



International Journal of Management & Entrepreneurship Research  
P-ISSN: 2664-3588, E-ISSN:2664-3596  
Volume 2, Issue 3, P.No. 109-138, June, 2020  
Fair East Publishers  
Journal Homepage: [www.fepbl.com/index.php/ijmer](http://www.fepbl.com/index.php/ijmer)



## STAKEHOLDERS RESPONSIBILITIES IN PUBLIC SHS BUILDINGS MAINTENANCE PRACTICES IN THE WA MUNICIPALITY

Justice Agyei Ampofo<sup>1,2</sup>, Dr. Théophile Bindeouè Nassè<sup>1,3</sup>, Dr. Samuel Twumasi Amoah<sup>1</sup>, Prof. Kenneth Peprah<sup>1</sup>

<sup>1</sup>University for Development Studies, Tamale (Ghana)

<sup>2</sup>University of Education, Winneba (Ghana)

<sup>3</sup>Ouaga 2 University (Burkina Faso).

\*Corresponding Author: Justice Agyei Ampofo

<sup>1</sup>Corresponding Author Email: [papajusty@gmail.com](mailto:papajusty@gmail.com)

Article Received: 10-05-20

Accepted: 27-06-20

Published: 05-07-20

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### ABSTRACT

Public senior high school buildings in Ghana represent significant investment of the tax payers' money and therefore maintaining these buildings is important. However, there seems to be paucity of studies on stakeholders' responsibilities in public senior high schools' buildings maintenance practices in general and Wa Municipality in particular. This research seeks to bridge this knowledge gap by evaluating stakeholders' responsibilities in public senior high schools' buildings maintenance practices in the Wa Municipality of the Upper West Region of Ghana. Study methods include the use of questionnaire, interview guides, focus group discussion guide and observation checklist for data analysis. A total of 393 respondents (197 students, 140 teachers and 56 school management) who took part in this study were purposively selected. The study found out that the major stakeholders involved in the maintenance and repairs of the public senior school buildings in the Wa Municipality have not perform their roles creditably. The implication is that maintenance activities at the public senior high schools have not been efficient and effective as stakeholders failed to achieve maintenance aims. The study recommends that, there is the need for all stakeholders in the Wa Municipality such as the governments, professionals which include contractors, engineers, architects, facility managers, etc. others include the teaching and non-teaching staff, PTA, students, GES, municipal department of maintenance, school management and Others like NGO's, Media and Olds

Students Association to be responsible in their roles and functions on maintenance of public buildings so as to protect government buildings as well as ensuring resource management.

**Keywords:** Stakeholders, Public Buildings, Maintenance, Building Maintenance, Wa Municipal

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## INTRODUCTION

Building maintenance is a phenomenon that transcends all disciplines over the world and its importance cannot be overemphasized (Cobbinah, 2010). It has become very critical in institution success such that its intervention is indispensable (Pintelon & Parodi-Herz, 2008). Aris (2006) emphasized that newly completed school buildings are often beautiful and functional as such it brings happiness to its users, however, behind the scenes are maintenance requirements (Cobbiah, 2010).

Most governments of different countries have set aside various forms of strategies such maintenance policy and standard practice to help maintain public school buildings (Obimpe, 2003). Specific examples are United State of America, Singapore, Greek, Egypt, Italy, Istanbul, Germany, England, Scotland, Ireland, Hong Kong, Canada, Australia etc. In Ghana the implementation of the Ghana Education Trust Fund (GET Fund) is to provide funds for maintenance of school buildings and raise new buildings for schools.

Historical evidence shows that, prior to the industrial revolution of the 1750s, maintenance of school buildings was an issue of concern (Buys, 2013). Maintenance of school buildings of the developed world has been rapidly changing throughout the years. This is due to several factors such as the enhancement of sophisticated technology, good maintenance practices, sustainable resource management practices, globalization and change of economy (Afrane, 1999; Jolaoso, 2012; Buys, 2013; Allotey, 2014). According to Cobbinah (2010) the percentage of the gross value of school buildings maintenance works has increased steadily from 20% in 2000 to 28% in 2004 in Hong Kong. The data further showed that between 1997 and 2017, the value of maintenance works and repair increased from 22.5% to 51.6% in the 20 year period.

According to the International Bank for Reconstruction and Development and the World Bank report (2010) on Africa's infrastructure investment, the cost of addressing Africa's public school buildings needs is around \$93 billion a year. The report stated that about one-third of this amount, approximately \$31 billion, is required for maintenance of the buildings. However, the report further stated that, in Sub-Saharan Africa, public school buildings financing needs are estimated to be \$39 billion per year, of which \$17 billion is required for maintenance annually. Ghana, a Sub-Saharan African country is equally saddled with huge expenditures for public school buildings development, operation and maintenance. For instance, in 2010, the Government of Ghana (GoG) through the Ghana Education Trust Fund (GET Fund) expended GHC296.42 million on public senior high school buildings maintenance (Monetary Policy Report of Bank of Ghana, 2011).

Prior to the twentieth century maintenance of government buildings was considered a necessary evil. Technology was not in an advanced development, there was no alternative for avoiding failure. With the advent of technological changes and after the Second World War, maintenance of government buildings came to be considered as an important function by stakeholders. This is why Iyagba (2005) asserted that public school buildings maintenance remains a key issue of concern to all stakeholders.

A number of people see government senior high school buildings maintenance as an avoidable task, fragmented and uncoordinated which contributes little to the built environment (Wood, 2005). Maintenance of public senior high school buildings ensure sustainable management of state property which brings about improve utilization of buildings (Wood, 2005). Hence, the safety of occupants who live in a regularly maintained building can always be assured. According to Soleimanzadeh (2013), when school buildings are neglected, defects occur and they result in extensive and avoidable damage to the building fabric.

The living conditions in schools for both teachers and learners is challenging in the West African context (Nasse, 2013). Some government senior high schools' buildings in Ghana have not seen any significant maintenance since they were constructed, some dating back from the colonial era (Wood, 2005; Adesoji, 2011). This has resulted in damages and deterioration to some government senior high school buildings in the country. It is with this concern that the research was conducted to evaluate stakeholders' responsibilities in public senior high schools' buildings maintenance practices in the Wa Municipality of the Upper West Region of Ghana.

## **REVIEW OF RELATED LITERATURE**

### **Theoretical Review**

The study employs Public Building/Public House Maintenance Theory propounded by Syagga and Aligula in 1995. This theory is also known as concept of duty of care in maintenance of government buildings. The theory compares government school buildings maintenance with care and treatment of a patient in hospital. Syagga and Aligula (1995) state that the treatment a patient receives depends on some predetermined criteria and a diagnosis of the patient's health condition based on predetermined criteria. The required care embraces three principles which include light care which requires treatment of minor injuries and administration of drugs at intervals; intermediate care which require care associated with pre or post-operative situations of less serious nature and intensive care which includes continuous and detailed monitoring and treatment of a patient's condition. Action taken by the medical personnel therefore would be dictated by the above principles depending on intended level of care as well as the existing circumstances within their area of responsibility, and would also determine resources required (Syagga & Aligula, 1995)

Likewise, the concept of duty of care means that stakeholders responsible for maintaining public senior high school buildings have to determine in advance the level of maintenance that they would wish to achieve so that the buildings can continue to fulfill their role and subsequently allocate the required resources. It also entails a plan to deliberately deal with specific needs of a given building throughout its economic life while relating the level of care with the possible conditions or current state of the buildings through a programmed maintenance system. Concept of duty care with respect to maintenance of government senior high school buildings would lead to formulation of policies and setting up structures to channel adequate resources to meet the level of care intended.

Maintenance of government senior high school buildings just like duty of care of patients are in three levels namely basic level care, secondary level care and intensive level care similar to light care, intermediate care and intensive care in duty of care of patients respectively. Findings from literature confirmed that concept of duty of care in maintenance of government senior high school buildings is lacking and this justify the need for this study.

