Perceived Influence of Principals' Admininstrative Strategies on School Plant Maintenance in Secondary Schools in Taraba State Nigeria

Dr. Adi Daniel

Federal University Wukari, Faculty of Education, Department of Physical and Health Education

Abstract. This study was conducted to determine the influence of Principals' administrative strategies on school plant maintenance in secondary schools in Taraba State, Nigeria. The study was guided by four objectives and four research questions were answered, while four null hypotheses were formulated and tested at 0.05 level of significance. Survey research design was used and the population of the study was 618 Principals and vice principals from all the 309 public secondary schools in the Taraba State. The study was a census survey of the entire population hence there was no sampling. A 41-items self- structured questionnaire titled "Influence of Principals' Administrative Strategies on School Plant Maintenance Questionnaire "IPASSPMQ" was used to collect data from the respondents. Five Experts made up of three experts from Educational Administration and Planning; two experts in and Measurement and Evaluation in the Department of Educational Foundations and General Studies, Joseph Sarwuan Tarka University, Makurdi ensured the face and content validity of the instrument. The IPASSPMQ was trial tested on respondents in five secondary schools in Benue state and the reliability of the instrument was also established using Cronbach Alpha formula which yielded an index of 0.83. The data collected were analysed using Frequency count, Mean and Standard Deviation to answer research questions while hypotheses were tested using Chi-square goodness of -fit- statistical tool at 0.05 level of significance. The study found that all the principals' administrative strategies of planning, organizing, staffing and coordinating has significant positive influence on school plant maintenance in secondary schools in Taraba state. It was recommended amongst others that Principals and Vice principals of secondary schools in Taraba state should provide active and efficient coordination of all their school plant activities with the aim of aim of sustaining the smooth operation of the school plant.

Keywords: *Secondary School, Principal, Administrative Strategies and School Plant Maintenance.*

Introduction

It is not only philosophical, but truism that education is the process by which students acquire the relevant knowledge, skills, and values to ensure proper intellectual and character development of individuals for self-reliance and responsible citizenship. Consequently, in Nigeria today there are two types of education namely: formal and informal education. While informal education can take place anywhere outside the school system, formal education only takes place in classroom in all different levels of Education such as primary, secondary and the tertiary education.

Secondary school is a very important level of education in Nigeria where solid foundation for higher education and useful living is laid. According to the Federal Republic of Nigeria (FRN, 2013), secondary education is the form of education children receive after primary education and before tertiary stage. Specifically, the secondary education should provide an increasing number of primary

school pupils with the opportunity for education of a higher quality irrespective of sex, or social, religious and ethnic background, respect the views and feelings of others, respect the dignity of labour and appreciate those values specified under our broad national aims, and live as good citizens, foster Nigerian unity with an emphasis on the common ties that unite us in our diversity, inspire its students with a desire for achievement and self-improvement both at school and in later life (FRN, 2013). At the primary and secondary school levels, those that head the institutions are called Head teachers and Principals respectively, while those at the helm of affairs at the tertiary institutions are called Vice-chancellors, Rectors or Provosts for universities, polytechnics and monotechnics, and colleges of education respectively (Tyokyaa, 2015). The principal is in charge of the management and administration of secondary schools.

School Principals are individualsare charged with the daunting task of managing the school for effectiveness. Principals are required at this level of education to help in the achievement of the objectives and there is need for them to be effective in their administration if the aims of secondary education are to be achieved. The administration of secondary schools in Nigeria rests on the shoulders of the principals who are the leaders, controllers, and custodians of both academic and extra-curricular activities of the schools. The principal is the chief executive of the school, who provides instructional leadership by coordinating curricular, co-curricular programmes and also responsible for the general administration of secondary school, (Agu & Okoli 2021). As instructional leaders, principals' administrative tasks may include supervision, monitoring, assessment, evaluation and dissemination of current information on management and academic techniques to teachers leading to effective teaching and learning process. The principal may also be described as an executive head of the school, because of the way he/she makes decisions and implements policies and programmes (Achimugu, 2008). The principal provides the best school climate to entice teachers to build strong commitment in school by avoiding violence, threats, hatred, indiscipline, frustration and witch hunting of teachers and carrying out effective Administration of all school activities.

Administration is essential in every human organization ranging from industrial firms, hospital organizations, business enterprises, churches and educational institutions for the achievement of stated objectives. School as an organization cannot achieve its goals without the proper and effective administration of its human and material resources. Agoha (2008) sees administration as a component part of management concerned with facilitating the accomplishment of the objectives of an organization through systematic management of constraints and careful utilization of the available limited resources. Principals perform the administrative functions and the day-to-day activities of the schools. These administrative functions or activities depend on the principals' administrative, supervisory, and organizational styles/strategies, since the principal bears the general responsibility of clarifying the school purpose and philosophy. In the contest of this study, administration is the process by which school principals uses administrative strategies to plan, organize, direct as well as coordinate both human and material resources within the school plant to ensure attainment of school objectives in Taraba state.

