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Evaluation on Students Hostel Accommodation in Tertiary Institutions: A Case Study of Some Selected Institutions in Borno State-Nigeria

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Abstract: *Globally, student enrolment in higher institutions has been increasing. However, in many countries of the world, the provision of accommodation facilities for tertiary students continues to remain a challenge for the government. The increasing number of students in tertiary institution in several Nigerian cities has cause serious accommodation problems. A total of 378 Questionnaires was administered randomly to students of the selected school in the proportion of 63 questionnaires. The study also involved secondary sources, data obtained was analysed simple descriptive frequency statistics. The findings reveals that, 66% respondents were males; while a lower proportion of them (34%) were females. 38% of respondent claim number of occupants' per room as very high. 23% of the respondent were satisfied with the size of their rooms; 38% are not satisfied; 34% reported that, their verandah/sit-out are inadequate, the study recommends The study recommends that, government should as a matter of urgency to engage private hostel providers among others..*

Key words: *Hostel; Accommodation, Students and Facilities*

Introduction

Globally, student enrolment in higher institutions has been increasing (Simon, 2013). However, in many countries of the world, the provision of accommodation facilities for tertiary students continues to remain a challenge for the government. Research in the management of students' hostel in Nigeria has been on the front burner in recent times as steady growth in the students population in tertiary institutions which has created the need for expansion in infrastructure but no effort has been made to provide more accommodation for students and staff. It has been established that the inadequacy of hostel accommodation has an adverse effect on the actualization of qualitative and standard education in Nigerian universities and polytechnics The surge in students has not been matched by a corresponding growth in student accommodation and the available ones have not been properly managed(Olusegun,2015).

Over the past decades, there have been several attempts by scholars to understand, evaluate and identify key factors that determine accommodation quality in different contexts such as hotels and motels, accommodation. A hostel is a building that houses students under the leadership of hostel administrators. In the past, hostels were initially mean for students whose homes were far from the educational institutions, but recently even students from the same town are opting for hostel accommodations.

Most of the few facilities that presently exists in Nigerian institutions hostels are the built in type consequently, most students have to study somewhere else, due to the uncomfortable nature of their residences. In Nigeria there are two main types of hostels namely, institutional and private hostels. The institutional hostels are those hostels that are provided for the institutions by their owners or their benefactors while private hostels are the hostels developed by private estate developers and investors for profit maximization purposes. There are also hostels under joint ownership in which the institution has an equity state in an institutional/private developer's development partnership.

Until recently, the accommodation of students within the immediate environment in which they study had always been an integral part of the design and layout of tertiary institutions in Nigeria. The intent of building hostels in the tertiary institutions according to Yusuf (2011), is to develop an environment which will enhance and extend learning experiences of students beyond the classroom. For a standard modern hostel, the facilities will include electricity, good water supply, security, library, bank, sports/recreational facilities, shops, kitchenette/cafeteria, medical centre, post office, business centre, laundry, car park and refuse disposal facilities.

Over the past decades, despite the fact that student accommodation has been a major concern to government and other educational stakeholder, very little attention has been given to the phenomena by scholars and practitioners, especially in developing countries context (HKUST, 2002). The provision of on campus accommodation for students has been seen as having effects on students' academic performance and social integration. Students' accommodation in tertiary institutions in Nigeria is severely overcrowded (Ojoachim and Olachi, 2009).The main cause of the perennial problem is the increasing number of students being admitted, without a commensurate increase in the number of hostel facilities (Simon, 2013). This situation has been aggravated by the severity of affordable and safe alternative housing in the neighborhoods surrounding the institution.

The student enrolment in tertiary institutions is growing at an average of 12% per annum (Okoh, 2004).The evolution of off campus student hostels occur (hostel accommodation) as a result of poor management of the school owned hostels. Accommodation on offer will be a vital component for universities and polytechnics to give good quality students. Hostels encourage more social interactions and students are meant to be free from domestic interference and therefore go on with their studies diligently. It is in this light that this research was designed to critically assess, evaluate, and examine the running of student's hostels accommodation in terms of their adequacy as auxiliary services in the academic studies of Tertiary Institutions in Borno State, Nigeria.

Problem Statement

The increasing number of students in tertiary institution in several Nigerian cities has cause serious accommodation problems and hampers hostels accommodation no longer cope with demand. The occupancy ratio has increased by 30 per cent that is fourteen persons are occupying rooms designed for four persons (Okah, 2004). Figures from the national universities commission shows that the provision of students housing is less than 30% of demand (HKUST, 2002). The vast majority students live in privately rented accommodation.

Presently the situation of hostels is opposite of what is used to be, as a result of sporadic increase in numbers of prospective candidates seeking admission into Nigerian tertiary institutions. This phenomenon has made hostels lose its original purpose of providing conducive academic atmosphere, good for learning and social integration. Institutional hostels are no longer able to cope with the population leading to unacceptable levels of overcrowding, stress on existing facilities, incessant breakdown of services and the promotion of cultism and other vices. The carrying capacity of almost all the Nigerian universities has been overshot severely (Joachim and Olachi, 2009).

The problems of hostel accommodation in Nigeria resolve around inadequate number of hostels, limited facilities and poor building. There is unhealthy competition for the limited hostel fees, overcrowding, frequent breakdown and deterioration of available amenities. This has social consequences in the form of cultism and the existence of crime syndicates, prostitution and other vices nurtured in these run-down hostels.

Significance of the Study

The research will serve as a resource base to other scholars and researchers interested in carrying out further research in this field. Subsequently, the findings from this study will assist planning authorities, developers, architects and designers in delivering quality hostel accommodation.

There is the need to empirically examine the situation of student accommodation quality in developing countries in order to contribute to the literature and inform theory on the service quality provision in students' accommodation context. This will go a long way in serving the hostel administrators and policy makers. The study will also provide feedback to higher educator management and student accommodation providers (SAP) regarding students accommodation quality and how it's affecting students' academic work in higher institutions in developing countries and Nigeria in particular.

Theoretical Framework

Gronroos (1982), was one of the first to define the concept of student quality from consumers perspectives and termed it as consumers perceived quality. he further defined it as confirmation or disconfirmation of consumers' expectations of service compared with the customers' perception of the service that is received. Student quality is important to student's accommodation providers because as a result of the competition in the industry, student accommodation providers no longer compete only on cost but more importantly on quality of the accommodation service to students. According to Akpan (1998), hostel or halls of residence are useful and safe places for powerfully controlling learning. He further defines hostels as a building that provides cheap accommodation and meals to students, workers or travelers. It is not always that hostels provide meals. The hostel provides short lodgings for travelers and visitors. Good hostels' facilities influences positive academic studies while bad hostels' environment constitutes a constraint to learning process.

