (Ford and Hawler, 2007); social/situational theory, which recognizes social interaction (Bandura, 1986); and transformational theory, which creates effective personal/organizational change agents ( Prandini et al., 2012; Vellner, 2015).

Newport and Harter (2016) research identified twelve leadership traits that distinguish successful leaders from unsuccessful leaders, viz; inspiring, consistent, intense, courageous, care, enthusiastic, analytical, competitive, prepared, visionary, success-oriented, and focused. Furthermore, work at PEW Research Centre (2015), revealed seven traits that matter most in leadership,

namely-intelligent, innovative, decisive, compassionate, honest, organized, and ambitious. Visser and Conitice (2011) highlighted leaders' ability to navigate across complexity, systematic thinking, inclusivity, complexity, long-range thinking, interdisciplinary, and globally awareness. This is averred by the University of Cambridge Institute for Sustainable Leadership (UCISL, n.d), which remarked that today's leaders be they civil -society, political, institutional, or corporate must operate within the confines of global pressure dynamics.

Yukl (2010), posits that the trait approach to leadership stresses certain leadership attributes including -values, motives, skills, and personality, with an underlying assumption that some individuals possess certain traits lacking in others. The trait view brings to the front burner that leadership is inherent in a select few endowed with special talents (Yukl, 2010).

Styles of leadership can be grouped as follows: autocratic, involving a top-down approach in which the leader makes most of the decisions; participatory, in which the leader involves followers in decision making; delegatory, in which the leader often shares responsibilities with the followers; charismatic, here a leader is well-liked by the followers and has much influence on the organization; democratic, in which majority opinion is used by leaders during decision making and delegating responsibilities. Klingborg, et al (2006), states that today's organizations interface between 'leading and following', with time, place, need, and circumstance playing important roles on their leadership styles.

Leadership behavioral insights by House et al. (2004), reveal charismatic/value-based, participative, humane-oriented, autonomous, and self-protective as common leadership traits. According to House, et al (2004) study, the most preferred leadership behavior in most of the world's cultures is the Charismatic/value-based leadership, followed by the team -oriented leadership. House, et al 2004 study further revealed that Autonomous, and Self-protected leadership behaviors were across geo-cultural contexts the least preferred. Charismatic /value-oriented leadership fundamentally involves the leader's ability to motivate and inspire the followers into high role performance based on core values. The charismatic/value-based leadership traits shave six leadership attributes, namely; decisive, integrity, self-sacrifice, visionary, inspirational, and performance -based. Observably, there is a close link between the aforementioned charismatic/value-based leadership attributes and transformational leadership behaviors in contrast with transactional leadership style. Price (2003), posits that transformational leadership can be differentiated from transactional leadership on grounds of the following: vision and purpose, ability to inspire and stimulate, moral responsibility towards the followers. In all, it is important that leaders do not assume greater importance than its followers, since without followers, there cannot be leaders.

**Perspectives of Institutional Leadership**

Ulrich and Smallwood (2012), states that leadership is all about who we are, what we do, and what we know. Whereas, Yukl (2010), process view of leadership as one which influences others to understand and agree on what to do, how it should be done and the motivation of others to achieve goals and shared aspirations. Northhouse (2010), views leadership as a way of influencing

individuals in a group to achieve a purpose. Both definitions reveal leadership as a process that wields influence on individuals that comprise a group leading to attainment of goals that are shared among leaders and followers. The process approach to leadership simply implies that leadership can be acquired by learning and observing a leaders' behaviour ( Daft, 2005; Northhouse, 2010). Further insights into the leadership literature brings to the fore the concept of Assigned and Emergent leadership. Whereas, assigned leadership is a system by which individuals within an organization are formally appointed into leadership positions., emergent leadership is the assumption of leadership by a member of a group in response to a reaction by other members of a group. Examples of assigned leadership include all forms of institutional leaders, namely Vice-chancellors, Rectors, Deans of Faculties, Directors of Centers; corporate /social organization leaderships like Managing Directors, Chief Executive/Operating officers, General Managers, Executive Directors of non-profit organizations. Emergent leadership emanates when members of a group perceive an individual as having an overwhelming influence over other members of a group.