Administrative strategies well-planned series of actions or ways through which the available resources are managed and utilized for the achievement of stated objectives (Amanchukwu & Ololube, 2015). Administrative strategies can also be seen as those procedures adopted by administrators or heads of organization for managing and reorganizing human and material resources to attain the stated goals of the organization. In the submission of Enyi (as cited in Ogbonnaya, Oboegbulem, Onwura, & Enyi, 2013) administrative strategies can therefore be regarded as the sum total of the various processes of planning, organizing, stimulating, coordinating, staffing, budgeting, communicating and evaluating. These processes can be described as the basic elements for administrative strategies adopted by school principals in school plant maintenance. These strategies or principles according to Ochai (2012) are represented in an acronym called POSDCORB (planning, organizing, staffing, directing, coordinating, reporting and budgeting). Administration is seen as the everyday job of a secondary school and for the principals' administration to be effective and efficient for the maintenance of school plant is very crucial. This study therefore intends to investigate the influence of principals' administrative strategies on school plant maintenance in secondary school.

The strategies that may exert influence on school plant maintenance to be investigated includes planning, organizing, staffing, directing, coordinating, reporting and budgeting.

School plant maintenance involves all the activities carried out to sustain the use and value of school facilities. This becomes necessary since continuous utilization of buildings, grounds and facilities result in their wear and tear. To ensure uninterrupted usage, maintenance therefore becomes imperative. One neglected area of school administration is facility maintenance culture. Asiegbu (2014) acknowledges that school plant at all levels of education is poorly maintained because the attitude of school personnel to maintenance culture is generally very negative.

Statement of the Problem

The need for school plant maintenance arises due to a number of factors which include; the daily routine use of the facility, aging of the facility, over utilization, changing curricula to support contemporary instructional practices, extreme climate conditions which cause the wear and tear of facilities, lack of funding, lack of maintenance culture, carelessness exhibited by users, deferred maintenance and so on. The researchers however observed recently, that there has been reported cases of building walls collapsing and killing both staff and pupils in some parts of Nigeria especially in the study area which were attributed to poor principals' administrative strategies such as poor planning, organizing, staffing, directing, coordinating, reporting and budgeting respectively This observation was collaborated by an earlier study by Asiyat (2012) which revealed that facilities in public schools were generally in a state of disrepair due to inadequate maintenance. This therefore necessitates the need to solve this problem in order to meet the expectations of the 21stcentury learners by investigating into the possible influence of principals' administrative strategies on school plant maintenance in secondary school in the study area.

Objective of the Study

The main objective of the study was to investigate influence of principals' administrative strategies on school plant maintenance in secondary school in Taraba State, Nigeria. Specifically, the study sought to:

1. determine influence of principals' planning strategy on school plant maintenance in secondary schools in Taraba State;

2. find out influence of principals' organizing strategy on school plant maintenance in secondary schools in Taraba State;

3. find out influence of principals' staffing strategy on school plant maintenance in secondary schools in Taraba State; and

4. find out influence of principals' coordinating strategy on school plant maintenance in secondary schools in Taraba State.

Research Questions

1. what is the influence of principals' planning strategy on school plant maintenance in secondary schools in Taraba State?

2. what is the influence of principals' organizing strategy on school plant maintenance in secondary schools in Taraba State?

3. what is the influence of principals' staffing strategy on school plant maintenance in secondary schools in Taraba State?

4. what is the influence of principals' coordinating strategy on school plant maintenance in secondary schools in Taraba State?

Methodology

This study employed a survey research design to determine the influence of Principals' administrative strategies on school plant maintenance in secondary schools in Taraba State, Nigeria.

This design was chosen as suitable for the study because the study allowed a representative sample through field research and was relatively easy and practical, also, the study confidently generalized the finding from selected sample to the entire population as it involved the use of questionnaires to collect information from the respondent. The population of this study is all the 618 Principals and Vice principals of 309 public Senior Secondary Schools in Taraba State (Taraba State Teaching Service Board, Jalingo, 2024). The choice of using Principals is because they are the one who carry out the administrative strategies in schools and with the help of their Vice principals. The sample size for the study was 618 Principals and Vice principals of the 309 Public Senior Secondary Schools in Taraba State. There was no need for sampling since the population was small and effectively managed by the researcher. This according to Anikweze (2016) who asserts that a population of a few hundred can be effectively managed by the researcher.

The instrument for data collection is a 41-items self-structured questionnaire tagged "Influence of Principals' Administrative Strategies on School Plant Maintenance Questionnaire'' (IPASSPMQ)". The questionnaire was arranged in 4 clusters with cluster 1 having 11 items and the remaining 3 clusters having 10 items in each. Cluster 1 seeks information on Planning, cluster 2 on Organizing, cluster 3 on Staffing and cluster 4 on Coordinating school plant maintenance in Taraba State, Nigeria. The response to the items in the questionnaire was scored on a four-point rating scale. The rating scale is as follows: Very High Influence (VHI)-4, High Influence (HI)-3, Low Influence (LI)-2 and Very Low Influence (VLI)-1.