### Conceptual Framework for Maintenance of Building

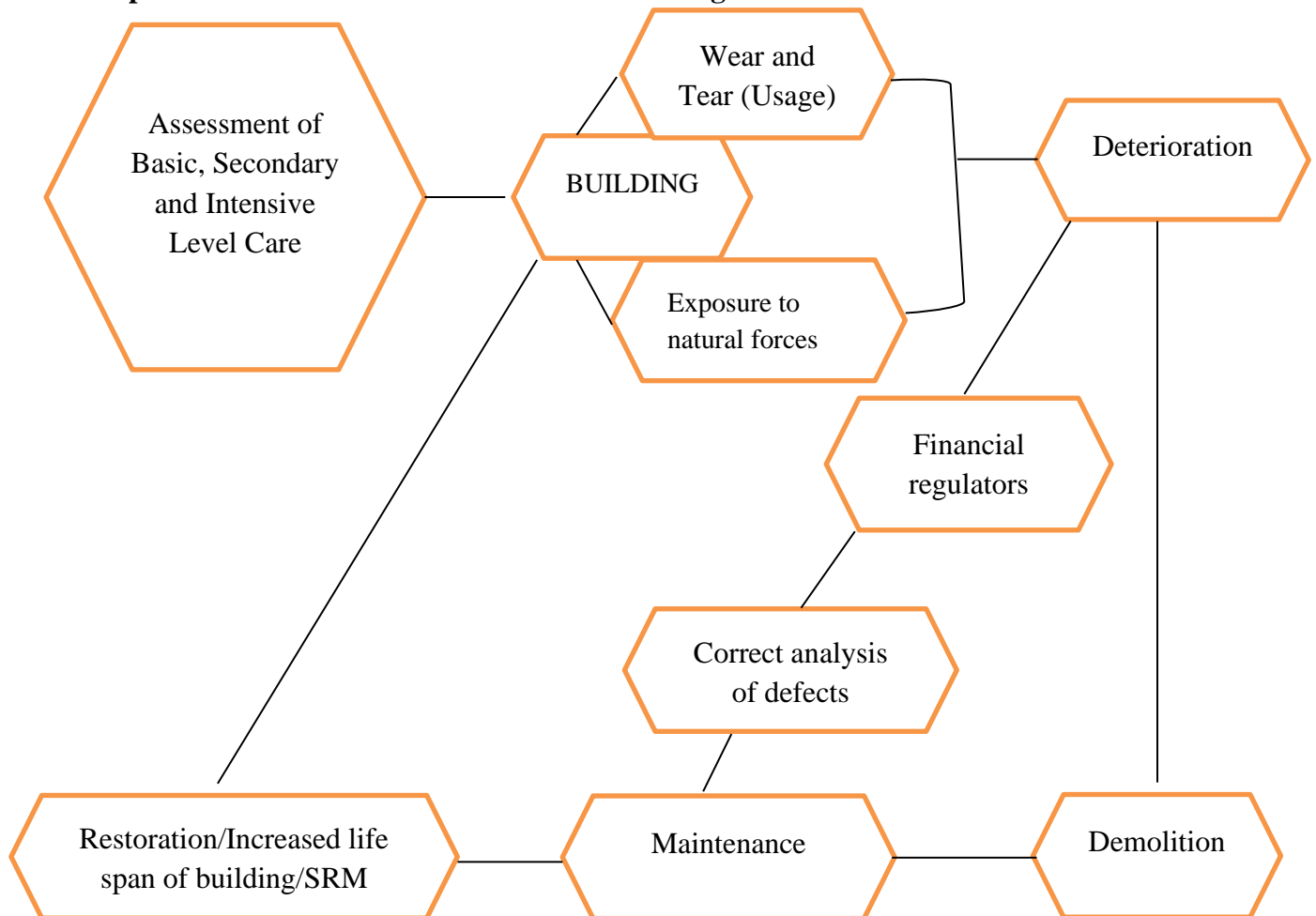


Figure 1: Conceptual Framework  
Source: Adapted from (Cobbinah, 2010)

Assessment of maintenance of government buildings in senior high schools requires a holistic approach which can be achieved if all aspects of building maintenance are considered and all key stakeholders responsible also get actively involved. The conceptual frame work in Figure 1 suggests that the maintenance of government senior high school buildings begins with the assessment of the building's condition (light care, intermediate care and intensive care) by stakeholders responsible for the building's maintenance. The conceptual framework explains that the neglect of maintenance of school buildings leads to deterioration of the fabric and finishes of the building's components (Wood, 2005: Mydin, 2014: Allotey, 2014).

School building maintenance depends on the materials used in the construction of the building and the type of building. The usage of a building resulting in wear and tear and exposure to natural forces all cause deterioration of building (Aris, 2006: Cobbinah, 2010). This deterioration can however be avoided or rectified through maintenance of the building. Maintenance can make the necessary impact only if the financial regulator of the building through correct analysis of defects ensures that funds are made available for such a purpose. Failure to undertake maintenance on a school building will ultimately result in reducing the life

span of the building and consequently result in demolition. Maintenance of the building will however ensure that the building is restored to its initial status and also increase the life span of the building thereby ensuring sustainable buildings and as well as resource management.

### **The Concept of Building Maintenance**

As the name implies, building maintenance is a branch of maintenance which deals with buildings, their surroundings and contents. Olanrewaju (2009) summarized building maintenance as processes, services, preservation, repair and care for buildings, after commissioning, renovation, refurbishment, and conversion to improve the life-span without drastically upsetting its basic features and use.

Public senior high school buildings in Ghana not until recently, receives no or little maintenance in organisations and institutions globally. However, it started receiving attention when government began to intervene and insisted on the need to introduce maintenance management practices in the various institutions as a new culture for the nation. This led to the introduction of School Management Committee which plays an oversight role of school building maintenance. Findings have shown that there is little or no maintenance on government buildings in senior high schools in Ghana (Cobbinah, 2010; Mydin, 2014) and this has become a matter of concern for all stakeholders to be worried of hence the need to evaluate stakeholders responsibilities in public senior high school's maintenance practices in the Wa Municipality of the Upper West Region of Ghana.

### **Aims and Objectives of SHS/SHTS Buildings Maintenance**

The function of maintenance is to maximize the aesthetic and economic values of buildings and other infrastructure, as well as increase the health and safety of the occupants. According to Aris (2006), some of the specific objectives of senior high school buildings maintenance include, to: perform daily housekeeping and cleaning; develop and execute a system of regularly scheduled maintenance actions; undertake major repairs based on lowest life-cycle cost; complete improvement projects; provide for easy and complete reporting of maintenance work; monitor the progress of maintenance works; estimate and track costs accurately; schedule all planned work in advance; allocate and anticipate staff; and continually seek workable solutions to maintenance problems. These objectives however, encapsulate maintenance in its totality, combining technical and administrative actions. This brings to bare, the management aspect of maintenance of public senior high school buildings in Ghana including those in the Wa Municipality of the Upper West Region of Ghana.

The primary aim of maintaining government buildings in senior high school is to ensure that the building continue to serve the purpose for which it was put up (Agyefi-Mensah et al., 2012).

The purposes for which senior high school buildings maintenance are undertaken include:

- a. To maintain the value of the buildings: A better maintained school buildings normally has greater value (Afranie & Osei-Tutu, 1999; Allotey, 2014).
- b. To ensure optimum use the buildings: Good maintenance should allow senior high school buildings to be used to their full potential.
- c. To create or maintain suitable appearance of the buildings: This can make a positive contribution to the built environment and social conditions. Dilapidated school buildings can contribute to social deprivation and badly maintained services and facilities, waste energy and resources and can affect the environment (Mydin, 2014).

- d. To maximize the life of main components and materials of the buildings by extending periods between repairs and replacements;
- e. To ensure that the buildings do not detract from surroundings and also maintain a suitable appearance (Cobbinah, 2010).

Considering maintenance needs, Zulkarnain et al. (2011) emphasised that the prime aim of school buildings maintenance is to preserve the building in its initial stage, as far as practicable, so that it effectively serves its purpose. The author further added that the main purposes of maintaining government school buildings (including senior high school buildings) are:

- Retaining value of government investment in education.
- Maintaining the building in a condition in which it continues to fulfill its function.
- Presenting a good appearance.

There is a growing awareness worldwide on the importance of the maintenance of public senior high school buildings (Aris, 2006). Regular maintenance retains the value of investment and assists in retaining the economic life of the school buildings. According to Cobbinah (2010), maintaining economic assets such as senior high school buildings ensures that they appreciate in value and result in a return, either socially or economically. Aris (2006) also observed that, maintenance is a productive activity at both private and national levels. The author further explained that, at the private level, proper maintenance leads to lower depreciation costs and consequently, higher profitability. While at the national level, proper maintenance leads to lower expenditures on replacement. Thus, allowing more expenditure on expansion into new productive investment.

Frequent maintenance of senior high school buildings brings such benefits as comfort and satisfaction to its users (Allotey, 2014). Maintaining government buildings in senior high schools especially those in the Wa Municipal of the Upper West Region of Ghana ensure that investments made by the government in the educational sector do not only yield the highest possible returns over the life of the buildings but also fulfill the ultimate responsibility of providing the needed human satisfaction and comfort and protecting state property. Akasah et al. (2010) emphasized that, maintaining public senior high school buildings simply means protecting national asset. This goes to explain further the importance of maintenance of public senior high schools' buildings in Ghana especially those in the Wa Municipality of the Upper West Region of Ghana.

Finally, buildings in general expresses physically, the complex social and economic factors which give structure and life to the school community (Cobbinah, 2010). Conditions and quality of public senior high school buildings are a measure of public pride, prosperity, priorities, social values and virtues. These combine with other variables to give image and meaning to the country's unique characteristics. However, Njuangang and Liyanage (2012) shared the view that, despite the significance of maintenance of senior high school buildings, it appears maintenance often takes low priority among stakeholders responsible for public senior high school buildings in some developing countries. Allotey (2014) asserted that public senior high school buildings maintenance is of great significance to the economy not only because of the scale of expenditure involved but also because it is important to ensure that the buildings is used as effectively as possible hence the need to assess the maintenance of government buildings in senior high schools in the Wa Municipality.