Without influence it is impossible to be a leader as it is the sine-qua non for all kinds of leadership. Leaders ethically influence organizational members, be it subordinates, peers, and even bosses for the achievement of common goals. Both leaders and their followers share common values -visions and missions. How leaders act in organizations depends on two two distinct forces namely-organizational culture and climate. Every organization has a unique culture which represents the founders, past leadership, current leadership, crises, events, history and size. The sum total of organizational climate results in rites -routines, rituals, and mode of governance. In contrast organizational climate is the feeling of shared perceptions and attitudes of organizational members (Ivancevich, Konopaske, Materson, 2007). Whereas culture is a deeply rooted nature of the organization that results from long-held formal and informal systems, rules, traditions, and cultures; climate is short-held and results from current leadership. Kouzes and Prosner (1987), identified the following characteristics of good leadership, namely; challenge the process, inspire a shared vision, enable action by followers, model the way, and encourage action. The functions of institutional leaders include as follows: effective management of time and other resources, representative of the subordinates, security of workforce, develops attitude of cooperation amongst workforce, makes the work environment conducive, communicates policies and procedures, understands the problems and agitations of subordinates, and guides/directs the overall working of the organization. Pritchard (1988) and Guiliani (2003), states that 'effective institutional leadership requires insights, self-awareness, communication and ability to catalyze a shared vision, and a recruitment of motivated followers

**Institutional Leadership-Focused Approach and Building/Facility Maintenance**

A leadership-focused approach relative to maintenance of buildings and facilities in the university hinges on a leadership-driven model that identifies all key top university management as it concerned with maintenance of university buildings and facilities. Yukl (2010) opine that leadership is the personal values that lead to outstanding managerial performance. The relevance of leadership in

today's competitive world is evident in all areas that require strategic planning. It has been noted that it is the behaviour of top leaders that drives organisational success and this be replicated among top university management involved in buildings and facilities maintenance. Leadership has been found useful in achieving organisational goals. Adenuga and Iyagba (2005); Olanrewaju (2012) state that top leaders' behaviour impact directly and indirectly on achieving organsational goals including maintenance of university building and facilities. The indirect effect relates to the establishment of rules and norms concerning maintenance practices and procedures that lead to maintenance culture. The direct effect relates to adequate budgeting of funds for maintenance of buildings and facilities within the university community. Thus, leadership and leaders' commitment to planned and preventive maintenance of universities buildings and facilities are critical for the sustainability of maintenance culture.

**Identified Leadership Factors Contributing to Poor Maintenance of University Buildings and Facilities Poor Leadership**

Adewunmi et al. (2011) and Tayah et al. (2016) identified poor leadership as a factor contributing to defects and deteriorations of university buildings and facilities. According to Tayah et al. (2016) poor leadership could be in form of appointment of incompetent maintenance officer to head the unit. When you have a square pig in a round hole, the resultant effects will be defects and deteriorations on university building and facilities due to inability and incompetent maintenance officers to identify defects before total failure. Iyagba (2005), identified bribery and corruption as factors contributing to defects in public buildings in Nigeria. Instances have shown that when the maintenance officers compromised with the material suppliers and contractors to supply and install substandard and inferior materials, cases of defects become faster. Adenuga and Iyagba (2005) acknowledged that the rate of defects and deteriorations on facilities are linked to substandard materials which points to corruption and compromise among the university physical planning and budgeting units. The work of Pike (2002) on the differential effects of on- and off-campus living arrangements pointed out that lack of maintenance of students' living accommodation definitely leads to defects and deteriorations of facilities. Iyagba (2005) and Suffian (2013) added that lack of maintenance culture and neglect on public facilities lead to defects and deteriorations. Defect such as dampness according to Adenuga and Iyagba (2005) produces pathogenic toxic mould and other biological effects that are visible in public buildings

