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STRATEGIES FOR ENHANCING AGRICULTURAL BUILDING MAINTENANCE CULTURE AMONG FARMERS IN ENUGU STATE

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Abstract: *The study examined the strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. The study adopted a descriptive survey research design. Three research questions and three null hypothesis were used to achieve the purpose of the study. The null hypotheses were tested at probability of 0.05 level of significance. The population of the study comprised 170 respondents made up of 53 agricultural extension workers and 117 registered farmers with the Enugu State agricultural development programme. There was no sampling because the population was manageable. Structured questionnaire was used for data collection made up of 30 items. The instrument was validated by three experts and Cronbach Alpha Statistics was used to determine the internal consistency of the instrument and a coefficient of 0.71 was obtained. The data collected were analysed using mean and standard deviation to answer the research questions and t-test were used in testing the null hypothesis. The study found out twelve (12) planned, seven (7) preventive and eleven (11) maintenance strategies that could be used to enhance agricultural building maintenance culture among farmers in Enugu State. The null hypothesis tested showed that there was no significant difference between the mean responses of the agricultural extension workers and farmers with respect to the strategies that could enhance agricultural building maintenance among farmers in Enugu State. Based on these findings, it was recommended that farmers should use planned maintenance strategies to enhance agricultural building maintenance culture; agricultural extension workers should enlighten farmers on the benefits of using preventive maintenance strategies and government should subsidize the cost of building materials to enable the farmers to use corrective maintenance strategies to enhance their building maintenance culture.*

Key words: *Strategies, Enhancement, Agricultural Building, Maintenance Culture and Farmers.*

Introduction

Maintenance is an action taken on anything to keep it working or to restore it to a good working condition. It involves the continuous sustenance of product for optimal operations. (The Nigerian educational research and development council (NERDC), 2020). Amobi (2006) viewed maintenance as continuous up keep in good condition of a system(s) to achieve operational reality with maximum designed output, result and stability. Culture on the other hand is a way of life, customs, and beliefs, traditions, habits that portray the attributes of a person/people (Hornby, 2015). Sinclair (2013) see culture as that which consist of ideas, customers and art produced by a particular society. Therefore, maintenance culture is a way of thinking behaviour and attitude of people towards keeping anything in good working condition in order to achieve maximum designed output, result and stability. With reference to this study, maintenance culture refers to the attitudes of farmers towards maintaining agricultural buildings in Enugu State.

Agricultural buildings are buildings which are designed to protect the farmer and his family livestock (animals), machineries, crops and any other agricultural products. Martinot (2020) defined agricultural building as any of the structures used in farming operations which may include building to house families and workers as well as machineries, livestock and crops. Akinsanmi, Akinsanmi, Adebisi and Olumakaiye (2011) saw it as complex and bigger erections which are designed and

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constructed to serve different purposes. Agricultural buildings are made of wood, concrete or mud with grasses, aluminium or tile roofs. The authors gave examples of agricultural buildings as utility buildings, storage houses, production houses, farm offices and security post. Agricultural buildings according to Onsase (2018), are important in the following ways: They protect the farmer and livestock from predators; they help to control livestock diseases and parasites; they provide shelter against extreme weather conditions; they provide storage for farm produce and other variable inputs; they increase efficiency of production and management in the farms.

Agricultural buildings are expected to exist for a long time regardless of whether or not they have actually been designed and constructed properly to do so. In Enugu State which is the study area, the attitude of farmers towards building agricultural houses without thinking of future performance of the building which results to dilapidation and collapse is a negative behaviour. It should be noted that building maintenance should be incorporated from the design stage and should start as soon as the house is ready for use for the building to last long. Building experts are of the view that good maintenance begins from the drawing board (Imakwu, 2014). Poor building maintenance culture has become an issue to be examined in Enugu State due to the nature and way some agricultural buildings have been left to decay. The major maintenance generators with regards to agricultural buildings are the farmers who are usually careless in the usage of the properties and can introduce error during construction.