### **Stakeholder's Responsibilities in Public SHS Buildings Maintenance**

According to Nartey (2011), stakeholder's involvement in maintenance of public senior high school buildings is an issue of concern in Ghana. Few studies focus on the provision of tangible resources like money, labour or material in the implementation processes of maintenance of public buildings (Zakaria, 2011). Others focus on empowering stakeholders to exercise their role in the maintenance of public senior high school buildings (Sherwin, 2012). This therefore suggests that stakeholders (internal and external) are responsible for the maintenance of public senior high school buildings in Ghana.

It is mainly the responsibility of Government through the Ministry of Works and Housing as well as Ministry of Education to ensure that public senior high school buildings are maintained in Ghana. Cobbinah (2010) states that the primary aim of Ghana Government in the area of public SHS buildings is to maintain it in order to serve the purpose it was built. Determination of quality on public senior high school buildings has become a matter of serious concern to developing countries which are faced with challenges of building maintenance. Ghana's National Housing Policy (2010) emphasizes on sustained growth of its public-school buildings with its proper conservation, renovation and upgrading (Cobbinah 2010).

Allotey (2014) also asserted that in Ghana government through the Ministry of Works and Housing, Ministry of Education and Ghana Education Service are responsible for public senior high school buildings maintenance including those in the Wa Municipality of the Upper West Region of Ghana. Adesoji (2011) confirmed that public senior high school buildings conditions in Africa including those in Ghana are unsatisfactory. He attributed one of the major factors responsible for poor senior high school buildings conditions to the low level of commitment by government.

Oladapo (2006) establishes that students, teachers, school management and the public in a whole all have a very high stake in the maintenance of public senior high school buildings in determining the value and level of satisfaction they receive. In addition, the author notes that the primary initiators of maintenance action are the building users and together with other actors they influence the amount of maintenance work undertaken. This necessitates conservation and maintenance of the existing public senior high school buildings as part of the strategies in meeting the demand for school buildings for present and future generations. Zakaria and Wan Yusoff (2011) were of the opinion that one of the main requirements for ensuring the maintenance of public senior high school buildings is the responsibilities of teachers and school management to supervise students in routine cleaning of the school buildings thereby ensuring clean environment.

As a matter of fact, the main reason for initiating public senior high school buildings maintenance is the work of contractors (Arazi et al., 2009; Olanrewaju et al., 2011). Contractors carried out maintenance works to ensure that buildings support the needs of the users but most at times is not carried out properly by contractors but unprofessional people (Olanrewaju, 2009). This therefore means that contractors are to ensure that the right materials are used for construction of public senior high school buildings and also must do all the necessary maintenance works if only is part of their contract.

The study conducted by Cobbinah (2010) on public senior high school in Islamabad in Pakistan revealed that effective maintenance of public senior high school buildings is the prime responsibility of school management, teachers, students, government and other stakeholders.

The administrative responsibility for satisfactory physical environment is not limited to providing new facilities. The school heads should direct the available resources to the maintenance of the school buildings (Cobbinah, 2010). Existing buildings must be maintained and made functional by providing proper lighting, ventilation and temperature condition for their effective and efficient utilization to ensure good working condition (Olanrewaju, 2009). Efficient maintenance of public senior high school buildings is mandatory in order to make the school a pleasant, safe and comfortable for learning (Adeboyeje, 2000).

School management both teaching and non-teaching staff are the custodians of their school buildings. It is the responsibility of School Management Committee (SMC) to ensure that all components of their buildings are in a very good condition; that is to say they are well protected; and that they are used for the purpose(s) for which they were built. It is the duty of the school heads to motivate staff members as well as the students to imbibe and internalize maintenance culture with respect to the school buildings (Sherwin, 2012). The teachers are to assist the school management in the maintenance of the school buildings as this will create sustainable resource management. Teachers are to see that every item in their classrooms (the classroom building elements such as doors, windows, roofs, walls etc) are in good condition and to promptly report any dilapidation or deterioration to the school head for necessary maintenance action.

Nartey (2011) asserted that Parents Teachers Associations (PTA) and Non-Governmental Organizations (NGO's) are also responsible for public senior high school buildings maintenance. The authors further added that they must provide the needed resources, materials and at times labour needed for public senior high school buildings maintenance activities. Undoubtedly, the involvement of these stakeholders is crucial for the success of the maintenance of public senior high school buildings. From the literature reviewed, it is clear that public senior high school buildings are the primary concern by both internal and external stakeholders (Arazi et al., 2009). According to Arazi et al (2009) many stakeholders (internal and external) failed to actively involve themselves in maintenance of public senior high school buildings but little is known about stakeholder's responsibilities in public senior high school buildings in the Wa Municipality of the Upper West Region of Ghana. This is an issue of concern hence the relevance of this study to fill this gap.

## METHODOLOGY

### Research Design

The study used the mixed methods research design, employing both qualitative and quantitative research approaches. Creswell (2013) and Ampofo (2019) has made strong arguments for mixed methods research that offset the weaknesses of both quantitative and qualitative research as follows; that mixed methods research provides more comprehensive evidence for studying a research problem than either quantitative or qualitative research alone. The strategy permitted the usage of several approaches (Ampofo, 2019) and a triangulation of methods (Nasse, 2020; Ampofo, 2017) in addressing the research issues.

### Study Area

The location for this study is Wa Municipal Area with its capital as Wa, which is also the regional capital of the Upper West Region of Ghana. Wa lies between latitude 9° 50' N to 10° 10' N and longitude 2°17 W and 2° 37 W, thus covering an area of approximately 1,180 square kilometers which is about 32% and 2.5% of the region and nation respectively. The Municipality



is bounded to the north by Nadowli District, to the south by both Wa East and West Districts, to the East and West by Wa West and East Districts respectively. According to 2010 population census, Wa population was estimated to be 135,638 (female 65,887/Male 69,751) with a growth rate of 2.7% per annum (Wa Municipal Assembly, 2017). The spatial distribution of the population displays a typical character of a young municipality, a heavy concentration of the population in Wa town surrounded by smaller towns and rural settlements.

Using the 2010 Population and Housing Census figures, Wa's population is 50 times higher than the next populous settlements (Busa, Sagu, Charia, Kperisi and Boli) each with a population below 3,000 people. The significance of this type of distribution is that Wa town provides the highest level services (first level services and functions) in health, education, finance, administration of justice and security, commerce and transportation amongst others to its hinterland and patent services for resource mobilization, peace building and community needs identification (Wa Municipal Assembly, 2017).

One of the most common challenges to be addressed in Wa Municipality is the issue of stakeholder's responsibilities in public senior high schools buildings maintenance practices. The study was conducted in all the eight public senior high schools in the Wa Municipality of the Upper West Region. Geographic Information System was used to collect the coordinates of the schools and this is geographically shown in Figure 2.