The design of hostels in addition to bedrooms will provide for common rooms, meeting rooms, management office, waiting area, general store, managers and wardens flats. Student quality has been defined as the extent to which a service meets customer's needs or expectations (Norman, 1991). Simon, 2013, saw it as a form of attitude, which could be related to satisfaction but not equivalent to it that results from a comparison of expectations with perception of performance. In the context of student's hostel or hall of residence accommodation, the one service refers to the most basic reason for renting it accommodation for a time period. Thus, the core service will include such things as bedroom, toilet and bath facilities since these appear to be so basic that a student seeking hostel accommodation to rent would have to consider them probably. Hostels provide single and shared bedroom accommodations. The bedrooms are furnished and the students have access to shared bathroom, laundry, lounge and recreational facilities. In other case, only basic necessities are provided in the bedrooms, the students move in with their beddings and basic needs. In the context of students hostel or hall of residence accommodation, facilitating or enabling services of supplementary services that are necessary for such accommodation could include utility facilities (e.g. water, electricity etc.) security, rules and regulations among others. Supporting services, on the other hand, may include such value added services desirable at student hostel or hall accommodation like common room, entertainment hall/facility, reading room, library, ease of transportation to lectures, garage among other things. Supporting services are only desirable if they are available but may not be the most important in renting of student accommodation.

According to Paulette (2015), the nature and details of the rules and regulations in Nigeria are influenced, among other factors, by the location, sociocultural, religious, political and economic environment of the institution. Student's accommodation should also have a strong focus on innovation and sustainability. Hostels need to meet ordinary standards of hotel in the provision of good conditions such as good sanitation, clean water, electricity, proper supervision, and well-maintained property. Generally, lodging in typical students' hostels is on semester/academic year basis. Hostel maintenance is the combination of all technical and associated administrative actions intended to retain hostel or restore hostel to a state in which it can perform its required function.

Students' hostels as supportive services are not an extra mural or supplement to the educational experience, but in fact serve as a fundamental element of the educational process. Hostel life contributes to student academic studies, earn a higher grade point average and drop out of school at a lower rate than non-hostellers. Apart from the core service, product also consists of other supplementary service (Gronoos, 1990). Support services been variously described as auxiliary services (Simon, 2013). Facilitating services (and goods) are those which are necessary for the core service to take place let supporting services (and goods) do not facilitate the delivery of the core services but create added value for the client. To create an environment that is conducive to learning, rules and regulations are provided to guide the behaviour of the students and their use of the hostels facilities. Apart from the core and supportive aspects of student accommodation quality, the cost of the accommodation and the perceived overall quality could be important factors for evaluation of student accommodation quality.

Methodology

The study relied on both primary and secondary data. Primary data for this study was obtained through the administration of questionnaire to students in selected hostels within the study area. The primary data also involved interview schedule with selected management staff. The questionnaire sought information on the socio-demographic characteristics of the respondents, assess the general level of student' housing facilities and second, to determine the status of hostel facilities and their level of satisfactions, among others. The respondents comprised of two categories viz: the students resident in the hostels and the management staff of the students' hostels in each of the selected schools.

Six (6) institutions representing 40% of the total tertiary institutions in the study area were purposively selected. The study administered questionnaire to selected students in the hostels' blocks randomly chosen as representative. Subsequently, 63 questionnaires was administered in each of the selected schools. This resulted to the administration of 376 questionnaires to the respondent in the selected schools (hostels) representing forty percent of the total population of the study. Using systematic random sampling technic, respondent were finally selected. The data collected were analyzed using descriptive statistical analysis.

A questionnaire interview schedule will be administered to the selected officials/Students Coordinators of each of the selected school. Also the same will be done to the Student Affairs Registry, Directorate of Quality Assurance and the Academic Planning Units of the selected schools in Borno state.

Results and Discussions

Respondents were asked to indicate if they were satisfied with their accommodation facilities. Majority of the respondents 56% were not satisfied with accommodation. Those respondents indicating satisfaction with accommodation facilities was 14% and the remaining 30% are not sure. The findings further reveals the level of satisfaction with accommodation, 23% reported low and 41% to very low level of satisfactions with the hostel accommodation, the insignificant 3% considered as high and 33% as fair. Adilieme

(2019), found that the students of the Polytechnic Ibadan were unsatisfied with the housing provision made by the institution. The study highlighted the issue of inadequacy of the facilities provided for the students and the poor maintenance and state of obsolescence of the existing facilities.

Respondents reported the ideal number of students who should occupy a hostel room. Significant 55% suggested that two students should occupy a room. This was followed by 23% those who felt that each student should have his or her room and 18% preferred three students per room. Very few respondents favored more than four students staying in a single room (4%).

Adequacy of Accommodation Facilities in Hostels was also assessed. A student needs may include electricity, water, sanitation facilities, garbage disposal facilities, recreational facilities and some indoor fittings. Responses were rated in a scale of between; 1- Very inadequate, 2- Inadequate, 3-Fairly adequate, 4- Adequate .the insignificant 3% reported adequate, 21% reported fairly adequate and 63% inadequate. In assessing the housing situation among students of public tertiary institutions, Kelly et al (2016) revealed the issue of inadequate supply of student housing at the University of Lagos. This also agrees with, Adilieme, (2019), found that there is a high level of dissatisfaction with the poor state and condition of the available student housing facilities in the University of Lagos. The study also noted the inadequacy of the existing facilities, which has invariably created a high occupancy ratio and led to overutilization of the available resources putting the facilities in deplorable conditions.

The findings also shows that, the satisfaction level of students with their hostel environment, dwellings and the management of the hostels. The findings indicate that there are variations in the hostel satisfaction levels of students, and these depend primarily on the environment, dwelling/facilities and there occupancy level. 53%reported that, there level of satisfaction as poor, 33% reported fair while 10% of the respondent viewed as good.

The findings on the socioeconomic characteristics show that, 66% respondents were males; while a lower proportion of them (34%) were females. This data is also reflective of the two groups. In the students' category, 58% of them were females while 42% of them who were males. Also, in the staff category, a majority (63%) were males, while 37% were females. With respect to the age categories, the data shows from the total that (62%) fell within the age category of 18-22 years, while number of student respondents were the least age category are 2.6% of the respondents who fell within the age category of 36 years and above. In the management staff category, a majority of them (34%) fell within the age category of 28-32 years; while the least age category is 13% of them who aged 48 years and above.

The survey also revealed that, 38% of respondent claim number of occupants' room as very high, 23% of the respondent were satisfied with the size of their rooms;38% are not satisfied; 34% reported that, their sit-out/space for drying of clothes as inadequate, According to, Ezeigweneme *et al*, (2020) only few universities in Nigeria can accommodate up to 50% of their student population and there is as much as 90% deficit in some The work Olusegun.(2015), indicate that, on the average, the occupancy ratio of on-campus accommodation compared to hostels facilities in Nigerian colleges has increased by 300 per cent, that is, fourteen persons are occupying rooms designed for four persons. Kelly *et al*, (2016) stated further that some of the existing furniture has been removed in order to provide space for additional double bunks.