**Inadequate Budgeting for Maintenance**

Olanrewaju (2012) conducted a post occupation evaluation of universities buildings and identified poor budgeting of funds for regular maintenance as one of the factors resulting to defects and decay in the university buildings and facilities. Similarly, Ibrahim-Adedeji (2016) conducted research on causes and effects of deterioration in students' hall of resident in Nigeria Tertiary institutions noted that lack of transparency and accountability in the budget office and physical planning units of our Tertiary institutions are far from exhibiting exemplary leadership. Leadership according to Banful, (2004) is all about having vision and passion to driving organizational set goal, such as building and nurturing university maintenance culture. In case where the university top

management like the Directors of budget and physical planning units who are directly involved in planning and maintenance of university buildings and facilities failed to demonstrate exemplary qualities of a good leader, there is a problem. Undoubtedly, buildings and facilities become defective as a result of the aforementioned defectors. Pike (2002); Hassanain (2008); Ibrahim-Adedeji (2016) stated that there is a relationship between buildings and facilities decay and top management committed towards effective maintenance management. Building and facilities tends to decay and deteriorate fast if there is absence of regular or planned maintenance by the top management (Eke et al., 2017). Ibrahim-Adedeji (2016) noted that inadequate allocation of financial resources by the federal government for facility maintenance in the university campuses across the country can be linked to the causes of defects and deteriorations on students' hostels and staffs' quarters alike. Stressing the importance of finance in relation to maintenance of university building and facilities, Hassanain (2008) who conducted research on performance evaluation of sustainable university facilities agreed that without finance the maintenance unit of any university can do little.

**Technical Lapses**

Faulty design as one of the causes of defects in buildings in Tayah et al. (2016) that worked on effects of faulty design phase on school buildings maintenance in Gaza Strip noted that defects and deteriorations on students' living accommodations contributed to maintainability problems. The designers must take into account maintenance considerations during the design and supervision stages by specifying durable materials and having competent supervisors on site. Iyagba (2005); Suffian (2013); Buildings fail due to errors and deficiency in construction materials used, and poor detailing of working drawings (Ikpo, 2012). There are innumerable dilapidated, defective, and abandoned federal government facilities in all the 36 states of the federation. The cases of students' hostel in federal universities, polytechnics and colleges of education are not different. It has been widely agreed that lack of maintenance culture is endemic in Nigeria, particularly in the federal government facilities.

## METHODOLOGY

The study was conducted in three phases: firstly, a comprehensive review of existing literature was carried out to identify leadership factors contributing to poor maintenance of university buildings and facilities. Secondly, quantitative data were collected through questionnaire survey administered to directors of physical planning units, directors of budgeting and planning, directors of maintenance unit, managers in physical and budgeting offices, and maintenance officers. This was done to ensure that a comprehensive account relating to poor leadership in the maintenance of university building and facilities were properly captured as enumerated on the questionnaire survey instrument. Seven universities were randomly selected in South-South geopolitical zone of Nigeria, comprising five (5) Federal Universities and two (2) State Universities. The seven selected Universities were based on location and years of establishment, as the criterion have bearing on existing infrastructures and students' enrollment/intake. With the above two reasons the University attracts huge

number of students' intake every year resulting in over stretching of available facilities leading to decay on university buildings and facilities.