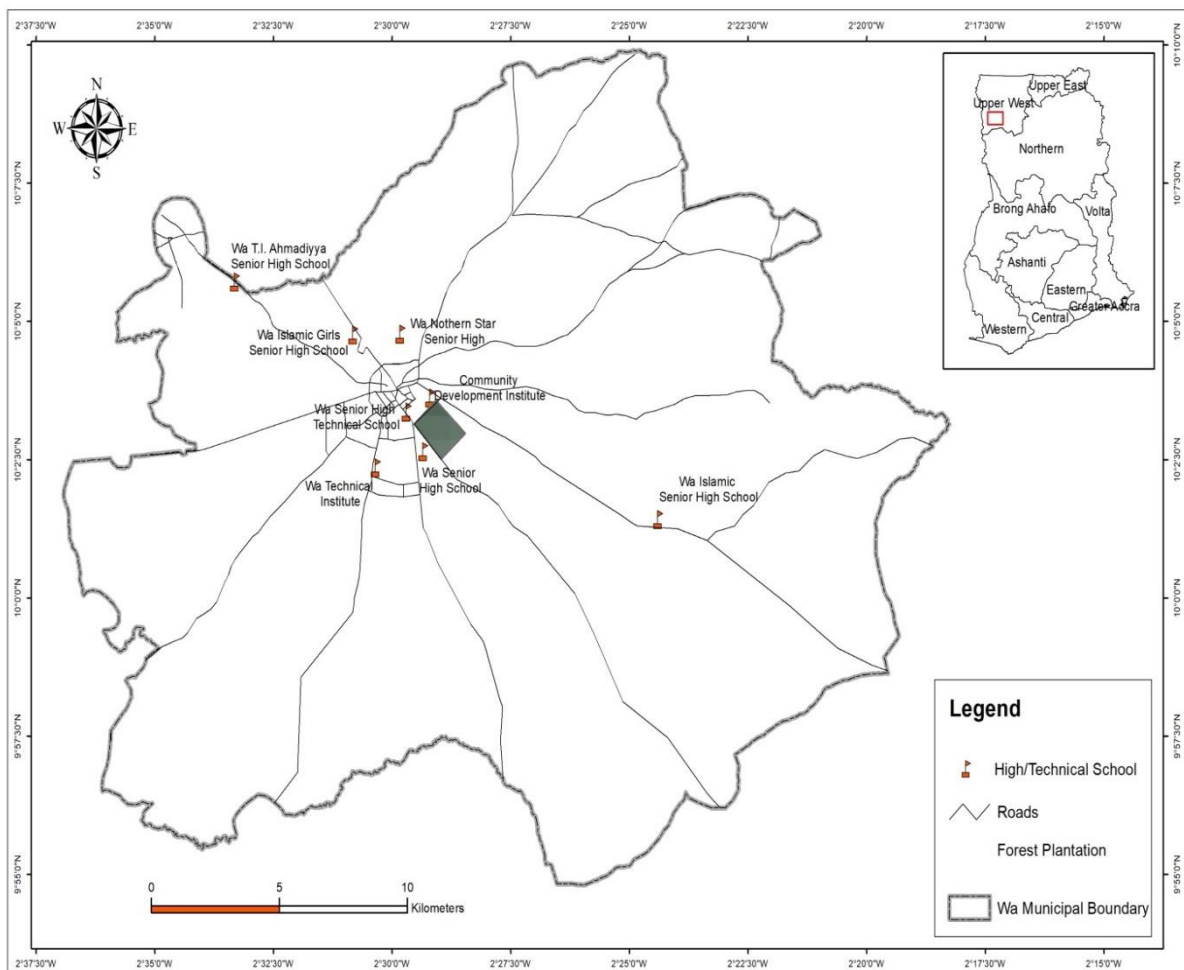


Figure 2: Map of Public Senior High/Technical schools in Wa Municipality  
Source: Field Survey (2017)

## **Research Design**

A cross sectional survey was used as a design for the study. Cross-sectional research involves using different groups of people who differ in the variable of interest but share other similar characteristics, such as socioeconomic status, educational background, and ethnicity (Creswell, 2013; Ampofo, 2017). The study used mixed method approach. Both quantitative and qualitative data collection methods were used.

Quantitative data were collected using questionnaires showing stakeholder's responsibilities in public senior high school buildings maintenance practices.

Qualitative data were captured using observation checklist, focused group discussion and Key Informants Interview (KII) guides with key stakeholders at the Wa Municipal Education Service, the school levels and the Wa Municipal Assembly department in charge of maintenance of government buildings and PTA Chairman of the schools. Specific key stakeholders were asked questions that are relevant to this study. All the eight (8) public senior high schools in the Wa Municipality were visited and the maintenance e of their buildings status were assessed. The eight (8) schools are:

- Wa Senior High Technical School
- Wa Senior High School
- Wa T.I. Ahmadiya Senior High School
- Wa Islamic Senior High School
- Wa Islamic Girls Senior High School
- Wa Northern Star Senior High School
- Wa Technical Institute
- Wa Community Development Institute

## **Population and sampling frame**

The target population for this study was all forms two and three students, teachers and school management/staff in all the eight (8) public senior high schools in the Wa Municipality. The field data collection began on 5<sup>th</sup> November, 2017 and ended on 5<sup>th</sup> December, 2017. The eight (8) government senior high schools in the Wa Municipality have a teacher population of 455 teachers with 95 representing females and 360 representing males. All the eight government senior high schools have a school management population of 77 with 40 representing females and 37 representing males and a student population of 6140, with 3440 students representing SHS 2, and 2700 students representing the SHS 3. The teachers, school management and students were selected because they are likely to have an idea about the maintenance of government buildings in senior high schools in the Wa Municipality since they are the users of the school buildings. Table 1, 2 and 3 shows the population distribution for this study.

Table 1 shows student population distribution for the eight schools.

Table 1  
*Target Student Population Distribution for 2017*

SENIOR HIGH SCHOOL	STUDENTS POULATION		
	FORM 2	FORM 3	TOTAL
1. Wa Senior High Technical School	600	540	1140
2. Wa Senior High School	560	480	1040
3. Wa T.I. Ahmadiya Senior High School	500	420	920
4. Wa Islamic Senior High School	520	310	830
5. Wa Islamic Girls Senior High School	426	62	488
6. Wa Northern Star Senior High School	60	48	108
7. Wa Technical Institute	520	560	1080
8. Wa Community Development Institute	254	280	534
<b>TOTAL</b>	<b>3440</b>	<b>2700</b>	<b>6140</b>

Source: Field Survey (2017)

Table 2 shows teacher population distribution for the eight schools.

Table 2  
*Teacher Population Distribution for the Eight Schools in 2017*

SENIOR HIGH SCHOOL	TEACHERS POPULATION		
	FEMALE	MALE	TOTAL
1. Wa Senior High Technical School	14	76	90
2. Wa Senior High School	16	70	86
3. Wa T.I. Ahmadiya Senior High School	10	55	65
4. Wa Islamic Girls Senior High School	8	21	29
5. Wa Islamic Senior High School	15	35	50
6. Wa Northern Star Senior High School	7	13	20
7. Wa Technical Institute	20	75	95
8. Wa Community Development Institute	5	15	20
<b>TOTAL</b>	<b>95</b>	<b>360</b>	<b>455</b>

Source: Field Survey (2017)

Table 3 shows the distribution of school management/staff population for the eight schools.

Table 3

*Distribution of Population of the Eight Schools' Management for 2017*

SENIOR HIGH SCHOOL	SCHOOL MANAGEMENT POPULATION		
	FEMALE	MALE	TOTAL
1. Wa Senior High Technical School	7	6	13
2. Wa Senior High School	5	6	11
3. Wa T.I. Ahmadiya Senior High School	4	5	9
4. Wa Islamic Girls Senior High School	4	3	7
5. Wa Islamic Senior High School	5	5	10
6. Wa Northern Star Senior High School	3	3	6
7. Wa Technical Institute	9	5	14
8. Wa Community Development Institute	3	4	7
<b>TOTAL</b>	<b>40</b>	<b>37</b>	<b>77</b>

Source: Field Survey (2017)

**Sample Size and Selection of Participants**

All the eight (8) government senior high schools in the Wa Municipality of the Upper West Region of Ghana were used for the study. Table 4 shows the sample size for the three categories of respondents used for the study. From table 4, the total sample frame of students was 6140, total sample frame of teachers were 455 and total sample frame of school management were 77. An error margin of 7% was used to calculate the sample size for students, teachers and school management/staff using Miller and Brewer (2003) formula. The 7% error margin was chosen for convenience which means that 93% of the information gathered from the respondents is accurate.

Miller and Brewer (2003) formula shown below:

$$n = \frac{N}{1 + N (\alpha)^2}$$

Where: n= required sample size, 1= constant, N= sample frame,  $\alpha$ = level of significance or margin of error.

Table 4

*Sample size for the three categories of respondents based on Miller and Brewer (2003) formula*

<b>Sample size determination for students</b>	
SAMPLE SIZE (n)	?
TOTAL POPULATION	6140
CONSTANT(1)	1
ERROR TERM(e)%	7%
Exponent	2
(N(e) <sup>2</sup> )	30.086
1 +(N(e) <sup>2</sup> )	31.086
$n = N/(1+N(e)^2)$	197
<b>Sample size determination for teachers</b>	
SAMPLE SIZE (n)	?
TOTAL POPULATION	455
CONSTANT(1)	1
ERROR TERM(e)%	7%
Exponent	2
(N(e) <sup>2</sup> )	2.2295
1 +(N(e) <sup>2</sup> )	3.2295
$n = N/(1+N(e)^2)$	140
<b>Sample size determination for school management</b>	
SAMPLE SIZE (n)	?
TOTAL POPULATION	77
CONSTANT(1)	1
ERROR TERM(e)%	7%
Exponent	2
(N(e) <sup>2</sup> )	0.3773
1 +(N(e) <sup>2</sup> )	1.3773
$n = N/(1+N(e)^2)$	56
<b>Total Sample Size for students, teachers and school management</b>	<b>393</b>

Source: Field Survey (2017)

The representative sample selected was then proportionally distributed for all the eight public senior high schools used for the study based on the population of each school. This ensures that equal representation of the respondents of each school to take part in the study and this is shown in Table 5, Table 6 and Table 7.

Table 5 shows the proportional distribution of students sample size.

Table 5

*Proportional distribution of student's sample size*

SENIOR HIGH SCHOOL IN WA MUNICIPAL	STUDENTS POULATION			SAMPLE SIZE		
	FORM 2	FORM 3	TOTAL	FORM 2	FORM 3	TOTAL
1. Wa Senior High Technical School	600	540	1140	19	17	36
2. Wa Senior High School	560	480	1040	18	15	33
3. Wa T.I. Ahmadiya Senior High School	500	420	920	16	14	30
4. Wa Islamic Senior High School	520	310	830	17	10	27
5. Wa Islamic Girls Senior High School	426	62	488	13	2	15
6. Wa Northern Star Senior High School	60	48	108	2	2	4
7. Wa Technical Institute	520	560	1080	17	18	35
8. Wa Community Development Institute	254	280	534	8	9	17
<b>TOTAL</b>	<b>3440</b>	<b>2700</b>	<b>6140</b>	<b>110</b>	<b>87</b>	<b>197</b>

Source: Field Survey (2017)

Table 6 shows the proportional distribution of teachers sample size.