In Enugu State, it seems that there is declining agricultural building maintenance culture among farmers and this has negative impact to these building. Maintenance of building is an important practice that is required to ensure that an item performs optimally to the users. Building maintenance is the combination of technical and administrative actions to ensure that the items and elements of a building are in an acceptable standard to perform its required functions (Abas, 2014). In the context of this study, building maintenance are all the actions taken by farmers to ensure that agricultural building are in acceptable standard to perform their required functions, Imakwu (2014) highlighting the importance of maintenance pointed out that maintenance helps to preserve the physical characteristics of a building and its services and prolong the useful life of any property due to reduction in breakdown. Caterpillar (2004) equally opined that maintenance is essential to reduce failure rate and ensure adequate equipment operation. In the view of Abas (2014), the objectives of building maintenance are as follows:

- to provide safe, secure and efficient working and living environment;
- to avoid deterioration of physical assets; to maximize the aesthetics and economic values;
- increase the health and safety of the occupants and to extend the useful life of the building.

Based on the above objectives of building maintenance, Sani, Mohammed, Misnan and Awang (2012) opined that developing building maintenance culture is essential to increase the awareness about the maintenance activities on assets. This is because when a building is in a bad shape, it constitutes environmental hazard. Therefore there are some straggles that can be adopted to enhance agricultural building maintenance culture among farmers. A farmer is a person who owns and manages a farm (Hornby, 2018). Farmers manage their farms effectively through the assistance of agricultural extension workers. Agricultural extension workers are trained personnels employed by the government with the aim of disseminating new research information on the improved techniques of farming to farmers, helping them to improve on their farming skills and general welfare (Ugwuoke & Ejiofor, 2010). In the context of this study, an extension worker is a person who identifies the strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

A strategy is a structured and carefully devised plan for achieving a desired goal or objective. It is the mechanism by which an organization deploys its

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resources in form of men, materials and finance to execute a plan of action that has been laid down to achieve an objective efficiently (Okechukwu, 2016). Strategy answers the questions – why, when, how and by who? (Imakwu, 2018). In the context of this study, strategy means a laid down plan to be deployed by a farmer to maintain agricultural buildings. The need for strategies to maintain agricultural buildings cannot be overemphasized. This is because all agricultural buildings as well as the materials and components deteriorate over time due to usage and effects of weather. According to Seeley (2013), the appearance and life span of a building are affected depending on the maintenance of the building. Farmers can use planned, preventive and corrective maintenance strategies to maintain their agricultural buildings.

Planned maintenance is a type of maintenance organized and carried out with forethought, control and use of records to a predetermined plan. Planned maintenance strategies according to Amobi (2006) include preparing schedule time for the maintenance; advance determination of the completion date; advance listing of materials and equipments required; advance determination of labour requirements; delivering job instruments on time; advance identification of unusual safety hazards, timely preparation of work orders and requesting for materials; prior development of the list of feedback from field supervisors; having written procedures before starting. This implies that planning for maintenance of agricultural building helps to prevent damage to buildings.

Preventive maintenance is a type of maintenance that is carried out at predetermined intervals or corresponding to prescribed criteria and is intended to reduce the probability of failure or the performance degradation of an item, (Imakwu, 2018). Shaibu (2016) opined that preventative maintenance is carried out on an equipment before breakdown occurs. Prevent maintenance strategies according to Amobi (2006) include the following: advance choosing of right materials for building construction; adhering strictly to design specifications during construction; giving some materials special treatment before use; using experience and skilled workers for constructing the 'building' and using fire resistant materials and estimating cost of repairs before breakdown. Akinsanmi et al (2011) added dipping of wooden parts of arm structures in preservatives in order to protect them against insects. If preventive maintenance is carried out during construction of building, it will help reduce corrective maintenance.