The findings further shows, 36% reported hostel waste disposal is inadequate; 43% reported hostel security as poor. Similarly, 41% reported that they were satisfied with water supply; 57% considered the power supply as poor; while 35% regarded the hostel environment as generally fair. In addition, the students considered their toilets as inadequate and were not satisfied with condition of their toilets 41%. Findings also reveals that, 32% of the respondent reported that their Bathrooms, water supply system, are fairly good; recreational facilities and environmental cleanliness, were rated as very low. Majority of the respondents 28% rated the overall conditions of students' hostel facilities as 'Poor', although a closer proportion to this 25% rated the facilities as being fairly good. Olusegun (2015), point out that the adequacy of housing is not only determined by the shelter and facilities but also by the entire system of supportive and facilitative infrastructure and services, including accessibility to workplace and social facilities and amenities.

Conclusion

The results of the analysis indicate gross inadequacy of students' housing facilities as a result of non-provision, obsolescence, and non-maintenance. It was equally observed that some of the facilities are not evenly distributed. However, the results also revealed adequacy of few facilities.

Students' hostel accommodation has been one of the major challenges in Nigeria tertiary institutions due to explosion in students' population. The study assessed the status of hostel's facilities in Borno State tertiary institutions. It was discovered that some facilities were in deplorable conditions, others were not sufficiently provided. The provision of on-campus accommodation for students has been seen as having effects on students' academic performance and social integration. In order to ensure that students' hostels in tertiary institutions justify this assertion, there is a need to deal with facilities gaps in students' housing.

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Assessment on Unmet Needs of Internally Displaced Persons in Maiduguri Metropolis, Borno State-Nigeria

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Abstract: *One of the gravest humanitarian consequences of armed conflict is the displacement of populations. The forced displacement of civilians remains one of the most pressing humanitarian problems in developing countries. The research is primarily empirical and was conducted through field surveys in the study area. The field survey consisted of questionnaire administrations and focus group (FGD) discussions IDPs and the host families. The study also employed secondary source of data which involved literature searches. A total of 344 IDPs was surveyed – including 216 residing in host families. – using a questionnaire that was administered individually. Findings reveals that, 38% reported inadequate water, 34% reported lack of electricity, and 27% to primary health services. The shelter/housing problems faced by IDPs in the camps included: overcrowding (46%). 25% reported lack of adequate space, 29% of the respondent reported that, the buildings are lacking doors and windows and a times none at all (5%). The study recommends Government should ensure adequate supervision and monitoring of Humanitarian Assistance to prevent misplace priority and to avoid duplication of functions among the humanitarian actors among others.*

Key words: *Assessment, Displacement. Needs, Camps and Conflict*

Introduction

One of the gravest humanitarian consequences of armed conflict is the displacement of populations (Deborah and Raoul, 2002). Whether it happens from natural disaster, environmental degradation, political fiat, or conflict, losing one's home also means losing identity, family history, livelihood, and community. This in turn, causes families to rely on the hospitality of relatives, remittances from family members or humanitarian assistance from international and national sources (Abdulrahman and Zuwaira, 2016). IDPs resides in variety of predominantly spontaneous settings, including camps, schools, public buildings and host communities Most IDPs in Nigeria having been deprived of their homes or place of origin usually take refuge in temporary shelter such as schools, army or police barracks, hospitals, abandoned or uncompleted buildings, public building and places of worship, camps and settlements among others (Oduwpye and Fadeyi, 2013).

The forcible uprooting of people is an inevitable consequence of armed conflict (Kungu, 2015). The large proportion of persons internally displaced in Nigeria is due to violence (Salkida, 2012). Forced displacement has grown in size and became more complex in recent years (Kungu, 2015). Nigeria has witnessed unprecedented high levels of violence since its independence. This violence can be mainly attributed to three themes: ethnicity, religion and politics (Abdulrahman and Zuwaira, 2016). This has led to conflict induced displacement creating large numbers of internally displaced persons. Lately, the North-East of the country seems to be experiencing a large mass of this life-changing event called internal displacement (Gamawa, 2017).

Borno State which currently hosts seventy-five percent (1,439,953 IDPs) of all IDPs in northeast Nigeria, has also been noted as the place of origin for the majority (84%) of the displaced in Nigeria's northeast region (Serano, 2017). Violence perpetrated by the extremist group Boko Haram has affected Borno, resulting in widespread displacement and a growing humanitarian emergency. The crisis is adding to chronic under-development, food insecurity as well as general poverty, illiteracy and unemployment. Living conditions in the camps and in the informal settlements are difficult and, in most cases, deplorable, mostly due to the lack of adequate infrastructure to cater to the populations' needs. There are also security challenges in addition to a limited supply of basic food and non-food items, health facilities, education, and livelihood opportunities.

The forced displacement of civilians remains one of the most pressing humanitarian problems in developing countries (Salkida, 2012). The displaced lose their social, legal and economic ties and thus suffer considerable physical and psychological hardship. Overcoming the consequences of conflicts and internal displacement encompasses a broad range of activities that need to be undertaken by the states, NGOs and international actors, especially in the post-conflict phase (UNHCR, 2017).Nigeria's emergency humanitarian response for IDPs in the North East is funded by both the State and Federal Governments, primarily through National Emergency Management Agency(NEMA) and State Emergency Management Agency(SEMA).

However, aside from some small-scale interventions, authorities have mainly focused on IDPs located in formal IDP camps. The majority of IDPs residing outside of official camps do not receive food (or cash) assistance from national authorities (Fatima, 2017).The Joint United Nations (UN) Multi-Sector Assessment conducted in April 2016 in Borno LGA, as well as Maiduguri and its surroundings, found that over 550,000 people in Borno State were severely food insecure and in need of immediate food assistance, including 180,000 in Maiduguri's outskirts, 120,000 camp residents and approximately 250,000 IDPs in newly re-opened areas. Although there has been an increase in humanitarian assistance provision in Borno in recent months, a large portion of the population remains in need of food assistance and other basic services driven primarily by ongoing insecurity and displacement (CRC, 2016).

The deteriorating security situation in and around surrounding villages of Borno State, coupled with a comparatively more stable situation in Maiduguri, has culminated into a high number of individuals fleeing into the city to seek refuge. This situation is further aggravated by the limited access to social, educational and health services for the displaced population. This research is therefore designed to assess the unmet needs of the internally displaced persons in Maiduguri metropolis, Borno state.

Problem statement

As in most parts of the world, IDPs in West Africa often lack access to basic services, but their vulnerability is difficult to assess given that IDPs in the region tend to seek refuge with their families and friends (Elizabeth and Chareen, 2012). This renders the identification of the displaced and the assessment of their needs difficult. The presence of IDPs in most cases strains host communities whose resources tend to be limited even before they take in their displaced kinfolk or friends (Serano, 2017).

The Boko Haram induced conflict has exacerbated the already poor food security situation of both the host and the IDP communities (Simon, 2016). High food prices, market disruption, the lack of employment opportunities, coupled with a situation of chronic poverty have reduced households' purchasing power and eroded livelihoods at the detriment of the access to food.