Table 6

*Proportional distribution of teachers' sample size*

SENIOR HIGH SCHOOL	TEACHERS POPULATION			SAMPLE SIZE		
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL
1. Wa Senior High Technical School	14	76	90	4	23	27
2. Wa Senior High School	16	70	86	5	22	27
3. Wa T.I. Ahmadiya Senior High School	10	55	65	3	17	20

4. Wa Islamic Girls Senior High School	8	21	29	2	6	8
5. Wa Islamic Senior High School	15	35	50	5	11	16
6. Wa Northern Star Senior High School	7	13	20	2	4	6
7. Wa Technical Institute	20	75	95	6	23	29
8. Wa Community Development Institute	5	15	20	2	5	7
<b>TOTAL</b>	<b>95</b>	<b>360</b>	<b>455</b>	<b>29</b>	<b>111</b>	<b>140</b>

Source: Field Survey (2017)

Table 7 shows the proportional distribution sample size of school management/staff.

Table 7

*Proportional distribution of school management/staff's sample size*

SENIOR HIGH SCHOOL	SCHOOL MMANAGEMNT POPULATION			SAMPLE SIZE		
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL
1. Wa Senior High Technical School	7	6	13	5	4	9
2. Wa Senior High School	5	6	11	4	4	8
3. Wa T.I. Ahmadiya Senior High School	4	5	9	3	4	7
4. Wa Islamic Girls Senior High School	4	3	7	3	2	5
5. Wa Islamic Senior High School	5	5	10	4	4	8
6. Wa Northern Star Senior High School	3	3	6	2	2	4
7. Wa Technical Institute	9	5	14	6	4	10
8. Wa Community Development Institute	3	4	7	2	3	5
<b>TOTAL</b>	<b>40</b>	<b>37</b>	<b>77</b>	<b>29</b>	<b>27</b>	<b>56</b>

Source: Field Survey (2017)

A total of 393 respondents (thus 197 students, 140 teachers and 56 school management/staff) took part in this study. Their selection was influenced by the main objective of the study and also on the aspect of trying to get variations in experiences as far as possible.

According to the theoretical and conceptual framework presented, it was evident that assessment of government senior high school buildings condition is the responsibilities of stakeholders such as government, Ministry of Education, Ghana Education Service, District/Municipal/Metropolitan Assembly, School Management, teachers, non-teaching staff, PTA, Students, and Professionals like contractors, facility managers and architects. The first group of participants involved in the study are students, teachers and school management. These are the people who are using the school buildings every day and whose responsibilities are the maintenance of the school buildings, this include both the students, teachers and school management/staff. The second category of respondents to participate in the study significantly included two (2) public servants and these are the Wa Regional Director of Education and the Wa Municipal Department of Maintenance Officer. The third category of respondents were Parents Teachers Association (PTA) chairman of each senior high school and the Chairman of each School Management Committee (SMC) who have interest in what goes on in the school buildings maintenance. The fourth and the last group was the Students Representative Council (SRC) and non-teaching staff (example carpenters, masons etc) that support the maintenance of government buildings in senior high schools. For confidential reasons, the names of these respondents will not be disclosed in the study.

#### **Sources of Data Collection**

The research outsourced information from both secondary and primary data. Secondary data on stakeholder's responsibilities in maintenance of public school buildings were obtained from literature: Afrane (1999); Afare (2003); Obimpe (2003); Barimah (2005); Kyeremateng (2008); Cobbinah (2010); Nartey (2011); Buys (2013) and Allotey (2014). Also condition based assessment of public school buildings data were collected from the Wa Municipal Department of Maintenance of Government Buildings. Information on past decade maintenance works activities carried on public senior high school buildings in Wa Municipality was also obtained from the Wa Municipal Department of Maintenance and Wa Municipal Education Office. The primary data were the information taken solely from the field as first hand data and these were collected from the targeted respondents of the study namely; students, teachers and school management as well as key informant interviews and observation checklist collected from the field.

#### **Methods of Data Collection**

Data for this study were collected using the mixed method approach and it includes surveys, interviews, observations and focus group discussions. The mixed method design was used for the study. In this case, the observed data supports the survey and interview data. Also the mixed method approach was used in order to assess respondent's experiences on stakeholders responsibilities on public senior high schools buildings maintenance practices.

Through interviews and focus group discussions the researcher was able to obtain the stakeholders awareness level, opinions, points of view, values, feelings, attitudes, perceptions and practices regarding stakeholder's responsibilities on public senior high schools buildings maintenance practices. Through observation, the researcher saw what some stakeholders actually did with regards to the maintenance of the school buildings hence enabling the



researcher to obtain a deep understanding of stakeholder's responsibilities in public senior high school buildings maintenance practices. This help the researcher to compare what some stakeholders say about their responsibility in the maintenance of public senior high school buildings.

### Data Analysis and Presentation

**Quantitative Data:** After collection, survey data were edited and coded. This is where data were examined for errors and omissions and corrected where necessary and possible. In the coding process, data were organised into categories after which, numerals were assigned to each item before entering them into the computer. After entering using SPSS version 20 programme, the computer was used to generate quantitative results including the percentages, frequencies and means (averages).

**Qualitative Data:** After data collection, data were coded and analysed. Editing involved examining data for errors and omissions after which, corrections were made accordingly. Coding involved organizing data into classes/categories in relation to the themes/objectives of the study. After this, interpretations were made before making conclusions.

## RESULTS AND DISCUSSION OF RESULTS

### Analysis of Demographics of Respondents

The initial aspect of the data analysis focuses on a summary statistic of the respondents. As explained earlier in the chapter three, the study captured the views of students, teachers and school management of the public senior high schools in the Wa Municipality concerning the maintenance of their school buildings. The descriptive analysis therefore implemented on the three classes of respondents. Tables 8 and 9 give a report of the summary statistics of the sampled respondents. It offers demographic information about the respondents' gender, their position, age, experience and highest level of education.

Table 8  
*Demographic Characteristics of Sampled Students*

	Details	Frequency	Percent
<b>Gender</b>	Male	107	54.3
	Female	90	45.7
	<b>Total</b>	<b>197</b>	<b>100</b>
<b>Age</b>	14-18	87	44.2
	19-23	100	50.8
	24-28	10	5.1
	<b>Total</b>	<b>197</b>	<b>100</b>
<b>Level of SHS</b>	SHS2	110	55.8
	SHS3	87	44.2
	<b>Total</b>	<b>197</b>	<b>100</b>

Source: Field Survey (2017)

Majority of the students who responded to the survey instrument were males (54.31%). It is also observed that most of the sampled students (50.76%) are between the ages of 19 - 23years. Meanwhile, the researcher mostly concentrated on students who were either in their second year (55.84%) or their third year (44.16%); as this group was assumed to possess enough information

concerning the current state of the school buildings and how their school buildings have been renovated or upgraded over the past years.

Aside the student population, the study also focused on sampling the responses of both teachers and school management. Majority of the teachers and school management/staff are males (79.29% for teachers; and 51.29% for management). It is also revealed that averagely most of the teachers and management staff are 30 years and above with a first-degree educational qualification. More than 90% of the teachers and management staff were also identified to have served their school for more than 5 years. While the majority of the teachers have never served under any maintenance department (88.57%), only 24 out of the total number of 56 management staff representing (42.86%) were reported not to serve in any of the maintenance department.

Table 9

*Demographic Characteristics of Sampled Teachers and Management*

	Details	Teachers		Management	
		Frequency	Percent	Frequency	Percent
Sex	Male	111	79.3	29	51.8
	Female	29	20.7	27	48.2
	<b>Total</b>	<b>140</b>	<b>100</b>	<b>56</b>	<b>100</b>
Age	24-29	20	14.3	0	0
	30-35	35	25	10	17.9
	36-40	50	35.7	15	26.8
	41-45	25	17.7	25	44.6
	46-50	10	7.1	6	10.7
	<b>Total</b>	<b>140</b>	<b>100</b>	<b>56</b>	<b>100</b>
Educational Level	Masters	25	17.9	8	14.3
	Professional	0	0	5	8.9
	First Degree	110	78.6	33	58.9
	HND	5	3.6	10	17.9
	<b>Total</b>	<b>140</b>	<b>100</b>	<b>56</b>	<b>100</b>
Experience	4yrs - 5yrs	5	3.6	2	3.6
	5+	135	96.4	54	96.4
	<b>Total</b>	<b>140</b>	<b>100</b>	<b>56</b>	<b>100</b>
Department Served	Maintenance	0	0	8	14.3
	Projects	0	0	8	14.3
	Facilities	8	5.7	8	14.3
	Premises and Property	8	5.7	8	14.3
	None	124	88.6	24	42.9
	<b>Total</b>	<b>140</b>	<b>100</b>	<b>56</b>	<b>100</b>

Source: Field Survey (2017)

**Building Types in Senior High Schools in Wa Municipality**

To evaluate stakeholder's responsibilities in the maintenance practices of the public senior high school buildings, it is necessary to examine the current state of buildings. Table 10 provides a census of the number and types of buildings at all the eight sampled public senior high schools within the Wa Municipality. The inventory of all the physical buildings in the schools was

important first step to estimate the maintenance obligation of the schools after ascertaining the current state of these buildings.