Corrective maintenance which is also called failure based maintenance is one carried out when an item has failed or become worn out. Corrective maintenance covers all activities like repair or replacement of an element that has failed to a point that it cannot perform its required function (Shaibu, 2016), corrective maintenance strategies are tiling of floors to close cracks and holes; replacing old leaking roofs; building drainages around the building; providing porches to protect the front door from rain; treating wooden materials with chemicals to prevent insects from destroying the woods; providing claddings to check bad weather and painting houses to be attractive (Amobi, 2006). Akinsanmi et al (2014) added patching of cracks on the walls and cementing floors where necessary and replacing of badly damaged parts of farm structures or buildings as corrective measures. This implies that if corrective maintenance strategies are taken seriously by farmers in Enugu State, agricultural building maintenance culture in the State would be enhanced.

Enhancement is a strategy used to augment or make something grater. According to Sinclair (2013), enhancement means improvement of value, quality or attractiveness of something. With reference to this study to enhance maintenance agricultural building by farmers means to improve maintenance culture in order to increase the values and attractiveness of these agricultural buildings. Poor maintenance culture by farmers has left many agricultural buildings in bad shapes, leading to collapse of these buildings, loss of agricultural produce to insects, rodents, virmins, etc and deterioration of building components. Hence, there is

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need to look into the strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. Specifically, the study sought to:

1. determine the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.
2. determine the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.
3. determine the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Research Questions

The following research questions guided the study:

1. what are the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.
2. what are the prevent maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.
3. what are the correct maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

Ho_1: There is no significant difference between the mean ratings of agricultural extension workers and farmers on the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Ho_2: There is no significant difference between the mean ratings of agricultural extension workers and farmers on the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Ho_3: There is no significant difference between the mean ratings of agricultural extension workers and farmers on the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Research Method

The descriptive survey research design was adopted for the study. This research design was used because it is a type of design in which a group of people or items are studied by collecting and analysing data from only a few items considered to be representative of the entire group (Nworgu, 2011). The area of study was Enugu State which comprises six agricultural zones, namely: Agbani, Awgu Enugu, Enugu Ezike, Obollo-Afor and Udi. The population for the study comprised of 170 respondents made up of 117 registered farmers and 53 extension workers (source: Enugu State Agricultural Development Programme Office, Enugu, 2020). There was no sampling because the population size was manageable, hence the entire population was used.

The instrument used for data collection was a structured questionnaire. The questionnaire contained a total of 22 items which sought for information on planned, preventive and corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. Each strategy maintenance item had a four-point scale of Strongly Agree (AS) – 4, Agree (A) – 3, Disagree (D) – 2, and Strongly Disagree (SD) – 1.

The instrument was subjected to face validation by three experts, two from the Department of Technology and Vocational Education and one from Measurement and Evaluation of the Department of Education Foundation both from the Faculty of Education in Enugu State University of Science and Technology, Enugu. They validated the instrument to ensure the appropriateness of the measuring instrument and that the instrument was structured to address the purpose of the study (Uzoagulu, 2011). The comments of the validators were used to modify the final

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instrument used for data collection. The reliability of the instrument was determined by using Cronbach Alpha reliability method to determine the internal consistency of the instrument. The clusters yielded a coefficient reliability of 0.71.

A total of 170 copies of the questionnaire were distributed to the correspondents with the help of three research assistants. These assistants were properly guided to assist the researcher in administrating the instruments to the respondents. A total of 170 copies were properly filled and returned, giving a return rate of 100%. It was this 170 properly filled copies that were used for data analysis. Mean with standard deviation were used to answer the research questions while the t-test were used to test the null hypothesis of no significant difference at probability level of 0.5. The decisions were based using real limits of the mean thus:

- Strongly Agree 3.50 – 4.00
- Agree 2.50 – 3.49
- Disagree 1.50 – 2.49
- Strongly Disagree 1.00 – 1.49

The null hypotheses was not rejected when the calculated t-value was less than or equal to the critical t-value but rejected when the calculated t-value was greater or equal to the critical value of 1.96.