A total number of two hundred and forty (240) questionnaires were administered out of which two hundred and ten (210) copies were completed and returned resulting in response rate of 87.50%. The response rate achieved for this research is similar to that achieved in other surveys (Danity, 2008; Sutrisna, 2009). Such a response rate is justifiable according to Sutrisna (2009) and satisfactory based on the statement by Danity (2008) that a survey would be considered subjective or inconsequential if the total number is lower than 30. Thus 87.50% response rate achieved in this survey provides responsible data for analysis. From the literature five (5) possible factors contributing to poor leadership in terms of maintenance of university buildings and facilities were identified with thirty-one (31) associated problems. A 5- point Likert-scale measurement was used to obtain responses from the respondents. Leedy and Ormrod (2010) and Flick (2014) maintain that Likert scales are effective to elicit participants' perceptions / views on various statements. According to Flick (2014), where the questionnaire survey method is used, the entire analysis procedure usually involves calculation and interpreting descriptive analysis. IBM statistical package for social sciences (SPSS) version 23 were used for data analysis. Analysis of variance (ANOVA) was used to measure the difference in the perception of the respondents.

## RESEARCH RESULT

### Descriptive data analysis

Table 1. Classification of Respondent

| **Classification** | **Frequency** | **Percentage** |
|---|---|---|
| Directors of physical planning unit | 5 | 16.67 |
| Directors of Budgeting and planning unit | 5 | 16.67 |
| Directors of maintenance unit | 5 | 16.67 |
| Managers in the offices of the three Units | **15** | 50.00 |
| **Total** | **30** | **100.00** |

Table 1 shows the categories of respondents. The respondents were categorized into Directors of physical planning units, Directors of budgeting and planning units, Directors of maintenance units and managers in the three units. The respondents were selected from five universities in the study area: three Federal and two State universities showing their frequencies and percentages respectively.

Table 2. Respondents' Educational Qualification

| Respondent | Qualification | Frequency | Percentage |
|---|---|---|---|
| Directors | PhD | 7 | 23.33 |
| | M.Sc./M.Tech | 5 | 16.67 |
| | B.Sc./B.Tech | | 10.00 |
| Managers | PhD | 1 | 3.33 |
| | M.Sc./M.Tech | 10 | 33.33 |
| | B.Sc./B.Tech | 4 | 13.33 |
| Total | | 30 | 100 |

**For Educational qualification,** majority of the Directors have Doctor of Philosophy (PhD) in their chosen career with 23.33%, followed by those having M.Sc/M.Tech Degree in Built Environment programme (16.67%), and those having B.Sc./B.Tech in the Built Environment programme (10.00%). This indicates that the respondents are well educated to provide information for this research.

Table 3. Respondent Age Group

| Age | Range | Frequency | Percentage |
|---|---|---|---|
| Age Group | 21-30 years | 5 | 16.67 |
| | 31-40 years | 6 | 20.00 |
| | 41-50 years | 7 | 23.33 |
| | Over 50 years | 12 | 40.00 |
| **Total** | | **30** | **100** |

**For age group**, majority of the respondents age group fall within 50 above years with 40.00%, followed by age group 41-50 years with 23.33% and age group of 31-40 years with 20.00% and 21-30 years above with 16.67%. This indicates that the respondents are well mature to provide useful information for this study.

Table 4. Respondent Years of Experience

| Experience | Frequency | Percentage |
|---|---|---|
| Less 5 years | 3 | 10.00 |
| 5 – 10 years | 7 | 23.33 |
| 10 – 15 years | 9 | 30.00 |
| Over 15 years | 11 | 36.67 |
| Total | 30 | 100 |

**For Years of experience of the respondents**, 36.67% indicates those of the respondents that have over 15 years' experience, followed by range of 10-15 years with 30%, next were the respondents with range of 5-10 years having 23.33%, while those with less than 5 years working experience have 10%. Respondent's year of experience for this study is important. Thus, the respondents have the wealth of experience to provide useful information for the study.