Table 10

*Inventory of School Buildings*

TARGET BUILDINGS	TYPES			
	Single Storey	Blocks of Flat	Total Number	Average Age of School
Classroom blocks	15	20	35	30
School library	1	6	7	20
School laboratory	-	4	4	25
Administration block	4	4	8	30
Staff/teachers bungalows	2	52	54	30
Dormitories	12	37	49	25

Source: Field Survey (2017)

### Key Stakeholders in Maintenance Activity and Practice

Given the context of the maintenance culture of the government schools, the study evaluates key stakeholders responsible for facilitating the maintenance activity at the public senior high schools' while identifying their respective roles and the degree to which they performed these roles. It was observed that the major stakeholders involved in the maintenance and repairs are the governments, professionals which include contractors, engineers, architects and facility managers. Others include the teaching and non-teaching staff, PTA, students, GES, Municipal department of maintenance, school management and the rest are NGO's, Media and Olds Students Association.

These actors are known to perform specific functions which when effectively coordinated leads to an effectively maintained maintenance culture. The study revealed that the stakeholders can be distinguished into two groups: external and internal. The external stakeholders are those who are not the direct beneficiaries of the project but have a special interest in the progress or success of the project thus offer support in terms of capacity building to school administrators to effectively implement the project and perform all necessary maintenance works. These include the government, municipal department of maintenance, Ghana education service and ancillary organizations or associations such as the old students' associations. The internal stakeholders are identified as the direct beneficiaries or users of the project; whose obligation is to ensure the longevity of the project and are tasked to maintain, report and own the project to ensure value for money. These include the school authorities – management, teaching and non-teaching staff, PTA and student body.

### The Key Roles of External and Internal Stakeholders

Table 11 shows the external stakeholders and their responsibilities on public senior high school buildings in Wa Municipal. Also, Table 12 shows the internal stakeholders and their responsibilities on public senior high school buildings in Wa Municipal.

Table 11

*The Key Roles of External stakeholders*

<b>Stakeholders</b>	<b>Responsibilities</b>	<b>Index</b>	<b>Ranking</b>
<b>Government</b>	Provision of funds needed for maintenance works	(.15)	1 <sup>st</sup>
	Provision of needed materials for maintenance works	(.10)	
	Provision of inspection through contract awareness	(.08)	
	Establish maintenance department in schools	(.03)	
<b>Professionals(contractors/engineers/architects/facility managers)</b>	To undertake maintenance work with due diligence and care	(.09)	4 <sup>th</sup>
	To ensure that quality materials are used in buildings	(.10)	
	Using appropriate equipment for work	(.10)	
	Awarded contract project by government	(.05)	
<b>Municipal Department of Maintenance</b>	To liaise with school administration to regularly undertake joint inspection and maintenance works	(.06)	5 <sup>th</sup>
	Support school management in maintaining school buildings	(.05)	
	Giving advice on the importance of maintenance of school buildings	(.02)	
<b>Ghana Education Service</b>	To draft a building performance contract with school management so that they will be conscious on how to use and maintain government buildings	(.03)	2 <sup>nd</sup>
	Inspection of buildings annually	(.08)	
	Educating the other stakeholders on the need to maintain school buildings	(.01)	
	Supervise school management team on maintenance works	(.10)	
<b>Others like NGO's, Media, Olds Students Association</b>	Providing funds to support maintenance works	(.06)	6 <sup>th</sup>
	Provide materials to support maintenance works	(.08)	
	Assist in reporting of building defects	(.05)	

Source: Field Survey (2017)

Table 12

*The Key Roles of Internal Stakeholders*

<b>Stakeholder</b>	<b>Responsibilities</b>	<b>Index</b>	<b>Ranking</b>
<b>Management of school</b>	Funds raising for maintenance works	(.10)	1 <sup>st</sup>
	Undertake minor and emergency maintenance works	(.15)	
	To provide materials for maintenance works	(.10)	
	To use maintenance funds judiciously	(.12)	
	To stop misappropriation of funds	(.12)	
<b>Teachers</b>	Taking proper care of the school buildings	(.15)	3 <sup>rd</sup>
	To sensitize students to protect and maintain the school building	(.08)	
	Imparting knowledge on the efficient and effective use of government buildings	(.03)	

	To use their bungalows in a tenantable manner as if they are their own buildings	(.12)	
	Monitoring building defects	(.05)	
	Report on building state for maintenance to be done	(.08)	
<b>Non-teaching staff</b>	To advise school management on building defects and make recommendations to school management about good maintenance policies and practices.	(.08)	7 <sup>th</sup>
	Monitoring building defects.	(.10)	
	Report on building state for maintenance to be done.	(.05)	
	Provide labour to assist in maintenance works.	(.07)	
<b>PTA</b>	To allocate some funds from their account to be used for maintaining the school buildings/Generating funds for maintenance works	(.12)	2 <sup>nd</sup>
	Providing personnel to assist in maintenance works	(.05)	
	Contribute to the provision of infrastructural development	(.15)	
	Inspection of school buildings during PTA meetings	(.12)	
<b>Students</b>	To keep up with good maintenance practices such as taking care of the buildings, sweeping and cleaning	(.15)	3 <sup>rd</sup>
	Monitoring building defects through class prefects and house prefects	(.05)	
	Report on building state for maintenance to be done	(.08)	

Source: Field Survey (2017)

The respondents widely identified the government and the school management as the primary stakeholders whose functions are influential in the maintenance of school buildings. Primary responsibilities of the government were noted to be the provision of funds and materials for maintenance works; whereas the school management was responsible for taking proper care of school buildings as well as undertaking minor and emergency maintenance works whiles using maintenance funds judiciously. Aside the government and school management, the parents and teachers association (PTA) and the Ghana Education Service (GES) were also noted to be key stakeholders whose functions are prime to the effectiveness of maintenance works and practices. The major functions of the PTA were noted as contributing to the provision of infrastructure development and inspection of school buildings. The GES on the other hand perform key roles such to supervision and inspection of buildings.

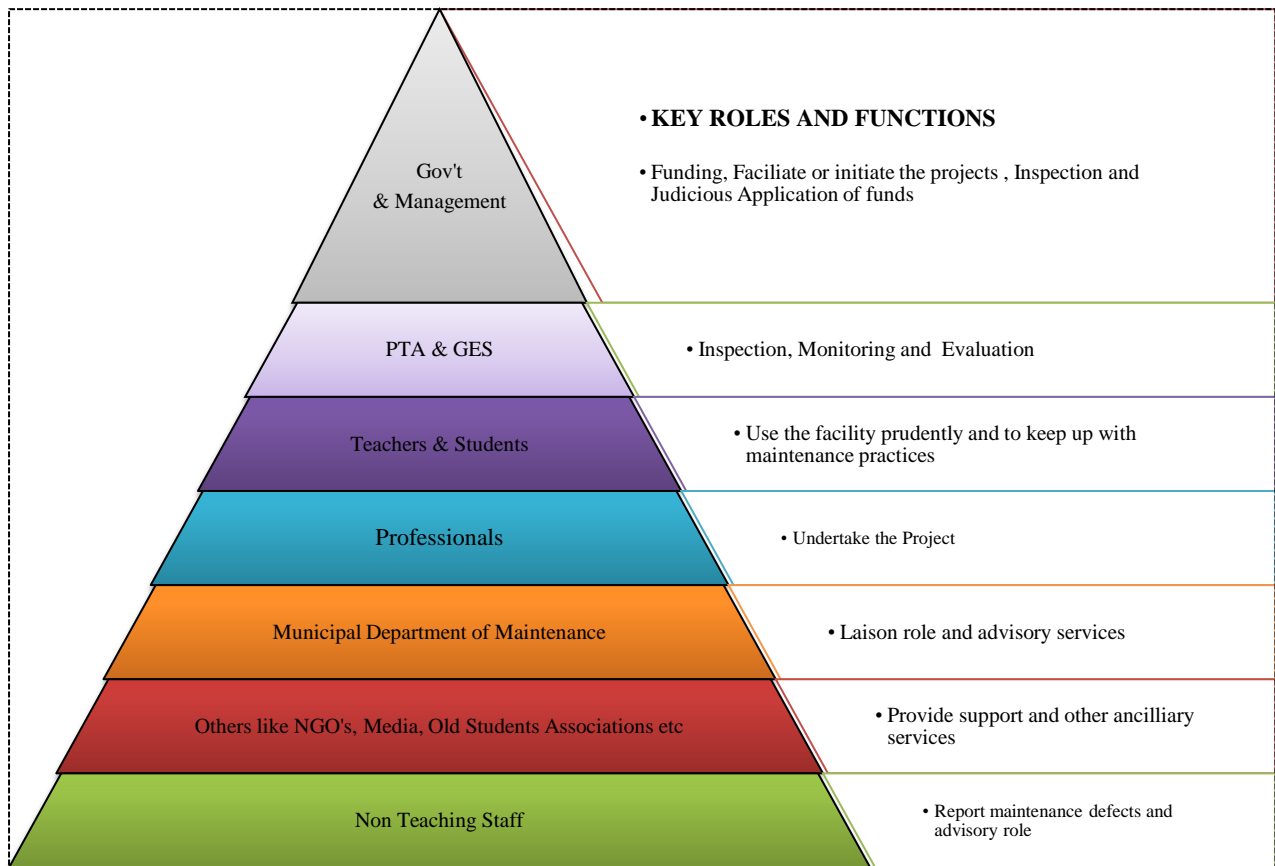


Figure 3: Ranking of Key Stakeholders and Description of Key Functions and Roles  
Source: Field Survey (2017)