Currently, there is no coordinated or harmonized system at the Federal, State or LGA levels for monitoring or evaluating assistance to IDPs (Serano, 2017). However, the ICRC has observed that monitoring of assistance interventions takes place at varying levels within some of the Ministries and Agencies.

IDPs are more vulnerable than other residents of the city. Profiling results show that IDPs are the most vulnerable, followed by host families (ICRC, 2016). Key findings were that;

1. Living conditions are very poor, particularly in the inner city and the extreme peripheries. The main problems are unsafe, overcrowded accommodation, low tenure security and poor access to services such as good quality water, electricity, sanitation and education..
2. IDPs have poor economic stability and low asset ownership. Key concerns are high levels of food insecurity, debt and unemployment; insecure, unpredictable informal sector employment; wage disparity as compared to residents; low levels of property and land ownership and loss of productive assets (ICRC, 2016).

The impact of internal displacement can equally be devastating for States, which may lack the capacity or institutional structures needed or ill prepared for such eventualities. Hence, large-scale displacements can destabilize entire regions, posing severe security, economy and infrastructural challenges. Protection challenges can also arise when designation of people as IDPs does not include all those who are displaced. It is in line with this that the study is design to assess the unmet needs of internally displaced persons in Maiduguri Metropolitan Council.

Relevance of the Study

This study is designed to responds to the knowledge gap on current living conditions and unmet needs of persons affected by displacement. It will identify areas of primary concern for government and humanitarian actors and proposes avenues for further research. It will also provide information to the humanitarian community and government in order to develop an integrated programme response.

This study will provide a tool for assisting government and decision makers/ humanitarian/ development partners to evaluate opportunities for conflict affected IDP populations in Maiduguri metropolitan council. The purpose is to provide internationally agreed standards and best practices for undertaking interventions that support IDPs in camps and host communities that are appropriate and applicable for enduring outcomes.

Theoretical Framework

This study hinges a helping solution on Milgrams' Agency theory. The theory stemmed from Milgram's experimentation. Milgram (1974) explained the behaviour of participants in his study by suggesting that people actually have two states of behaviour when they are in a social situation: the autonomous state where people direct their own actions, and take responsibility for the results of those actions; and the agentic state where people allow others to direct their actions, and then pass off the responsibility for the consequences to the person giving the orders. In other words, they act as agents for another person's will the will of their principals who control them.

Literature Review

The term "conflict-induced displacement" was coined and slowly popularized in literature on forced migrations during the nineties (Patricia, 2011). The growing number of people internally displaced as a result of armed conflict and massive violence prompted the adoption of the Guiding Principles of Internal Displacement in 1998, as well as local documents on IDP protection and assistance and regional stability in Africa (Convention of Kampala) in recent years.

All definitions agree that IDPs have been uprooted from their homes but remain inside their own countries (UNHCR, 2017). U.N. Guiding Principles on Internal Displacement states that IDPs are "Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border. Internally displaced persons (IDPs) include people who have fled their communities because they were caught in the crossfire between armed parties or whose displacement was a deliberate strategy pursued by combatants (Deborah and Raoul, 2012). According to Oduwoye and Fadeyi (2013), internal displacement consists of a three-phase *process*:

1. **Pre-displacement**, when the State's focus should be on preventing the causes leading to displacement from occurring;

2. **During displacement**, when the focus should be on protection and assistance for IDPs and affected communities, as well as steps to resolve their circumstances originally leading to displacement;
3. **Post-displacement**, after such circumstances have been resolved, when the focus should be on finding durable solutions for the affected IDPs, delivering development and humanitarian assistance and building sustainable livelihoods

The dominant classification of internal displacement, but one rarely applied in the scientific literature, distinguishes four root causes of this process (Odhiambo-Abuye, 2013). They include conflict-induced displacement, environmentally-induced displacement, disaster-induced displacement and development-induced displacement. Despite its theoretical usefulness as a basis for broad considerations, this classification somehow very rarely appears in the literature (Muggah, 2018).IDPs comprise the largest group of vulnerable people in the world (Odhiambe-Abuye, 2013). They are usually cut off from their normal jobs, healthcare and sanitation systems, schools, security networks, and means of economic and social support. Central to the framework are the concepts of internally displaced persons, IDP Durable Solutions and the Sustainable Livelihoods Framework (Lee, 2014).
However, most of the displaced population resides in "unofficial" camps, defined as such because they have been established as a result of the spontaneous settlement of one or more communities. IDPs living with their extended families are defined as residing in "host communities". The population of IDPs in host communities is greater than those residing in camps (Elizabeth and Chareen, 2012).

Location of the Study Area

Maiduguri is the capital of Borno State, it has long been one of the dominant cities in the north eastern Nigeria, and its location close to the republic of Chad, Niger and Cameroun, gives it an increasing significance as a center of commerce, transport, education, religion and administration. It covers a total area of 543sq km which makes it the largest city in the North Eastern region of Nigeria.

The city lies on Latitudes 11º05^{1}North and Longitudes 13º05^{1}East and it stands some 350 meters above sea level. Although Maiduguri is predominantly a Kanuri town, it has always been and the host to other parts of Nigeria and Africa. The nearest major towns in Nigeria are Damaturu (about 135km), the capital of Yobe state, Bauchi the capital of Bauchi state and Kano the capital of Kano state, which are almost 450 and 600km to the southwest from the state capital.

The city is currently home to around 2.5 million people (OCHA), of which the International Organization for Migrations (IOM) Displacement Tracking Matrix system identifies 1.4 million as being Internally Displaced Persons (IDPs), living in Greater Maiduguri. According to ICRC (2016), some 30 different locations host IDP settlements in Greater Maiduguri; however, only the 8 percent of the IDPs currently live in camps, the remaining live among host communities. Babagana et al, (2018), buttressed that, there are 15 IDP camps officially recognized by the Borno State Government, later some of the camps were migrated to others because of the government reopening of the schools. He further identified the camps as, Dalori II, GGC Camp, Madinatu, Goni Kachallari, EYN/CAN Camp, Teacher's village camp, Gov't College camp, NYSC CAMP, Sanda Kyarimi camp, Farm Centre camp, Bakasi camp, and ATC camp.

Methodology

The research is primarily empirical and was conducted through field surveys in the study area. The field survey consisted of questionnaire administrations and focus group (FGD) discussions targeting IDPs and the host families. The data obtained were analyzed and complemented with the qualitative data from Focus Group Discussions (FGDs). Descriptive statistic was employed for the analysis of the data. The study also employed secondary source of data which involved literature searches.

A total of 344 IDPs were surveyed – including 216 residing in host families. – using a questionnaire that was administered individually. The questionnaires were administered in 8 different locations of the selected Formal/Informal IDP camps and the host families. The selection of camps for the assessment was based on the following criteria:

a. open at the time of data collection,

b. contains at least 25 households (for formal camps), and;

c. no security or accessibility constraints.