RESULTS

The result of the study were presented in tables according to the research questions and hypotheses that guided the study.

Research Question 1:

What are the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State?

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Table 1:
Mean Ratings and Standard Deviation of Agricultural Extension Workers and Farmers on the Planned Maintenance Strategies for Enhancing Agricultural Building Maintenance Culture among Farmers in Enugu State.

S/N	Planned building maintenance strategies are	Agricultural extension workers' N=53		Farmers N=117		Overall		Decision
		$\bar{X}_1$	SD_1	$\bar{X}_2$	SD_2	$\bar{X}$	SD	
1.	Always prepare schedule time for maintenance before starting	3.68	0.61	3.41	0.84	3.53	0.73	SA
2.	Having written procedures before starting	3.45	0.70	3.20	0.98	3.33	0.84	A
3	Advance determination of completion date	3.70	0.54	3.86	0.41	3.78	0.48	SA
4	Incorporating maintenance from design stage	3.89	0.38	3.51	0.81	3.70	0.60	SA
5	Advance listing of materials and equipment required	3.81	0.56	3.82	0.48	3.82	0.52	SA
6	Advance determination of labour requirements	3.91	0.35	3.74	0.61	3.83	0.49	SA
7	Delivering job instruments on time	3.87	0.44	3.79	0.49	3.83	0.47	SA
8	Advance identification of unusual safety hazards before starting	3.36	0.88	2.93	0.98	3.15	0.93	A
9	Timely preparation of work orders and requesting for materials	3.87	0.39	3.74	0.53	3.81	0.46	SA
10	Prior development of the list of feedback from field supervisors	3.70	0.54	3.81	0.49	3.76	0.52	SA
11	Having written procedures before starting	3.77	0.54	3.69	0.62	3.73	0.58	SA
12	Prior training of personnel on emergency procedures before starting	3.70	0.54	3.86	0.41	3.78	0.48	SA
	Grand Cluster value	**3.72**	**0.54**	**3.61**	**0.67**	**3.67**	**0.59**	**SA**

The data presented in Table 1 shows that planned maintenance items had grand means of 3.72 and 3.61 respectively for Agricultural Extension Workers and farmers showing that both respondents strongly agree to these items as planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. They had mean ratings of 3.36 to 3.89 for agricultural extension workers and 2.93 to 3.86 for farmers.

Hypothesis 1
There is no significant difference between the mean ratings of agricultural extension workers and farmers on the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

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Table 2

Summary of t-test analysis of mean ratings of agricultural extension workers and farmers on the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State

Variables	N	$\bar{x}$	SD	df	t-cal	t-crit	Decision
Agricultural Extension workers	53	3.72	0.54	168	1.43	1.96	NS
Farmers	117	3.61	0.67				

The t-test analysis in Table 2 above shows that the calculated t value at 0.05 level of significance and 168 degree of freedom is 1.43. Since t-calculated is less than t-critical value of 1.96, the null hypothesis was not rejected. Therefore, there is no significant difference in the mean responses of agricultural extension workers and farmers in planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Research Question 2

What are the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State?

Table 3

Mean Ratings and Standard Deviation of Agricultural Extension Workers and Farmers on the Preventive Maintenance Strategies for Enhancing Agricultural Building Maintenance Culture among Farmers in Enugu State.