### Description of Key Stakeholders Responsibilities and their Ranking

Figure 3 illustrates the pyramid of stakeholders and the perceived importance of their functions or contributions to ensuring successful maintenance works and practices within the public senior high schools in the Wa Municipality. Following the identification of the key roles and the major stakeholders in the implementation of the maintenance practices and activities of the government schools, the study attempted to investigate the task performance of the stakeholders. The respondents were therefore asked to evaluate the performance of each stakeholder.

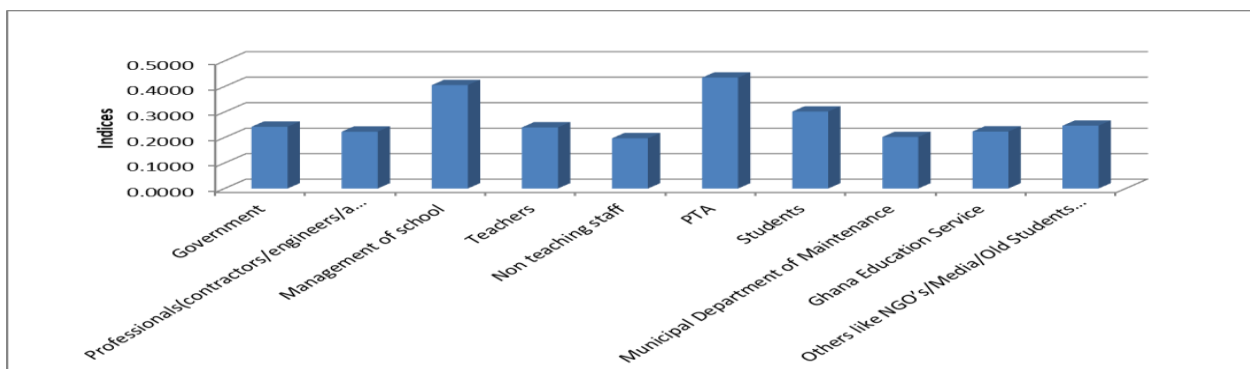


Figure 4: Task Performance Ratings of Stakeholders  
Source: Field Survey (2017)

From figure 4 the performance ratings of all the stakeholders were below 0.6 which significance average or moderate performance. The implication is that none of the stakeholders were identified to perform their roles creditably. Nonetheless, the respondents revealed that the school management and PTA conducted their responsibilities relatively better compared to the other stakeholders. The respondents moreover indicated that the maintenance of school buildings is not the responsibility of a specific institution or department but requires the collaborative efforts of several institutions and stakeholders who must perform their independent roles effectively. It was noted that the Government, Ministry of Education, Ghana Education Service, Municipal Assembly, School Management, Professionals Contractors, PTA, Non-Governmental Organization and Students are all responsible for the maintenance of the government school buildings. The policy development and major funding is made by the government through the Ministry of Education.

The ministry of education is then expected to liaise with the Ghana Education Service in consultation with the Municipal Assembly and the school management to design the modalities, project timelines and performance contract. Professionals are then contracted who are tasked to implement the project diligently using quality materials and appropriate technologies.

The school management provides direct supervision of the project and is also expected to provide all necessary assistance to the professionals for the effective implementation of the project. The school management then report on the progress to the GES and the Ministry of Education who are also expected to visit the project site intermittently to inspect the project; report on progress and request for onward financing from the government. After the implementation of the project, the facility is inaugurated and released to the school management for usage.

The students, teachers, school management and to some extent the PTA are to directly take responsibility of the facility and then ensure that the facility is used in a sound manner while ensuring that all maintenance practices and rules are adhered to. When there are defects, the school management is first expected to report it to the Ministry of Education through the GES. However, minor and emergency maintenance works can be initiated by the school management with the support of the PTA, the Old Students Associations and sometimes NGOs. The process can also commenced from bottom up; although the top to bottom process is what is most common. The bottom-up process is usually used when there are major maintenance works required. Most of the government funding for projects are sourced through the GETFund while the school management are also able to raise funds for projects or maintenance through the government, internally generated funds or support from the PTA, the Old Students Association and NGOs interested in the project. Figure 5 shows a schematic representation of stakeholders and information flow.

Qualitative Data gathered revealed that stakeholders are responsible for public senior high school buildings maintenance. There is therefore the urgent need for stakeholders to be responsible for buildings maintenance works in public senior high schools in the Wa Municipality.

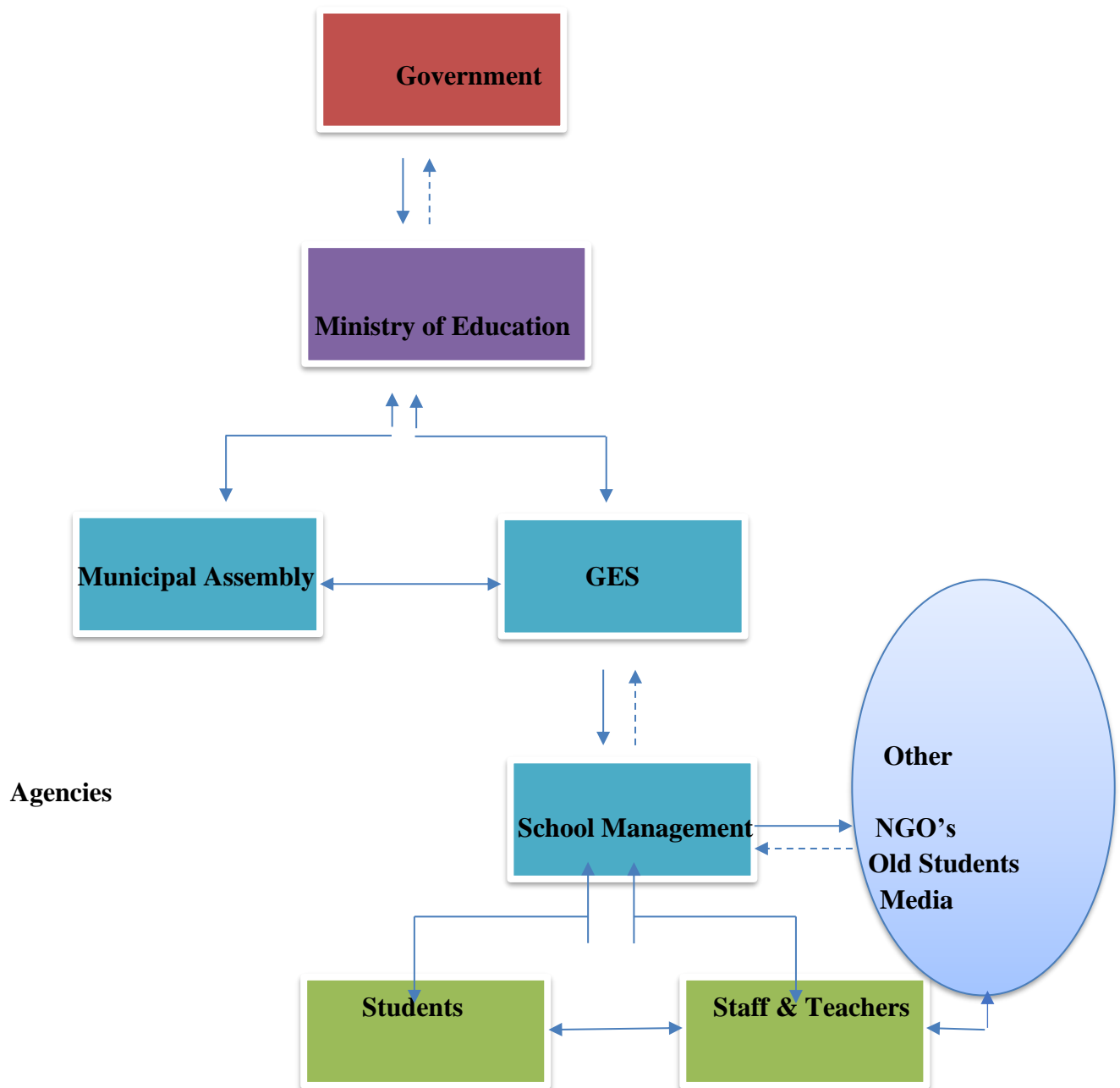


Figure 5: Maintenance Process and Information Flow  
 Source: Authors Construct (2017)