The instrument was subjected to face and content validation by five experts. Three of them are from Educational Administration and Planning and two from Measurement and Evaluation, all from the Department of Educational Foundations and General Studies, Joseph Sarwuan Tarka University, Makurdi. The experts assessed the relevance of the items in addressing the research questions bearing in mind the purpose of the study. These experts, after scrutinizing the instrument, made very important observations and corrections which the researcher used to produce the final version of the instrument for data collection. To ensure the reliability of the instrument, 30 copies of the instrument were trial tested on 20 public school principals, and their vices in Otukpo and Gboko local government area of Benue State which is not part of the sample but have similar characteristics to test the internal consistency of the instrument. The data collected were analyzed using Cronbach Alpha Statistic to compute the reliability estimate. The result showed reliability co-efficient of 0.84, 0.83, 0.75, and 0.84 respectively for the four clusters and overall average of 0.83 was obtained. This shows that the instrument has high reliability and was able to measure what it is supposed to measure. This was considered adequate; hence it agrees with Emaikwu (2019) who asserts that the reliability of 0.60 and above is considered adequate for the study. The direct delivery and retrieval method was employed in the administration of the questionnaire. Copies of the questionnaire were administered to the respondents in the 309 public schools in the study area. The direct administration and retrieval by personal contact ensured a high return rate of distributed copies of the questionnaire at the end of the exercise.

The data collected was analyzed using the mean and standard deviation to answer the research questions while chi-square statistics was used to test the null hypotheses at 0.05 level of significance. The cut-off points of 2.50 was used for decision making such that any item with a mean score of 2.50 and above was agreement with the item and considered "*High Influence*" while a mean score below 2.50 was disagreement to the item and considered *"Low Influence"*. The hypotheses formulated were tested at 0.05 level of significance using inferential statistics of Chi-square statistic. Chi-square statistic measures the relationships between variables when the data of the research consist of frequencies in discrete categories with independent subjects with data collected at nominal level. Precisely, Chi-square test of goodness -of- fit was used and it tells us if there is a statistically significant difference between the observed set of frequencies and expected set of frequencies and is used when we have only one set of variables with the number of levels of categorical variables (response options) hence the degree of freedom is always K-1 and is determined *a priori* not *a posteriori*. The choice of chi-square test of goodness -of- fit was because the study sought to determine whether principals' administrative strategies could exert significant influence on school

plant maintenance in public Senior Secondary Schools in Taraba State where the researcher established whether or not, an observed or actual frequency differs from a theoretical standard or expected frequency. Chi-square test of goodness -of- fit will help determine how well the observed frequencies fits the expected theoretical frequencies. This is also in line with Emaikwu (2019) that chi-square is a statistical tool meant to compare observed data with expected one in line with a specific hypothesis.

The decision rule for rejection or otherwise of hypotheses was based on the p-value and alpha value. A hypothesis of no significant influence was not rejected for any cluster of items whose p-value was equal to or greater than alpha value of $0.05 (p \geq 0.05)$ while it was rejected for any cluster of items whose p-value is less than alpha value of 0.05 $(p < 0.05)$.

Chi-square test however, does not provide answer regarding the magnitude (quantum) of relationship hence there is need to confirm how significant every obtained significant result of the hypotheses by calculating the *effect size statistic.* Effect size statistic provides an indication of the magnitude of obtained significant results. The procedure for calculating the effect size statistic for chi-square test of goodness-of-fit is by using the coefficient of contingency formular given below

$$C = \sqrt{\frac{x^2}{x^2 + N}}$$

For either R-1 or C-1 equal to 3 (Four categories of response options). Inferences on effect size is such that:

When C value equals to 0.06, it is regarded as small effect size

When C value equals to 0.17, it is regarded as medium effect size

When C value equals to 0.29, it is regarded as large effect size (Pallant, 2011)

Result

Research Question One: what is the influence of principals' planning strategy on school plant maintenance in secondary schools in Taraba State?

In order to answer this research question Frequency count, means and standard deviations of the respondents were calculated using SPSS and presented in Table 1.

Table 1: **Mean Ratings and Standard Deviations of Respondents on Influence of Principals' Planning Strategy on School Plant Maintenance in Secondary Schools in Taraba State(n=618)**

S/N	Item	VHI	HI	LI	VLI	Mean	Std	Remarks
1	Planning effectively influences maintenance of school building	205	281	102	30	3.07	0.83	HI
2	Planning influences maintenance ICT facilities	222	233	133	30	3.05	0.87	HI
3	Planning influences the staffing to be proactive maintenance culture	292	227	67	32	3.26	0.85	HI
4	Planning influences maintenance of furniture in the school	285	203	65	65	3.15	0.98	HI
5	Planning influences the maintenance of school laboratory facilities	257	224	107	30	3.15	0.87	HI
6	Planning influences the maintenance of properties in the school Surroundings	186	333	99	0	3.14	0.66	HI
7	Planning influences Renovation of the school plant as at when due	278	262	13	65	3.22	0.92	HI
8	Planning influences Preventive and	241	205	40	132	2.90	1.14	HI

	predictive maintenance:							
9	Planning influences Running maintenance:	419	166	33	0	3.57	0.75	HI
10	Planning influences Break down maintenance	248	232	138	0	3.18	0.77	HI
11	Planning influences Corrective maintenance:	385	132	71	30	3.41	0.87	HI
	Grand Total	3018	2498	868	414	35.10	9.51	
	Cluster Index	**274**	**227**	**79**	**38**	**3.19**	**0.86**	**HI**

n= Number of Respondents; Std = Standard Deviation; VHI = Very High Influence; HI=High Influence; LI =Low Influence and VLI= Very Low Influence