A stratified purposive sampling method was applied. Stratification, or stratified sampling, involves dividing the population of interest into sub-groups (i.e. strata) that share something in common based on criteria related to the assessment objectives. In order to achieve the proposed objectives, two main criteria defined the households'/population selection:

1. Local population and

2. IDP population. Within these two sub-groups the respondent/households were selected randomly. Therefore the information collected through this sampling frame cannot be extrapolated to the entire study area. A total of 344 IDPs, with 43 from each of the 8 camps and 216 host families were surveyed using a questionnaire that was administered to identify individuals, using the random sampling selection techniques.

Primary data was collected through face-to face interviews using a household questionnaire that focused on general socio-economic and demographic household characteristics, food security indicators, health, housing/shelter and sanitation features, income/livelihood sources, and desired assistance among others. A total of 560 questionnaires were administered in all.

Findings and Discussion

Socio-economic Characteristics and Core Needs of IDPs and Host Communities

The study was carried out in eight selected official /unofficial camps and the host families. The quantitative data were obtained by the administration of a structured questionnaire to adult of 18 years and above. The majority of the IDPs were between age 18 – 28 (36%), women (62%), 40.8% had Qur'anic education, and 66% were married. The major challenges facing the IDPs were hunger (26%), lack of clothing (19%), regular sickness (18%) and lack of adequate shelter (10%). The items received from the FEMA/SEMA NGOs include foodstuff (27%), soap and detergents 19%, clothing materials, Beddings/Blankets 23%, and drugs 19%. The majority 46% rated their situation since they arrived in the camp very good, 52% affirmed great improvement in their situations, and 2% stated that their situations were deteriorating. 52% of the respondent indicated that food was their major priority. 32% shelter and 11% adequate health services and 5% for security.

Living conditions for IDPs vary greatly. Some live in easily identifiable camps that are officially designated by local authorities others seek shelter in created unofficial camps. (54.6%) and poor food distribution 26% reported insecurity and 10% viewed restricted movements as amongst some of the major problems reported by the selected respondents in the camps. Also on a physical aspects large proportion of the respondents reported overcrowding (45%), unconducive housing (14%), dirty environment 25% reported poor living conditions,(15%) in the camp. Living conditions in both the formal camps/informal camps and the host families are difficult and, in most cases, deplorable, mostly due to the lack of adequate infrastructure to cater for the populations. This agrees with Ali et al, (2020), that influx has put enormous pressure on the already weak and limited infrastructure and social services.

Displaced persons in host communities have mostly settled in locations that have inadequate or no basic services, The accommodation in the camp are mostly constructed using wooden support columns, covered with sack bags and tarpaulin. They are arranged in no order on the camp site and are not durable and so do not protect their occupants from harsh weathers. The shelter/housing problems faced by IDPs in the camps included: overcrowding (46%). 25% reported lack of adequate space, 29% of the respondent reported that, the buildings are lacking doors and windows and a times none at all (5%).

Findings reveals that, 38% reported inadequate water, 34% reported lack of electricity, and 27% to primary health services as amongst the basic facilities. IDPs in host communities, mostly live in open spaces or makeshift shelters, giving rise to a number of informal settlements. Hence, limited resources have become overstretched, creating additional difficulties in already poor neighborhoods as opined by Ali et al, (2020). 38%of the participants reported lack of easy and safe access to a clean toilet was perceived as a serious problem. Findings also revealed that access to insecticide-treated nets, blankets and health care facility, as well as waste disposal, were generally poor.

There are also security challenges in addition to a limited supply of basic food and non-food items, health facilities, and livelihood opportunities. Although the local authorities, particularly FEMA/SEMA and also some humanitarian and Donor agencies, provide some food and relief material, conditions in the camps, particularly informal ones, are quite difficult. Food was the main unmet need cited by 52% of those surveyed. In generally, the priority needs of IDPs are related to 36% food security, 13% housing/shelter, 16% health care, 21% income-generating sources, and 14% security. The general response was that the beneficiaries were aware that food items were brought to them in the camp and they also affirmed that, officials wore tags/jackets that indicates they are from the NGO or Government Officials. The respondents said they had benefited in the area of health support and health-related services.

Income earning opportunities are also very difficult, as most are rural farmers with no access to land or cash, nor do they possess alternative skills to earn a decent living. Hence, humanitarian needs, including food and non-food items, shelter, and primary health care, need are inadequate FGD. The survey revealed that 57% reported the need for continuous assistance, both from the NGOs and the Government. The majority of the IDPs were trained on tailoring, 17% soap-making 27%, and 36% knitting and carpentry. Meanwhile, 42% reported lack of finance and 38% inability to earn a living with their skills as major constraints. 28% were involved in menial jobs. They were involved in activities such as sweeping (41%), hawking (32 %) and truck pushing (22%) Inadequate income, money or resources to live on were seen as also a serious problem.

Hence, IDPs can strain local health systems and the host population ends up sharing the sufferings of the internally displaced. The major sicknesses reported by the IPDs were Malaria (42%) skin infections (15%). 29%, cold/catarrh illnesses, and 14% diarrhoea, as the most commonly suffered illnesses among IDPs in the study area. These challenges could probably result from a combination of factors including the poor hygiene practices and inadequate sanitation in most part of dwellings FGD. In the same location, as reported by key informants, that the health services available were: reproductive health, and emergency. However, the survey employed self-Rated Health status. This study found that the major non-health challenges of the IDPs are lack of food and clothing, and lack of proper sanitation. These findings are in line with the reports of previous studies that enumerated the challenges of IDPs in Nigeria as "lack of shelter, food, health care, and potable water (Foronbi et al, 2019; Victor et al, 2017).

Conclusion

The findings of this study revealed that residents of IDP camps and the host families/communities live in a deplorable and unhygienic environment. Factors such as water supply, overcrowded living conditions and dirty environment are amongst some of the problems in the area. The lack of basic infrastructure in the IDP camps is indeed a substantial problem which collective efforts of governments, nongovernmental organization and individual philanthropy have not adequately addressed. This study found that prevalent health problems among the IDPs were malaria, cold and catarrh, and diarrhoea and their health needs include proper sanitation, lack of access to potable water and inadequate health care services. The lack of a systematic national and state unmet needs assessment of IDPs monitoring system is one of the critical challenge in determining the needs of internally displaced. Understanding the severity of food and non-food items is essential for determining the most appropriate response in meeting the needs of the IDPs.