From the interview conducted and focused group discussion all the participants conferred that Government, Ministry of Education, Ghana Education Service, Municipal Assembly, School Management, Professionals Contractors are the major stakeholders in maintenance of public senior high school buildings in the Wa Municipality,

From the focused group discussion, all the participants expressed that:

*“Government, Ministry of Education, Ghana Education Service, Municipal Assembly, School Management and Professional Contractors, Architects and Facility Managers*



*are the external as well as major stakeholders responsible for public senior high school buildings maintenance practices”.*

Again, all the participants from the focused group discussion further expressed that;

*“PTA, Students, Teachers, Non-teaching staff and school management are the internal as well as minor stakeholders who are responsible for the maintenance of buildings in public senior high schools in the Wa Municipality”.*

In addition, all the key informants indicated that;

*“Government, Ministry of Education, Ghana Education Service, Municipal Assembly, School Management, Professional Contractors, Architects, Engineers and Facility Managers, PTA, Students, Teachers, NGO’s, Media, Old Students Association and benevolent personalities are all responsible for public senior high school buildings maintenance in the Wa Municipality”.*

### **DISCUSSION OF FINDINGS**

From the data analysis results it is observed that both external and internal stakeholders have responsibility in maintenance of public senior high school buildings. External stakeholders are found to perform major responsibilities. For example, government provide funds and materials needed for maintenance works as well as inspection of building contracts. GES draft a building performance contract with school management so that they will be conscious on how to use and maintain government buildings, inspect buildings, educate users on the need to maintain school buildings and supervise school management team on maintenance works. Again, Municipal Department of Maintenance liaise with school administration to regularly undertake joint inspection and maintenance works, support school management in maintaining school buildings and also gives advice on the importance of maintenance of school buildings. Professionals such as contractors, engineers, architects and facility managers, ensure that quality materials are used in buildings, use appropriate equipment for work and are awarded school buildings contract by government. NGO’s, Old’s Students Association provide funds to support maintenance works, provide materials to support maintenance works and assist in reporting of building defects.

Internal stakeholders are found to perform minor responsibilities. For example, school management raise funds for maintenance works, undertake minor and emergency maintenance works, provide materials for maintenance works, must take proper care of the school buildings, must use maintenance funds judiciously and stop misappropriation of funds. Teachers sensitize students to protect and maintain the school building, impart knowledge on the efficient and effective use of government buildings, use their bungalows in a tenable manner as if they are their own buildings, monitor school building defects and report on building state for maintenance to be done. Non-teaching staff advise school management on building defects and make recommendations to school management about good maintenance policies and practices, monitor building defects, report on building state for maintenance to be done and provide labour to assist in maintenance works. PTA allocate some funds from their account to be used for maintaining the school buildings/Generating funds for maintenance works, provide personnel to assist in maintenance works, contribute to the provision of infrastructural development and inspect school buildings during PTA meetings. Students keep up with good maintenance

practices such as taking care of the buildings, sweeping and cleaning, monitor building defects through class prefects and house prefects and report on building state for maintenance to be done.

Both the external and internal stakeholders' involvement in maintenance of public senior high school buildings is an issue of concern since the performance ratings of the stakeholders is below 50% as shown in figure 8. Some of the empirical literature support the findings of the third objective of this study while others also disagree with the findings. For example, the findings of the third objective of the study support the theoretical framework (Public House/Building Maintenance Theory). The theoretical framework stressed that stakeholders are to assess public SHS buildings conditions to identify any defects and also owe a duty of care to maintain the buildings. The theory further stressed that the duty of care that stakeholders owe in maintaining public school buildings is lacking. The findings of the third objective of this study revealed that the duty of care that stakeholders owe in maintaining public senior high school buildings in the Wa Municipality is also lacking hence the findings of the third objective of this support the theoretical framework.

The findings of this study also support the study by Zakaria (2011) who postulated that stakeholders (internal and external) are responsible for the maintenance of public senior high school buildings in Ghana but none of them perform their functions fully.

In addition, the findings of this study disagree with the study by Nartey (2011) who asserted that Government through the Ministry of Works and Housing as well as Ministry of Education always ensure that public senior high school buildings are maintained. Also, the findings of the of this study support the study by Guha (2006) who stated that the primary aim of government in the area of public senior high school buildings is to maintain it but government always fail in maintaining public school buildings.

The findings of this study also agree with a study by Adesoji (2011) who asserted that government in developing countries fails to provide the necessary funds to maintain public school buildings as well as collaborating with other stakeholders to develop appropriate buildings maintenance strategies for public buildings including senior high school buildings. The findings of this study also confirm to the study by Oladapo (2006) who posited that school management and Parents Teachers Association provide the needed finance to support school buildings maintenance works when the need arises.

A findings of this study disagree with the Zakaria and Wan Yusoff (2011) shows that one of the main requirements for ensuring maintenance of public senior high school buildings is the responsibility of GES and the Assembly, but the findings of this study shows that Wa Municipal Education Office and the Wa Municipal Assembly do not ensure regular maintenance of their public senior high school buildings. Also, the findings of this study agree with the study by Olanrewaju et al (2011) who asserted that professionals like contractors, architects, engineers and facility managers do not carried out maintenance works after to ensure that buildings support the needs of the users. The findings of this study show that contractors of public senior high school buildings in Wa Municipal do not carry out maintenance works after construction. Moreover, the findings of this study disagree with the study by Cobbinah (2011) who posited that effective maintenance of public senior high school buildings is the prime responsibility of teachers, students and government. The findings of this study show that government, teachers and students of public SHS's in Wa Municipal do not maintain their school buildings in a sound

manner. Thus government, teachers, students of public SHS's in Wa Municipal whose duty is to ensure maintenance of public senior high school buildings in the Wa Municipal have not been responsible. The findings of this study are consistent with the study by Arazi et al (2009) who postulated that many stakeholders (internal and external) failed to actively involve themselves in maintenance of public-school buildings in most developing countries including those in Wa Municipal.

### **SUMMARY OF MAJOR FINDINGS**

The objective of this study was to evaluate stakeholder's responsibilities in public SHS buildings maintenance practices in the Wa Municipality of the Upper West Region of Ghana. The research adopted a mixed study strategy focusing on a sample of 393 participants in eight government senior high schools in Wa Municipality. The use of questionnaires, interviews, and focus group discussions were employed to obtain the relevant information for this work.

According to the findings of this work, it was observed that the major stakeholders involved in the maintenance and repairs are the governments, professionals which include contractors, engineers, architects, facility managers, etc. others include the teaching and non-teaching staff, PTA, students, GES, municipal department of maintenance, school management and Others like NGO's, Media and Olds Students Association. These actors are acknowledged to perform specific major and minor functions.

Unfortunately, the results showed that none of the stakeholders perform their roles creditably. Nonetheless, the respondents revealed that the school management and PTA conducted their responsibilities relatively better compared to the other stakeholders. Moreover, the study identified the government and the school management as the principal stakeholders whose functions are most influential in the maintenance of school buildings. Principal responsibilities of the government were noted to be the provision of funds and materials for maintenance works; whereas the school management was responsible for taking proper care of school buildings as well as undertaking minor and emergency maintenance works whiles using maintenance funds judiciously.

### **CONCLUSION**

Based on the findings of this study, it can be concluded that stakeholders (both external and internal) have failed in the maintenance of public senior high school buildings in the Wa Municipality. The results show that all the stakeholders have not been able to fully perform their duties on the maintenance of the public senior high school buildings in the Wa Municipality to the satisfaction of respondents. The implication is that maintenance activities at the public senior high schools have not been efficient and effective as stakeholders failed to achieve maintenance aims.

### **Recommendations**

Based on the study results, the following recommendations have been made for the third research objective.

1. There is the need for all stakeholders in the Wa Municipality such as the governments, professionals which include contractors, engineers, architects, facility managers, etc. others include the teaching and non-teaching staff, PTA, students, GES, municipal department of maintenance, school management and Others like NGO's, Media and Olds Students Association to be responsible in their roles and functions on maintenance

of public buildings so as to protect government buildings as well as ensuring resource management.

2. Due to the failure of stakeholders in the maintenance of public senior high school buildings in the Wa Municipality, there should be an enactment of a maintenance framework on public senior high school buildings in the Wa Municipality which will spell out the roles and functions of each stakeholder (both external and internal) on maintenance of public senior high school buildings and this must be enforceable. This thesis serves as a guide.

### **Acknowledgements**

The research team wants to thank the editorial board of Fair East Publishers, and also the section editor of the International Journal of Management & Entrepreneurship Research Dr. Théophile Bindeouè Nassè for his sound support and excellent contributions. The team thanks Professor Kenneth Peprah and Dr. Samuel Twumasi Amoah for their tremendous contributions and support.

### **Conflict of Interest Statement**

No conflict of interest has been declared by the authors.

### **Funding**

The researchers have not received any support for the publication of this paper.

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