Table 1 showed the mean scores and standard deviation on influence of Principals' Planning Strategy on the school plant maintenance in secondary schools in Taraba State. The result showed that items 1-11 had mean scores of 3.07, 3.05, 3.26, 3.15, 3.15, 3.14, 3.22, 2.90, 3.57, 3.18 and 3.41 with corresponding standard deviations of 0.83, 0.87, 0.85, 0.98, 0.87, 0.66, 0.92, 1.14, 0.75, 0.77 and 0.87 respectively. Based on the boundary criteria for decision making, it means that the mean scores for all the items were rated above the cut-off point of mean 2.50 on a four-point scale. The cluster mean of 3.19 with standard deviation of 0.86 was also above the cut-off point of 2.50 on a four-point scale. The standard deviations are small which shows that there is no disparity in respondents' responses for the items raised. This result shows that Principals Planning Strategy has high influence on school plant maintenance in secondary schools in Taraba State.

Hypothesis One: Principals' Planning Strategy has no significant influence on school plant maintenance in secondary schools in Taraba State.

In order to test this hypothesis, Chi square test of significance was used as presented in Table 2.

Table 2: Chi-Square Test of Goodness-of-Fit Analysis of the Influence of Principal's Planning Strategy on School Plant Maintenance in Secondary Schools in Taraba State

Response Options	Fo	Fe	Alpha Level	Df	$\chi^2\alpha$	Asymp. Sig.	C	Remark
Very Low Influence	38	154.5						
Low Influence	79	154.5						
High Influence	227	154.5	0.05	3	251.191[a]	0.000	0.5376	S, R
Very High Influence	274	154.5						
Total(N)	**618**							

N= Total number of respondents, Fo =Observed frequency, Fe= Expected frequency Df = degree of freedom, χ2α = chi-square calculated value, Asymp. Sig. = Asymptotic significance value(P-value) under Chi-square test of goodness-o-f fit analysis(P<0.05), C= coefficient of contingency (effect size), S= Significant, R= rejected

The result in Table 2 shows a p-value of .000 which was less than the alpha value of 0.05 at 3 degrees of freedom (i.e .000 < 0.05; df = 3). This indicates that the test is statistically significant therefore, the null hypothesis is rejected implying that Principals' Planning Strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State Nigeria.

The significant result obtained was subjected to coefficient of contingency to establish the magnitude of the significant result. The analysis yielded coefficient of contingency of 0.5376 which is regarded as a large effect size and which when expressed in percentage is equal to 53.76 %. This indicate that Principals' Planning Strategy has 53.76 percent influence on school plant maintenance in secondary schools in Taraba State.

Research question Two: what is the influence of principals' organizing strategy on school plant maintenance in secondary schools in Taraba State?

In order to answer this research question, mean and standard deviation of the respondent were calculated using SPSS and presented in Table 3.

Table 3: **Mean Ratings and Standard Deviations of Respondents on Influence of Principals' Organizing Strategy on School Plant Maintenance in Secondary Schools in Taraba State(n=618)**

S/N	Item	VHI	HI	LI	VLI	Mean	Std	Remarks
12	Organizing influences proper arrangement of school plant maintenance	286	221	75	36	3.22	0.87	HI
13	Organizing influences timely maintenance of school plant	199	319	97	3	3.16	0.69	HI
14	Organizing influences, the staff to ensure there are available resources for school plant maintenance	155	324	132	7	3.01	0.71	HI
15	Organizing influences, the arrangement of school building for maintenance	181	299	130	8	3.06	0.74	HI
16	Organizing influences, the arrangement of physical facilitate.	165	313	132	8	3.03	0.73	HI
17	Organizing influences, the Preventive and predictive maintenance of school plant	158	324	130	6	3.03	0.71	HI
18	Organizing influences Running maintenance of school plant	192	286	134	6	3.07	0.75	HI
19	Organizing influences Break down maintenance of school plant	181	299	136	2	3.07	0.72	HI
20	Organizing influences latest maintenance in their area of school physical facilities	169	303	140	6	3.03	0.73	HI
21	Organizing has influence on Corrective maintenance of school plant	161	311	140	6	3.01	0.73	HI
	Grand Total	1847	2999	1246	88	30.69	7.38	
	Cluster Index	**185**	**300**	**124**	**9**	**3.07**	**0.74**	**HI**

n= Number of Respondents; Std = Standard Deviation; VHI = Very High Influence; HI=High Influence; LI =Low Influence and VLI= Very Low Influence