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Impact of Boko Haram Insurgency on Educational Activities in Borno State

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Abstract: *This study was designed to examine the impact of Boko Haram insurgency on educational activities in Borno State. The study was guided by four specific objectives. The design used was descriptive survey. Instrument used for data collection was questionnaire. The population of the study consists of the entire staff and students of public secondary schools in Maiduguri. A purposive sampling was adopted for selecting the schools and a simple random sampling technique was used for selecting the staff that partook in the study from the affected schools. A sample of 150 staff and student were drawn from the entire population, comprising of 30 Teachers, 20 Administrators and 100 students of 2020/2021 academic session. The data collected was analyzed using descriptive statistics (Mean and Standard deviation to answer the research questions).The findings shown that, bokoharam insurgency have negatively affected students enrollment in most public secondary schools in Maiduguri Borno State ,bokoharam insurgency has strongly contributed to low school attendance by students in Maiduguri and disclosed that several school facilities and infrastructure were destroyed in public secondary schools in Maiduguri by the insurgents which affected academic activities to run smoothly. Based on the findings it was recommended that Government and security agents should be vigilant on what is happening in the society, especially among the people, to curtail the negative actions. Government and security agents should give special attention to the schools and students of that region with all necessary action to protect them from the physical and psychological attacks of the Boko Haram insurgency.*

Key words: *Boko Haram, Insurgency, & Education*

Introduction

Insurgency is a rebellion against authority when those taking part in the rebellion are not recognized as belligerent. Boko Haram insurgency has lately been considered as one of the terrorists group into crime space in Nigeria. The trademarks of Boko are wanton destruction of lives and property, through bombings, abduction and slaughtering of human beings especially in the North Eastern Nigeria. The emergence of the Boko Haram sect, whose objectives is to introduce their ideology on people through bombings, slaughtering, and abduction of human beings, creating fear and sense of insecurity in the society to achieve their aims in Nigeria has been a major concern not only to the nation but also the international world. Their strict ideology was enforced by radical religious beliefs, a terrorist outlook, and a network of criminal gangs, and a political tool to 'colonized' territories with the aim of propagating their ideology (Eze, Wosu&Agwanwo (2014) According to Mohammed (2014)Boko Haram destroy economic activities of any place they spread their tentacles as well as led to movement of people from the affected place due to restiveness. The trademarks of the Boko Haram are destruction of lives and property with reckless attitudes, through bombings, abduction and slaughtering of human beings especially in North eastern part of the country and other places. Education as tool for development suffered a great set back in Africa, due to violent conflict in form of Insurgency which consumed lives of innocent citizens and led to the destruction of properties worth billions of naira, and millions of people displaced from their homes. Nigeria has recently experienced severe security challenges from the activities of Boko haram insurgents, which has affected children's Education in the north east region of Nigeria. Borno State started experiencing the global trend of insurgency from 2009. This led to the gruesome killings of innocent Nigerian citizens perpetrated by an insurgent group called Boko Haram (Ovaga 2014). Since 2009, they have disrupted educational system in BornoState with huge negative effect on basic education. The insurgent group dislikes children attending schools, and also committed criminal offences ranging from kidnapping of school pupils and attacking teachers in schools .(Adeyemi, 2014).

The first offense by the group which attracted public attention was in 2009, when they launched an attacked on Borno state police Headquarters in Maiduguri the Borno state capital, Nigeria. Ugwumba and Odom (2014) observed that, Education is under attack, as incidents of violence increased against students, teachers, schools and Educational facilities in Nigeria, Africa and the world at large. Amnesty International (2013) reported that, since the beginning of 2012, about 70 teachers and over 1000 school children have been killed or wounded. Joda and Abdulrasheed(2015) wrote on the effects of insurgency on girls Education, and their study revealed that, the insurgents attack villages, burnt infrastructural facilities, destroy schools, with frequent abduction and killing of both staff and students, they massively destroyed all school activities in the region, which led to the indefinite suspension of all academic activities in the affected zones in these countries.

Statement of the Problem

North east of Nigeria seems to be a hot bed of insurgent activities. Insurgent activities may have serious implications on the management of secondary schools in the zone. The main insurgent group is Boko Haram. Loss of lives and destruction of school facilities may translate into serious concerns on the management of secondary schools in the zone. Many secondary schools may have been burnt, bombed and shelled by the insurgents. Relevant stakeholders are concerned that if schools are damaged or closed, students might not be able to complete courses or sit for examinations. This means progression rate of students through the grades may be affected and could translate into educational wastages as the system might not run efficiently. The extent of impact of insurgency on educational activities in borno state of Nigeria thus becomes the focus of this study.

Objectives of the study

The main objective of this study is to examine the impact of Boko Haram insurgency on educational activities in Borno State. The specific objectives are:

i. To examine the impact of Boko Haram Insurgency and students' enrolment in Borno State school.

ii. To examine the impact of Boko Haram insurgency on students attendance in Borno State schools.

iii. To examine the impact of Boko Haram insurgency and student's performance in Borno State schools.

iv. To examine the impact of Boko Haram Insurgency on school structures in Borno state.

Significance of the Study

This study contributed significantly in illuminating that insurgency is a weapon that is used to destroy not only the Physical settings of a society, but the plan of investment a society made on its self, in order to achieve Better standard of living in the future.

The study would be of great benefit to Borno state to understand the magnitude of conflict and its overall impact on the educational status and that their aims and objectives can be achievedby their dedication, hard work and determination. Among the objective of any people of Local Government is attainment of better education. As such, development of Local Government depends on the attainment of better education which can only be achieved, if Local Government is not distracted or affected by any forms of violence, such as insurgency. Therefore, Local Government by them self will involve infighting against anything that can distract them in achieving their aims and objectives.

The study also helped the Borno State government to understand that, for education to serve as an engine of growth and development, it needs proper protection and priority. Similarly, the entire State has to be protected against any destructive elements, such as Boko Haram insurgency, Bandits, corruption, embezzlement of public funds etc. Furthermore, the study shall be of great assistance to policy makers in terms of making policies that can ensure peace and stability.

Literature Review

Conceptual/Theoretical framework

Boko Haram

Adebayo (2014) defined Boko Haram as a group of persons that forces their ideology on people through bombings, slaughtering, and abduction of human beings, creating fear and sense of insecurity in the society. According to Marc (2014) Boko Haram has been seen as a violent insurgency, radical religious sect, a terrorist organization, a network of criminal gangs, a political tool and a cult. According to Web (2013) Boko Haram is the group of people or a militant Islamist movement who are forcefully required to create an Islamic state in the Federal Republic of Nigeria. Eze, Wosu and Agwanwo (2014), explained Boko Haram as a group that is characterized by some negative activities such as bombings, abduction and slaughtering of human beings. As such development can never take place in an atmosphere of insurgency. This is because of the destruction of lives and properties as well asproducts from northern region because of rumor that Boko Haram are planning to send poisonous products to other parts of the country. Also, the Boko Haram insurgency has decreased drastically government developmental projects, investment and growth in private business initiatives in the affected places. It has been pointed out that Some of these Boko Haram attacks are politically motivated even though some may have other motives such as religious, economic or social (Obioma 2012).

Abimbola and Adesote (2012) viewed Boko Haram insurgency as the manifestation of internal terrorism in Nigeria. According to Mohammed (2014) Boko Haram are used to destroying the economic activities of any place they spread their tentacles as well as led to movement of people from the affected place due to restiveness. The trademarks of the Boko Haram are destruction of lives and property with reckless abandon, through bombings, abduction and slaughtering of human beings especially in North eastern part of the country. This has created fear and sense of insecurity in the polity, *Anthony* (2014).