S/N	Preventive building maintenance strategies are	Agricultural Extension Workers N=53		Farmers N=117		Overall		Decision
		$\bar{x}_1$	SD_1	$\bar{x}_2$	SD_2	$\bar{x}$	SD	
1.	Advance choosing of the right materials for building construction	3.91	0.35	3.91	0.35	3.91	0.35	SA
2.	Adhering strictly to design specification during construction	3.94	0.23	3.97	0.15	3.96	0.20	SA
3	Giving some materials special treatment before use	3.68	0.67	3.62	0.64	3.65	0.66	SA
4	Using experienced and skilled workers for constructing the building	3.83	0.47	3.77	0.58	3.80	0.53	SA
5	Estimating cost of repairs	3.91	0.35	3.75	0.64	3.83	0.50	SA
6	Dipping of wooden parts of farm structures in preservatives to fight against insect attack	3.74	0.71	3.70	0.65	3.72	0.68	SA
7	Checking he topography of the area	3.85	0.53	3.79	0.57	3.82	0.55	SA
	Grand Cluster Value	**3.83**	**0.47**	**3.78**	**0.68**	**3.81**	**0.49**	**SA**

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The analysis presented in Table 3, shows that the mean scores for agricultural extension workers and farmers are all greater than 3.50 respectively for all the items. The mean shows that the agricultural extension workers and the farmers strongly agree that the item statements are preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. The standard deviation range from 0.20 to 0.68 which indicates that the respondents are not far from one another in their responses.

Hypothesis 2

There is no significant difference between the mean ratings of agricultural extension workers and farmers on the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Table 4

Summary of t-test analysis of mean ratings of agricultural extension workers and farmers on the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State

Variables	N	$\bar{X}$	SD	df	t-cal	t-crit	Decision
Agricultural Extension Workers	53	3.83	0.47	168	0.82	1.96	NS
Farmers	117	3.78	0.68				

The t-test analysis in Table 4 above shows that the calculated t-value is 0.82 at 168 df and 0.05 level of significance. Since t-calculated is less than the t-critical value of 1.96, the null hypothesis was not rejected. Therefore, there is no significant difference in the mean responses of agricultural extension workers and farmers on the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Research Question 3

What are the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State?

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Table 5
Mean Ratings and Standard Deviation of Agricultural Extension Workers and Farmers on the Corrective Maintenance Strategies for Enhancing Agricultural Building Maintenance Culture among Farmers in Enugu State.

S/N	Corrective building maintenance strategies are	Agricultural Extension Workers N=53		Farmers N=117		Overall		Decision
		$\bar{x}_1$	SD_1	$\bar{x}_2$	SD_2	$\bar{x}$	SD	
1.	Replacement of an element (materials) that has failed to a point	3.64	0.59	3.70	0.58	3.69	0.59	SA
2.	Tiling of floors to close cracks and holes	3.21	0.84	3.21	0.95	3.21	0.90	SA
3.	Replacing old/leaking roofs	3.40	0.74	3.74	0.46	3.57	0.60	SA
4.	Building drainages around the building	3.45	0.74	3.69	0.62	3.57	0.66	SA
5.	Providing porches to protect the front door form rain	3.81	0.44	3.79	0.46	3.80	0.45	SA
6.	Treating wooden materials with chemicals to prevent insect attacks.	3.92	0.27	3.84	0.45	3.88	0.35	SA
7.	Painting the houses to be attractive	3.42	0.69	3.14	0.89	3.28	0.79	A
8.	Providing cladding to check bad weather	3.43	0.77	3.28	0.87	3.36	0.82	A
9.	Renovating all parts of the building occasionally	3.11	0.75	3.16	0.94	3.14	0.95	A
10.	Patching of cracks on the walls	3.96	0.19	3.83	0.44	3.90	0.32	SA
11.	Cementing floors where necessary	3.16	0.94	3.11	0.95	3.14	0.95	A
	Grand Cluster Value	**3.50**	**0.62**	**3.49**	**0.69**	**2.83**	**0.67**	**A**

The analysis presented in Table 5, shows that the item denoted by item 1, 2, 4, 5, 6, and 10 were strongly agreed to by the respondent as corrective maintenance strategies. They had mean ratings of 3.90, 3.88, 3.80, 3.67, 3.57 and 3.57 respectively. Other items had mean ratings ranging from 2.83 to 3.36 indicating that these items were also agreed to by the respondents as corrective maintenance culture among farmers in Enugu State.