Table 3 revealed the mean scores and standard deviation on influence of Principals' Organizing Strategy on school plant maintenance in secondary schools in Taraba State. The result showed that items 12-21 had mean scores of 3.22, 3.16, 3.01, 3.06, 3.03, 3.03, 3.07, 3.07, 3.03 and 3.01 with corresponding Standard Deviations of 0.87, 0.69, 0.71, 0.74, 0.73, 0.71, 0.75, 0.72, 0.73 and 0.73 respectively. Based on the boundary criteria for decision making, it means that the mean scores for items all the ten items were rated above the cut-off point of 2.50 on a four-point scale. The cluster mean of 3.07 with standard deviation of 0.74 was also above the cut-off point of 2.50 on a four-point scale. The standard deviations are small which shows that there is homogeneity in respondents' responses for the items raised. This implies that Principals' Organizing Strategy has high influence on school plant maintenance in secondary schools in Taraba State.

Hypothesis Two: Principals' Organizing Strategy has no significant influence on school plant maintenance in secondary schools in Taraba State.

In order to test this hypothesis, Chi square test of significance was used as presented in Table 4.

Table 4: Chi-Square Test of Goodness-of-Fit Analysis of the Influence of Principal's Organizing Strategy on School Plant Maintenance in Secondary Schools in Taraba State

Response Options	Fo	Fe	Alpha Level	Df	□2α	Asymp. Sig.	C	Remark
Very Low Influence	9	154.5						
Low Influence	124	154.5						
High Influence	300	154.5	0.05	3	286.091ᵃ	0.000	0.5625	S, R
Very High Influence	185	154.5						
Total(N)	**618**							

N= Total number of respondents, Fo =Observed frequency, Fe= Expected frequency Df = degree of freedom, χ2α = chi-square calculated value, Asymp. Sig. = Asymptotic significance value(P-value) under Chi-square test of goodness-o-f fit analysis(P<0.05), C= coefficient of contingency (effect size), S= Significant, R= rejected

The result in Table 4 shows a p-value of .000 which was less than the alpha value of 0.05 at 3 degrees of freedom (i.e .000 < 0.05; df = 3). This indicates that the test is statistically significant therefore, the null hypothesis is rejected implying that Principals' organizing Strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State Nigeria.

The significant result obtained was subjected to coefficient of contingency to establish the magnitude of the significant result. The analysis yielded coefficient of contingency of 0.5625 which is regarded as a large effect size and which when expressed in percentage is equal to 56.25 %. This indicate that Principals' organizing Strategy exerts 56.25 percent influence on school plant maintenance in secondary schools in Taraba State.

Research Question Three: How does Principals' Staffing Strategy influences school plant maintenance in secondary schools in Taraba State?

In order to answer this research question, frequency count, mean and standard deviation of the respondent were calculated using SPSS and presented in Table 5.

Table 5: **Mean Ratings and Standard Deviations of Respondents on Influence of Principals' Staffing Strategy on School Plant Maintenance in Secondary Schools in Taraba State(n=618)**

S/N	Item	VHI	HI	LI	VLI	Mean	Std	Remarks
22	Staffing influences Corrective maintenance school plant	169	313	130	6	3.04	0.72	HI
23	Staffing influences proper arrangement of school plant maintenance	144	327	141	6	2.99	0.71	HI
24	Staffing Influences timely maintenance of school plant	390	184	38	6	3.55	0.65	HI
25	Staffing influences, the staff to ensure there are available resources for school plant maintenance	333	209	68	8	3.40	0.73	HI
26	Staffing influences, the arrangement of school building for maintenance	276	252	80	10	3.28	0.75	HI
27	Staffing influences, the	276	248	88	6	3.28	0.74	HI

	arrangement of physical facilitate.							
28	Staffing influences, the Preventive and predictive maintenance of school plant	297	260	52	9	3.37	0.70	HI
29	Staffing influences Running maintenance of school plant	318	241	48	11	3.40	0.71	HI
30	Staffing influences Break down maintenance of school plant	177	284	136	21	3.00	0.80	HI
31	Staffing influences latest maintenance in their area of school physical facilities	182	278	143	15	3.01	0.79	HI
	Grand Total	2562	2596	924	98	32.32	7.3	
	Cluster Index	**256**	**260**	**92**	**10**	**3.23**	**0.73**	**HI**

n= Number of Respondents; Std = Standard Deviation; VHI = Very High Influence; HI=High Influence; LI =Low Influence and VLI= Very Low Influence

Table 5 showed the mean scores and standard deviation on influence of Principals' staffing Strategy on the school plant maintenance in secondary schools in Taraba State. The result showed that items 22-31 had mean scores of 3.04, 2.99, 3.55, 3.40, 3.28, 3.28, 3.37, 3.40, 3.00, and 3.01 with corresponding standard deviations of 0.72, 0.71, 0.65, 0.73, 0.75, 0.74, 0.70, 0.71, 0.80, and 0.79 respectively. Based on the boundary criteria for decision making, it means that the mean scores for all the items were rated above the cut-off point of mean 2.50 on a four-point scale. The cluster mean of 3.23 with standard deviation of 0.73 was also above the cut-off point of 2.50 on a four-point scale. The standard deviations are small which shows that there is homogeneity in respondents' responses for the items raised. This result shows that Principals staffing Strategy has high influence on school plant maintenance in secondary schools in Taraba State.