Table 5. Identified Leadership Factors Contributing to Poor Maintenance of University Buildings and Facilities

| S/N | Problem | SI (%) | Rank |
|---|---|---|---|
| | **Poor Leadership related factor** | | |
| 1 | Bribery | 72.85 | 1 |
| 2 | Corruption | 70.59 | 2 |
| 3 | Appointment of incompetent maintenance officer | 68.47 | 3 |
| 4 | Poor coordination | 67.56 | 4 |
| 5 | Appointment incompetent supervisors | 62.54 | 5 |
| 6 | Lack of maintenance culture | 59.32 | 6 |
| 7 | Poor channel of communication | 57.78 | 7 |
| | **Inadequate budgeting related factor** | | |
| 8 | Inadequate allocation of funds for maintenance | 65.54 | 1 |
| 9 | Cash flow problem | 65.12 | 2 |
| 10 | Poor approach to debt collection | 63.23 | 3 |
| 11 | Misappropriation funds for allocated for maintenance | 62.23 | 4 |
| 12 | Mismanagement of funds | 61.12 | 5 |
| 13 | Irregular payment of cleaners and domestic workers | 58.34 | 6 |
| | **Poor management related factor** | | |
| 14 | Lack of commitment to maintenance | 71.34 | 1 |
| 15 | Irregular inspection of facilities | 70.65 | 2 |
| 16 | Poor maintenance strategics | 67.21 | 3 |

| | | | |
|---|---|---|---|
| 17 | Poor relationship between students and maintenance officers | 65.34 | 4 |
| 18 | Poor attitude towards maintenance issues | 62.77 | 5 |
| 19 | Irregular meeting between management and students | 57.53 | 6 |
| 20 | Delay in replacing damaged fittings | 56.43 | 7 |
| | **Technical lapses** | | |
| 21 | Faculty design | 70.87 | 1 |
| 22 | Poor specification of workmanship | 67.63 | 2 |
| 23 | Construction fault | 65.32 | 3 |
| 24 | Poor detailing of document/drawings | 63.42 | 4 |
| 25 | Poor supervision of construction works | 57.51 | 5 |
| 26 | Maintainability problem | 56.51 | 6 |

**Factors Contributing to Poor Maintenance of University Building and Facilities**

Table 4 shows the ranking of the factors contributing to poor maintenance of university building and facilities. Twenty–six (26) factors were identified from literature. The greater the severity index, the higher the rank of the problem. Under Poor leadership related factor, "bribery" ranked first with a severity index of 70.85%, followed by "corruption" with SI = 70.59%, next was 'appointment of incompetent maintenance officer' with severity index of 68.47% "poor coordination" ranked forth with SI= 67.58%, 'appointment of incompetent supervisors" ranked fifth with SI= 62.58% while "lack of maintenance culture" ranked sixth with SI = 59.84% and "poor channel of communication" ranked seventh with SI = 57.78%. Under Inadequate budgeting for maintenance related factor, "Inadequate allocation of funds for maintenance" ranked first with a severity index of 65.54%, followed by "Cash flow problem" with SI = 65.12%, next was "Poor approach to debt collection" ranked third with SI = 63.23%. "Misappropriation of funds for maintenance" ranked fourth with SI of 62.21% while "Mismanagement of funds for maintenance ranked fifth with SI = 61.12% and "Irregular disbursement of funds for maintenance" with SI = 58.34%. Under Poor Management related factor, "Lack of commitment to maintenance" ranked first with a severity index of 71.34%, followed by "Irregular inspection of facilities" with SI = 70.65%, next was "Poor maintenance strategies ranked third with SI = 67.21%. "Poor relationship between students and maintenance" ranked fourth with SI = 65.34% while "Irregular meeting between students and management" with SI = 57.53% and "Delay in replacing damaged fittings" with SI = 56.43% ranked sixth. Under Technical Lapses related factor, "Poor specification of workmanship" ranked first with a severity index of 70.87%, followed by "Construction fault" with SI = 67.63%, next was "Poor detailing documents/drawings" ranked third with SI = 63.42%. "Poor supervision of

construction works" ranked fourth with SI = 57.51% while "Maintainability came last with SI = 56.51.