Hypothesis 3
There is no significant difference between the mean ratings of agricultural extension workers and farmers on the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

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Table 6

Summary of t-test analysis of mean ratings of agricultural extension workers and farmers on the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State

Variables	N	$\bar{X}$	SD	df	t-cal	t-crit	Decision
Agricultural Extension Workers	53	3.50	0.62	168	1.22	1.96	NS
Farmers	117	3.49	0.69				

The t-test analysis presented in Table 6 shows that the t-value at 0.05 level of significance and 168 degree of freedom for the 11 items is 1.22. Since t-calculated is less than the t-critical value of 1.96, the null hypothesis was not rejected. Therefore, there is no significant difference in the mean responses of agricultural extension workers and farmers on the corrective maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.

Findings

The following findings were made based on the result of the data analysed.

1. Agricultural extension workers and farmers strongly agreed that planned maintenance strategies could be used to enhancing agricultural building maintenance culture among farmers in Enugu State.
2. A significant difference did not exist between the mean ratings of the responses of agricultural extension workers and farmers on the planned maintenance strategies that could be used to enhancing agricultural building maintenance culture among farmers in Enugu State.
3. Agricultural extension workers and farmers strongly agreed that preventive maintenance strategies that could be used to enhancing agricultural building maintenance culture among farmers in Enugu State.
4. There is no significant difference in the mean responses of agricultural extension workers and farmers on the preventive maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State.
5. Agricultural extension workers and farmers agree that corrective maintenance strategies could be used to enhance agricultural building maintenance culture among farmers in Enugu State.
6. A significant difference did not exist between the mean responses of agricultural extension workers and farmers on corrective maintenance strategies that could be used to enhancing agricultural building maintenance culture among farmers in Enugu State.

Discussion

Agricultural extension workers and farmers agreed that planned maintenance strategies could help in enhancing agricultural building maintenance culture among farmers in Enugu State. A grand mean of 3.67 and standard deviation of 0.59 were obtained for all the items 1 – 12. The items include always preparing schedule time for maintenance before starting having written procedures before starting, incorporating maintenance from design stage, advance listing of materials and equipment required among others. This is in line with the findings of Amobi (2006) that planned maintenance strategies include preparing schedule time for maintenance, advance listing of materials and equipment; advance determination of completion date; having written procedures before starting. These planned maintenance strategies save costs and benefit both farmers, workers, consumers and will equally ensure the shelf life of both crops and animals. Hence,

farmers should use these planned maintenance strategies to avoid unusual safety hazards before starting maintenance work.

The result of the hypothesis tested also showed no significant difference between the mean response of agricultural extension workers and farmers on the planned maintenance strategies for enhancing agricultural building maintenance culture among farmers in Enugu State. With 168 degree of freedom at 0.05 level of significance, the t-test critical value was 1.96 while t-test calculated value was 1.43. This showed that the agricultural extension workers and farmers agree that planned maintenance strategies could be used to enhance agricultural building maintenance culture among farmers in Enugu State.

Research question two (2) revealed that all the preventive maintenance strategies were strongly agreed by both the agricultural extension workers and farmers as strategies that could help in enhancing agricultural building maintenance culture among farmers in Enugu State. They had means of 3.83 and 3.78 and standard deviation of 0.47 and 0.68 respectively. This upholds the opinion of Imakwu (2018) that preventative maintenance is a type of maintenance that is carried out at predetermined intervals or corresponding to prescribed criteria and is intended to reduce the probability of failure or the performance degradation of an item. This is also in line with Amobi (2006) who outlined preventive maintenance strategies as advance choosing of right materials for building construction, adhering strictly to design specification during construction, giving some materials special treatment before use, using fire resistant materials, using experienced and skilled workers for constructing the building. Akinsanmi et al. (2011) added dipping the wooden parts of farm structures in preservatives in order to protect them against insects. Preventive maintenance strategies are in line with strategies to enhance agricultural building maintenance culture among farmers. This is because a farmer who is not aware of preventive maintenance strategies will not successfully carry out a preventive maintenance of agricultural buildings.