Hypothesis Three: Principals' Staffing Strategy has no significant influence on school plant maintenance in secondary schools in Taraba State.

In order to test this hypothesis, Chi square test of significance was used as presented in Table 6.

Table 6: Chi-Square Test of Goodness-of-Fit Analysis of the Influence of Principal's Staffing Strategy on School Plant Maintenance in Secondary Schools in Taraba State

Response Options	Fo	Fe	Alpha Level	Df	$\chi 2\alpha$	Asymp. Sig.	C	Remark
Very Low Influence	10	154.5						
Low Influence	92	154.5						
High Influence	260	154.5	0.05	3	299.152[a]	0.000	0.5711	S, R
Very High Influence	256	154.5						
Total(N)	**618**							

N= Total number of respondents, Fo =Observed frequency, Fe= Expected frequency Df = degree of freedom, , χ2α = chi-square calculated value, Asymp. Sig. = Asymptotic significance value(P-value) under Chi-square test of goodness-o-f fit analysis(P<0.05), C= coefficient of contingency (effect size), S= Significant, R= rejected

The result in Table 6 shows a p-value of .000 which was less than the alpha value of 0.05 at 3 degrees of freedom (i.e .000 < 0.05; df = 3). This indicates that the test is statistically significant therefore, the null hypothesis is rejected implying that Principals' staffing Strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State Nigeria.

The significant result obtained was subjected to coefficient of contingency to establish the magnitude of the significant result. The analysis yielded coefficient of contingency of 0.5711 which is regarded

as a large effect size and which when expressed in percentage is equal to 57.11 %. This indicate that Principals' staffing strategy exerts 57.11 percent influence on school plant maintenance in secondary schools in Taraba State.

Research Question Four: what is the influence of Principals' Coordinating Strategy on school plant maintenance in secondary school in Taraba State? In order to answer this research question, frequency count, mean and standard deviation of the respondent were calculated using SPSS and presented in Table 7.

Table 7: **Mean Ratings and Standard Deviations of Respondents on Influence of Principals' Coordinating Strategy on School Plant Maintenance in Secondary Schools in Taraba State(n=618)**

S/N	Item	VHI	HI	LI	VLI	Mean	Std	Remarks
42	Coordinating influences proper arrangement of school plant maintenance	274	309	23	12	3.37	0.65	HI
43	Coordinating influences timely maintenance of school plant	260	150	200	8	3.07	0.89	HI
44	Coordinating influences, the staff to ensure there are available resources for school plant maintenance	380	165	63	10	3.48	0.74	HI
45	Coordinating influences, the arrangement of school building for maintenance	340	174	83	21	3.35	0.84	HI
46	Coordinating influences, the arrangement of physical facilitate.	256	147	206	9	3.05	0.90	HI
47	Coordinating influences, the Preventive and predictive maintenance of school plant	229	194	185	10	3.04	0.86	HI
48	Coordinating g influences Running maintenance of school plant	242	314	49	13	3.27	0.69	HI
49	Coordinating influences Break down maintenance of school plant	295	121	189	13	3.13	0.92	HI
50	Coordinating influences latest maintenance in their area of school physical facilities	233	317	57	11	3.25	0.69	HI
51	Coordinating has influences Corrective maintenance of school plant	285	275	36	22	3.33	0.74	HI
	Grand Total	2794	2166	1091	129	32.34	7.92	
	Cluster Index	**279**	**217**	**109**	**13**	**3.23**	**0.79**	**HI**

n= Number of Respondents; Std = Standard Deviation; VHI = Very High Influence; HI=High Influence; LI =Low Influence and VLI= Very Low Influence

Table 7 showed the mean scores and standard deviation on influence of Principals' coordinating Strategy on the school plant maintenance in secondary schools in Taraba State. The result showed

that items 42-51 had mean scores of 3.37, 3,07, 3.48, 3.35, 3.05, 3.04, 3.27, 3.13, 3.25, and 3.33 with corresponding standard deviations of 0.65, 0.89, 0.74, 0.84, 0.90, 0.86, 0.69, 0.92, 0.69, and 0.74 respectively. Based on the boundary criteria for decision making, it means that the mean scores for all the items were rated above the cut-off point of mean 2.50 on a four-point scale. The cluster mean of 3.23 with standard deviation of 0.79 was also above the cut-off point of 2.50 on a four-point scale. The standard deviations are small which shows that there is homogeneity in respondents' responses for the items raised. This result shows that Principals coordinating Strategy has high influence on school plant maintenance in secondary schools in Taraba State.