Frustration-aggression theory

The frustration-aggression theory is a theoretical framework developed or propounded by John Dollard with his associates in 1939 but was expanded, improved and modified by Yate 1962 and Berkowitz (1963), designed mainly from the psychological basis of motivation and behaviour. The model provides explanation for violent behavioural disposition which caused by the inability of individuals to fulfill their human desire. It is on the basis of the general premise that all individuals have basic needs which theyseek to fulfill, and that any distraction that can prevent them from getting these basic needs, can result in violent reaction. The theory emphasizes the discrepancy between what people want and the difference between what is sought and what they get. The model therefore, tries to explain the fact that violent response by individuals resulted from the prevention of not achieving their basic needs. The theory also emphasized that, in the face of frustrated expectations, individuals are capable of embarking upon violent destructive behavior, or even become ready army to be used, to cause crisis once their basic needs are not fulfilled. The main explanation of the theory is that, aggression is the natural result of frustration. In a situation where the legitimate need of a group of people is denied either directly or indirect, the feeling of frustration can influence such individuals to express their anger through violence. Such violence is often directed at those perceived to be the cause of the misfortune or even those related to frustrating their expectations.

Review Empirical studies

Several studies have been conducted by many researchers that are of importance to this study. A review of some of such studies is presented in this section. The study of Bilyaminu 2017 examined the impact of Boko Haram insurgency on education in Adamawa state. The data is primary in nature, sourced through the distribution of 372 questionnaires to the affected local government's areas. Structural Equation Model (SEM) was the model used in analyzing the data collected. The findings indicated that, educational output (human capital investment) is affected by school enrolment, school attendance and school infrastructure by 71%, 84% and 82% as a result of any 1% increase in Boko Haram. It also revealed that, extreme religious beliefs, unemployment, and illiteracy contributed to the occurrence of Boko Haram insurgency. The study concluded that Boko Haram insurgency indirectly and significantly affects human capital investment through school enrolments, school attendance and school infrastructure. The study therefore recommended that, Government should provide employment opportunities for the citizens and encourage self-reliance in programmes such as agricultural borrower‟s schemes. Free education to increase literacy rate to every citizen, and government should be in constant dialogue with religious scholars/leaders (Muslims and Christians) on religious issues.Studies in Nigeria have produced negative impact of insurgency on education and its stake holders. Oladunjoye and Omemu*(2014)* examined the effect of Boko Haram on school attendance in northern Nigeria. The study made use of three hypotheses which were formulated to guide the study. The data was analysed using Pearson correlation coefficient statistic. The result showed that there is no significant different in school attendance among male and female. There is a significant difference in school attendance among rural and urban schools as well as in school attendance among primary, secondary and tertiary institutions in areas that were affected by Boko Haram attacks. A document on the same note titled "Education under attack" by the "Global Coalition to Protect Education from Attack" reporting to the Nigerian Union of Teachers (NUT) president revealed that, about 171 teachers were killed since 2009 at the hand of Insurgents. On the effect of this, they noted that the synergy of low pay and risk of attacks may weaken Nigerian education system.

Awortu, (2015) analysed the Boko Haram insurgency and its impact on development of Nigeria as a nation. Primary source of data collection was used. The study analysed the data collected through Qualitative technique to assess the impact of Boko Haram insurgency on the development of Nigeria. It was discovered that Boko Haram insurgency has led to the developmental challenges through destruction of lives and properties, destruction of schools which have led to the closing down of so many schools and businesses, reduction in government revenue, and political instability among others in the north eastern part of the country.

Mohammed (2015) examined the effect of insurgency on girls‟ education in north eastern Nigeria. Thesample for the study was 180 teachers of primary and secondary schools selected based on 30 teachers from each of the six (6) states that made up the north eastern religion of Nigeria .The technique for data collection was a 20 item of questionnaire which was converted to mean, and standard deviation. The study recommended that the Nigerian government make provision for free and compulsory girls‟ education at all levels of education. Also recommended was a show of higher commitment in mobilizing the arm forces to end the insurgency in the north eastern region and provide adequate security in schools.

The findings revealed that the insurgency has affected girls‟ education negatively in north eastern Nigeria, because the school girls have been hurt in the presence of other fellow students during attack in their school, as such female students were afraid of going to school.

A careful probe of the relevant literature reviewed by the Researchers has revealed that a lot of survey and empirical studies were conducted on the impact of insurgency on education, but not much of such studies have been made in Borno state in particular. Hence, this study is an attempt to fill the gap. The uniqueness of this study therefore, lies not only in the fact that it is one of the pioneer studies in Borno state to analyse the in-depth of insurgents activity on education, but also focused attention on three (3) variables (i.e enrolment, attendance and infrastructure) in relation to insurgents activities in Borno state.

The purpose of the literature reviewed was to add sphere of knowledge and fill gaps which this study was able to accomplish.

RESEARCH METHODS

Design of the Study

The research design adopted in this study was descriptive survey design. Survey design is those studies which aim at collecting data on, and describing the data in a systematic manner, using the characteristics?

Features and facts about a given population. According to (Gall and Borg, 2007) a survey study design is a Method of data collection using questionnaire or an interview to collect data from a group or sample that has been selected to represent a population to which the findings of the data analysis can be generalized.

This design is therefore considered suitable since the study solicited information on the analysis of the impact of insurgency on education in Borno state.

Population of the Study

The target population of the study is the entire staff and students of public secondary schools in Maiduguri metropolitan council in Borno state.

Sample and Sampling Technique

A purposive sampling was adopted for selecting the schools and a simple random sampling technique was used for selecting the staff that partook in the study from the affected schools.

A sample of 150 staff and student were drawn from the entire population, comprising of 30 Teachers, 20 Administrators and 100 students of 2020/2021 academic session.