Table 6. One-Way Analysis of Variance (ANOVA) of Rents in Barnawa, Kawo and Kurmin Mashi by Building Type

| Source | | Sum of Squares | *df* | Mean Square | *F* | Sig. | Betta Squared |
|---|---|---|---|---|---|---|---|
| Directors | Between Groups | 24.695 | 4 | 25.57 | 4.789 | .007 | 0.29 |
| | Within Groups | 167.289 | 205 | 157.189 | | | |
| | **Total** | **191.984** | **209** | | | | |
| Managers in three units | Between Groups | 9.214 | 4 | 30.715 | 19.179 | .000 | 0.62 |
| | Within Groups | 189.568 | 205 | 184.601 | | | |
| | **Total** | **198.782** | **209** | | | | |
| | | | | | | | 0.54 |

Source**:** Researcher's Data Analysis, (2024)

Table 5 shows the one-way Analysis of variance (ANOVA) between-groups analysis of variance conducted to explore the difference in perceptions of respondents, Directors in physical planning, budgeting and in maintenance units in the five selected universities as regards to the factors contributing to poor maintenance of university buildings and facilities. Participants were divided into two groups according to building type (Group 1: The three Directors; Group 2: Managers in: offices of directors: physical planning, budgeting and maintenance units). There was a statistically significant difference at the $p < .05$ level in the perception of the two groups with: $F (3, 36) = 4.789$, $p = .007$; $F (3, 36) = 19.179$, $p =. 000$; respectively. Despite reaching statistical significance, the actual difference in mean scores between the groups was large. The effect size for the two respondents, calculated using eta squared, was 0.29, 0.62 and 0.54 for Directors and managers in the three units respectively.

## DISCUSSION

Twenty–six (26) factors were identified from literature and categorized into four (4) groups (Leadership related factor, Lack of maintenance culture related factor, Design fault related factor, Poor management related factor and Inadequate budgeting for maintenance factor). The three (3) top significant factors from each group totaling twelve (12) significant factors are: "Bribery", "Corruption", "Appointment of incompetent maintenance", "Inadequate allocation of funds for maintenance", "Cash flow problem", "Poor approach to debt collection", "Lack of commitment to maintenance", "Irregular inspection of facilities", "Poor maintenance strategies", "Faculty design", "Poor specification of workmanship", and Construction fault". Literature corroborated the research findings in that Iyagba (2005) bribery and corruption as factors contributing to defects and deteriorations in Nigerian public building and facilities. Ikpo (2009), also identified poor leadership, lack of trained maintenance officers to carry out regular inspections. Olanrewaju, (2012), added inadequate allocation of financial resources, while Banful (2004) and Ikpo (2014), identified cash flow problem as factors directly and indirectly impacts on life spans and performance of buildings and facilities over time.

## CONCLUSION AND RECOMMENDATIONS

Based on the research findings of this study it could be concluded that visionary leadership and leaders' commitment to maintenance of university buildings and facilities are prerequisite for sustainability of maintenance culture within the Nigerian tertiary institutions. The study also finds that quality and functional university buildings and facilities, staffs' quarters inclusive not only improve students' academic performance, but it also promotes healthy living among students and staffs. The study further found that management commitment ensures that quality standard of materials is specified and installed during the construction phase

The study therefore, recommends that:

- The Directors of works and physical planning, Director of budgeting, Director of maintenance units and mangers should administrate visible leadership and commitment towards building effective maintenance culture in their universities.
- Federal, state, and university management should set aside a financial pool for regular maintenance of facilities in the university's campuses,
- The university management should cultivate the ethic of maintenance culture,
- Employment of personnel in both the physical planning and maintenance units in the university should not be based on ethnicity, religion or political affiliation, but should be based on competencies or technical-know-how,
- The Directors of maintenance units should have a maintenance log book where students and cleaners can write down complains of defects,
- There should be a well-managed communication channels between the students, cleaners and the management (maintenance unit).

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