Hypothesis Four: Principals' Coordinating Strategy has no significant influence on school plant maintenance in secondary schools in Taraba State.

In order to test this hypothesis, Chi square test of significance was used as presented in Table 8.

Table 8: Chi-Square Test of Goodness-of-Fit Analysis of the Influence of Principal's Coordinating Strategy on School Plant Maintenance in Secondary Schools in Taraba State

Response Options	Fo	Fe	Alpha Level	Df	☐2α	Asymp. Sig.	C	Remark
Very Low Influence	13	154.5						
Low Influence	109	154.5						
High Influence	217	154.5	0.05	3	268.602a	0.000	0.5504	S, R
Very High Influence	279	154.5						
Total(N)	618							

N= Total number of respondents, Fo =Observed frequency, Fe= Expected frequency Df = degree of freedom, χ2α = chi-square calculated value, Asymp. Sig. = Asymptotic significance value(P-value) under Chi-square test of goodness-o-f fit analysis(P<0.05), C= coefficient of contingency (effect size), S= Significant, R= rejected

The result in Table 8 shows a p-value of .000 which was less than the alpha value of 0.05 at 3 degrees of freedom (i.e .000 < 0.05; df = 3). This indicates that the test is statistically significant therefore, the null hypothesis is rejected implying that Principals' Coordinating Strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State Nigeria.

The significant result obtained was subjected to coefficient of contingency to establish the magnitude of the significant result. The analysis yielded coefficient of contingency of 0.5504 which is regarded as a large effect size and which when expressed in percentage is equal to 55.04 %. This indicate that Principals' coordinating strategy has 55.04 percent influence on school plant maintenance in secondary schools in Taraba State.

The finding of the study revealed that principals' planning strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State Nigeria. This finding is in line with the finding of Adeleke (2018) which revealed that there is a significant relationship between university plant planning and effectiveness in North-central Nigeria. It was concluded that the level of effectiveness in North-central public universities was low and this may not be unconnected with the inadequacy of the university plant planning in terms of location, aesthetic, building design, building size, students and employees' safety. Thus, the more adequate the university plant planning, the more the universities in North-central Nigeria are effective. The finding also agrees with that of Ijekpa and Mkpa (2020) which found that PTA executives and Principals agree on the need to apply the strategies of restitution for damages, setting aside equipment fee, and effective monitoring of school plant. This means that planning effectively influences maintenance of school building, planning influences maintenance ICT facilities, planning influences the staffing to be proactive maintenance culture, planning influences maintenance of furniture in the school, planning influences the maintenance of school laboratory facilities, planning influences the maintenance of properties in the school surroundings, planning influences renovation of the school plant as at when due, planning influences preventive and predictive maintenance, planning influences running maintenance, planning influences break down maintenance and that planning influences corrective maintenance.

The second finding revealed that principals' organizing strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State. This implied that organizing influences proper arrangement of school plant maintenance, organizing influences timely maintenance of school plant, organizing influences, the staff to ensure there are available resources for school plant maintenance, organizing influences, the arrangement of school building for maintenance, organizing influences, the arrangement of physical facilitate, organizing influences, the preventive and predictive maintenance of school plant, organizing influences running maintenance of school plant, organizing influences latest maintenance in their area of school physical facilities and that organizing has influences corrective maintenance of school plant. This finding corroborates with the finding of Okeke (2021) which revealed that teachers agreed on the principals' organizing strategy for school plant maintenance in secondary schools in Awka Education Zone. The finding also revealed that there is no significant difference in the mean ratings of male and female principals on organizing strategies for school plant maintenance in secondary schools in Awka Education Zone.

The study also revealed that principals' staffing strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State. This indicated that staffing influences corrective maintenance school plant, staffing influences proper arrangement of school plant maintenance, staffing influences timely maintenance of school plant, staffing influences, the staff to ensure there are available resources for school plant maintenance, staffing influences, the arrangement of school building for maintenance, staffing influences, the arrangement of physical facilitate, staffing influences, the preventive and predictive maintenance of school plant, staffing influences running maintenance of school plant, staffing influences break down maintenance of school plant and that staffing influences latest maintenance in their area of school physical facilities. The finding corroborates with the finding of Arinze (2015) which revealed that secondary schools do not hire qualified personnel nor organize for capacity building of their personnel for maintenance of physical facilities. The study also revealed that there is inadequate supervision and monitoring of the physical facilities in secondary schools.