The hypothesis tested on preventive maintenance strategies indicated that there is no significant difference in the mean ratings of agricultural extension workers and farmers with respect to preventive maintenance strategies that could enhance agricultural building maintenance culture among farmers in Enugu State. Based on this hypothesis of no significant difference, it seems that some of the farmers deliberately choose wrong materials for agricultural building construction in order to save money and hardly adhere strictly to design specification during construction. Some of them equally consider it wasteful giving some materials special treatment before using them in agricultural building construction nor do they use experienced and skilled workers during construction. Some farmers equally do not use fire resistant materials in constructing agricultural buildings. Since prevention is better than cure, preventive maintenance strategies will help farmers save cost and prevent building collapse.

Furthermore, from research question three (3), it was found out that agricultural extension workers and farmers agreed to all the corrective maintenance strategies as means of enhancing agricultural maintenance culture among farmers in Enugu State. They had means of 3.50 and 3.49 with standard deviation of 0.62 and 0.69 respectively. These items were replacing old/leaking roof; building drainages around the building; replacement of an element that has failed to appoint; tiling of floors to close cracks and holes; providing porches to protect he front door from rain; treating wooden materials with chemicals to prevent insect attacks, painting the house to be attractive; providing cladding to check bad weather, renovating all parts of the building occasionally; patching of cracks on the walls and cementing floors where necessary. This is line with Akinsanmi et al (2011) who viewed corrective maintenance strategies as patching of cracks on the walls, cementing floors where necessary, replacing of badly damaged parts of farm

structure and buildings. Shaibus (2016) supported Akinsanmi et al (2011) by opining that corrective maintenance strategies is called failure based maintenance carried out when an item has failed or become worn out. The author further saw it as a strategy that covers all activities like repair or replacement of an element that has failed to a point that it cannot perform its required function. This implies that if corrective maintenance strategies are used by farmers in Enugu State, it will help to prolong the life span of agricultural buildings and enhance their values and appearance. This is because appearance and lifespan of a building are affected by the level of its maintenance (Seeley, 2013).

The null hypothesis tested in table 6 showed that there is no significant difference between the mean ratings of agricultural extension workers and farmers on corrective maintenance culture strategies that could enhance agricultural building maintenance among farmers in Enugu State. This shows that the agricultural extension workers and farmers agreed that corrective maintenance strategies could enhance agricultural building maintenance culture among farmers. The non-significant difference may equally be that the respondents were not influenced with respect to their responses to these items and the farmers' position had no influence on their responses to the corrective maintenance strategies that could enhance agricultural building maintenance among farmers.

Conclusion

Maintenance is an action taken on anything (agricultural building) to keep it working or to restore it to a good working condition. In order to achieve this and have sustenance of a product (agricultural building) for optimal operations, it is necessary that farmers should employ both planned, preventive and corrective maintenance strategies to enhance their agricultural building maintenance culture. This is because these maintenance strategies help to prolong the life span of buildings and enhance their values for the benefits of both the farmers and the users. Hence the goal of building maintenance is to preserve the physical characteristics of a building and its services and prolong the useful life.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Farmers should use planned maintenance strategies to enhance their agricultural building maintenance culture in Enugu State.
2. Agricultural extension workers should enlighten the farmers on the benefits of using preventive maintenance strategies in enhancing agricultural building to prevent deterioration and breakdown of agricultural buildings.
3. Government should subsidize the cost of building materials to encourage the farmers to employ the corrective maintenance strategies which will help to provide safe, efficient working and living environment.

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