The study further revealed that principals' coordinating strategy has significant positive influence on school plant maintenance in secondary schools in Taraba State. This implied coordinating influences proper arrangement of school plant maintenance, coordinating influences timely maintenance of school plant, coordinating influences, the staff to ensure there are available resources for school plant maintenance, coordinating influences, the arrangement of school building for maintenance, coordinating influences, the arrangement of physical facilitate, coordinating influences, the preventive and predictive maintenance of school plant, coordinating g influences running maintenance of school plant, coordinating influences break down maintenance of school plant, coordinating influences latest maintenance in their area of school physical facilities and that coordinating has influences corrective maintenance of school plant. This finding aligns with that of Izobo-Martins (2014) which revealed that most academic buildings, especially classrooms in public secondary schools investigated were in the state of disrepair, and that there was not coordinating taken in addressing the situation. The findings of the study also showed that there is majorly no maintenance documentation in terms of maintenance manual or computers in the public secondary school buildings. The finding also agrees with that of Nweneka (2016) which revealed that no significant difference exists in the opinions of respondents on maintenance of teaching facilities in secondary schools in Zaria Education Zone, Kaduna State. In addition, the finding showed no significant difference in the opinions of respondents on maintenance of learning facilities in secondary schools in Zaria Education Zone, Kaduna State.

Conclusion and Recommendations

Analysis of data from the study clearly shows that the maintenance of school plant in secondary schools in Taraba State is significantly influenced by the principals' administrative strategies of Planning, Organizing, Staffing and Coordinating. It was therefore recommended that:

1. Principals and Vice principals of secondary schools in Taraba State should embark on short term and long-term planning, both administratively and academically for smooth operation of the school calendar.

2. Principals of secondary schools in Taraba State are to effectively organise the human (Staff and Students) and material resources on day-to-day basis towards effective performance.

3. School principals should seek for capable and well qualified individuals and recommend same to the Proprietors for employment where there exists short fall in human resources.

4. Principals and Vice principals of secondary schools in Taraba state should provide active and efficient coordination of all their school plant activities with the aim of aim of sustaining the smooth operation of the school plant.

References

1. Achimugu, L. (2008). Agencies of Nigerian teachers. NUT, friend or foe? Port Harcourt: Baron Press Ltd.

2. Adeleke, F. O. (2018). The relationship between university plant planning and effectiveness in North-central Nigeria. Unpublished Thesis, University of Ilorin.

3. Agoha, R.C. (2008). Administrative Strategies for School Plant Maintenance in Secondary Schools in Okigwe Education Zone. Unpublished master's project presented to the department of Educational Foundations University of Nigeria, Nsukka.

4. Agu, J.C. & Okoli, E. J. (2021). Principal's Administrative Strategies And Teacher Job Performances In Secondary Schools In Onitsha North L.G.A. *International Journal of Innovative Psychology & Social Development* 9(1), 52-63.

5. Amanchukwu, R. N., and Olulube, N. P. (2015). Managing school plant for effective service delivery in public secondary schools in Rivers State of Nigeria. *Human Resource Management Research,* 5(4), 95-102.

6. Anikweze, C. M. (2016). *Simplified approach to educational research*. Shiloh Press Associates. Onitsha, Nigeria.

7. Arinze, O.C. (2015). The strategies in maintenance of physical facilities in secondary schools in Okigwe education zone of Imo state Nigeria. Unpublished M.Ed dissertation University of Nigeria Nsukka, Nigeria.

8. Asiegbu, E. C. (2014). School plant maintenance. In G. O. Unachukwu& P. N. Okorji (Eds.), *Educational management. A skill building approach* (pp. 213-338). Onitsha: Rex Charles and Practice.

9. Asiyat, R. I. (2012). Assessing school facilities in public secondary schools in Delta State, Nigeria. African Research Review, 6(2), 192-203.

10. Federal Republic of Nigeria (2013). *National policy on education*. Lagos: NERDC Press.

11. Ijekpa, B.A. & Mkpa, A.M. (2020). Principals' school plant management strategies, as perceived by parent-teacher-association executives in Nigerian public schools. *International Journal of Research Publications (IJRP.ORG),* 55(1), 68-86.

12. Izobo-Martins, O. (2014). Maintenance Strategies and Condition of Public Secondary School Buildings in Ado-Odo/Ota Local Government Area Ogun State, Nigeria (Doctoral dissertation, Covenant University, Ota Nigeria).

13. Nweneka , A.O. (2016). Assessment of availability and maintenance of school plant in secondary schools in Zaria Education Zone, Kaduna State, Nigeria. Unpublished dissertation submitted to the department of Education Foundations and Curriculum, Educational Administration and Planning section, Ahmadu Bello University, Zaria.

14. Ochai, G. (2012). *The scope of educational administration*. Makurdi: Success World Publications.

15. Ogbonnaya, N.O, Oboegbulem, A.I., Onwura, C.U, & Enyi, D. (2013). *Fundamentals in educational administration and planning*. Nsukka: Chuka Educational Publishers.

16. Okeke, N.I. (2021). Principals' organizing strategies for school plant maintenance in secondary schools in Awka education zone of Anambra State. *Unizik Journal of Educational Research and Policy Studies* 13 (1), 167-173.

17. Pallant, J. (2011). *Statistical package for social sciences: A step-by-step guide to data analysis* (4th ed.). China: Everbest Printing Limited.

18. Tyokyaa, C. I. (2015). *Educational planning and management techniques*. Makurdi: Impart Communications.