List of public secondary schools and population of students in MMC

S,N	Names of schools	Male	Female	Total population
1	Government unity college Maiduguri	7812		7812
2	Government day secondary school Maiduguri	2100		2100
3	Mafoni day secondary school	3510		3510
4	Mustapha umar elkanemi Arabic college	2483		2483
5	Government unity girls college Maiduguri		2584	2584
6	Yerwa Govt girls secondary school Maiduguri		3725	3725
7	Government girls secondary school Maiduguri		3070	3070
8	Women day secondary school Maiduguri		3629	3629
9	Government day secondary school mairi	1828	1017	2845
10	Government day secondary school old Maiduguri	1416	1688	3104
11	Government day secondary school Bulabulin	2016	1849	3865
12	Shehugarbai senior secondary school Maiduguri	2210	1876	4086
13	Shehusandakyarimi secondary school Maiduguri	2151	1575	3726
14	Government day secondary school zajiri	2768	1081	3849
15	Brigadier maimulari day secondary school	1864	1085	2949
16	Government day secondary school lamisula	1500	1080	2580
	Total	31,658	24,259	55,917

Source: Borno state ministry of education, 2019

Table 2: Mean responses of insurgency and enrollment

S/N	Insurgency and school enrollment	Administrators	Teachers	Students	Grade mean	Std Dev	Remark
1	The number of graduated students is low due to student enrollment which is caused by Bokoharam	3.09	3.17	3.06	3.02	0.069	Agreed
2	The psychological effect of insurgency has contributed to low school enrollment	2.91	3.17	2.79	2.79	0.84	Agreed
3	Many parents sent their children away which contributed to low enrollment	2.91	3.05	3.21	3.20	0.045	Agreed
4	The enrollment of male student is greater than female student due to bokoharam insurgency	2.82	2.82	2.66	2.69	0.031	agreed
5	Teachers reject appointment or posting to areas affected by insurgency	3.36	2.17	3.21	3.2	0.217	Agreed
	Total Grand Mean				2.95		

Research Question One: ***Does the Boko Haram insurgency affect school enrolment?***

The result from table 2 shows the mean responses of the respondents on the Insurgency and School

Enrolment, the respondents include administrators, teachers and students all agreed that items 1, 2,3,4,5 of the factors that Insurgency has impacted on School Enrolment. Because the table revealed that

All the items have grand mean above 2.50. Therefore, the total grand mean is 2.95 which is above 2.50,

This indicated that majority of the respondents agreed that all of the items are the functions of Insurgency
and School Enrolment.

Table 3: Mean responses of insurgency and school attendance

S/N	Insurgency and school enrollment	administrators	Teachers	Students	Grade mean	Std Dev	Remark
6	The psychological effect of insurgency has contributed to low school attendance	3.00	3.17	2.78	2.83	0.159	Agreed
7	Many parents sent their children away which contributed to low school attendance	2.94	2.50	3.04	2.98	0.123	Agreed
8	Unemployment has contributed to the easily brain washing of many youth to get involved in bokoharam insurgency	2.48	2.17	3.04	2.92	0.136	Agreed
9	Bokoharam insurgency has contributed to the drop out of many students	2.85	3.33	3.09	3.09	0.069	Agreed
10	The bokoharam attack has made many teachers leave their jobs	2.45	2.83	2.77	2.72	0.060	Agreed
	Total Grand Mean				2.90		

Research Question Two: ***What is the impact of the insurgency on school attendance?***
The result from table2 shows the mean responses of the respondents on the insurgency on school attendance, the Respondents include administrators, teachers and students all agreed that items 6, 7, 8,9,10 are the
Factors that insurgency has on school attendance. Because the table revealed that all the items have grand mean Above 2.50. Therefore, the total grand mean is 2.90 which is above 2.50, this indicated that majority of the Respondents agreed that all of the items are the functions of insurgency on school attendance.

Table 4: Mean responses of insurgency and school infrastructure

S/N	Insurgency and school infrastructure	administrators	Teachers	Students	Grade mean	Std Dev	Remark
11	School environment and availability of school facilities improve the number of students that will graduate.	3.3	2.67	3.21	3.21	0.115	
12	The destruction of schools class room by book haram seriously affects the education of children psychological effect of insurgency has contributed to low school enrollment	2.82	2.80	2.66	2.69	0.031	Agreed
13	Science students are seriously affected as schools laboratories are destroyed as a result of schools destruction	2.91	3.00	3.26	3.20	0.060	Agreed
14	Efforts have been made by	3.36	2.17	3.21	3.20	0.217	Agreed

	government on reconstruction of schools affected by the attacks						
15	The destruction of schools by bokoharam attack has led to the closing down of unaffected schools	3.27	2.45	2.65	2.75	0.136	Agreed
16	Illiteracy has contributed to the involvement of many people in book haram activities	3.28	3.30	2.68	2.81	0.120	Agreed
17	Attacks on school facilities by bokoharam has negatively affected mindset of students	2.82	2.95	3.21	3.26	0.060	Agreed
18	The emergence of bokoharam is as a result of extreme religious believes,unemployment,poverty and illiteracy	2.70	3.00	3.04	2.92	0.136	Agreed
	Total Grand Mean				3.01		

Research Question Three: ***What is the effect of Boko Haram insurgency on school infrastructure?***

The result from table 3 shows the mean responses of the respondents on the insurgency on school

Infrastructure, the respondents include administrators, teachers and students all agreed that items 11.12.13.14.15.16.17.18, are the factors that insurgency on school infrastructure. Because the table revealed that all the items have grand mean above 2.50.Grand mean is 3.01 which is above 2.50, this indicated that majority of the respondents agreed that most of the items are the functions of insurgency on school attendance.

CONCLUSIONS

Based on the findings of this study, the following conclusions were drawn: From table 2, the analyses revealed that, bokoharam insurgency have negatively affected students enrollment in most public secondary schools in Maiduguri Borno State .Also from table 3 the analysis showed that bokoharam insurgency has strongly contributed to low school attendance by students in Maiduguri. Similarly from table 4 analyses disclosed that several school facilities and infrastructure were destroyed in public secondary schools in Maiduguri by the insurgents which affected academic activities to run smoothly.

Recommendation

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

1. Government and security agents should be vigilant on what is happening in the society, especially among the people, to curtail the negative actions.
2. Government and security agents should give special attention to the schools and students of that region with all necessary action to protect them from the physical and psychological attacks of the Boko Haram insurgency.

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Influence of Marketing Research Application on Customer Attraction, Satisfaction and Retention in Small and Medium Scale Enterprises in Borno State, Nigeria

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Abstract: *The research study examined the influence of marketing research application on customer attraction, satisfaction and retention in small and medium scale enterprises in Borno State, Nigeria. The descriptive Survey design was used. The population of the study consisted owners and managers of registered SMEs in Borno State, Nigeria. The total population is 1,458. A sample of 314 was drawn. The main instrument for data collection was a four-point rating scale questionnaire with 21 items. The data collected were analysed using mean and standard deviation to answer the research questions while the independent t-test was used to test the hypotheses. The findings revealed that Marketing research were applied to a moderate extent in Small and Medium scale Enterprises in Borno State. The study further revealed a significant difference in the mean responses of experienced and less-experienced owners and managers of small and medium enterprises on the extent of marketing research application in small and medium scale enterprises. It was concluded that SME in Borno state apply marketing research only to a moderate extent; and the application of marketing research has had moderate positive influence on customers. Based on the findings and conclusion of the study it is recommended among others that since SMEs in Borno state apply marketing research to a moderate extent there is need for owners and managers of SMEs to employ marketing research extensively. This is achievable by organizing seminars, workshops and conferences among themselves.*

Key words: *Marketing Research Application, Customer, Attraction, Satisfaction, & Retention, SMEs.*

Introduction

Reliable data collection and information processing form the bedrock of management decisions in contemporary firms. They also form the basis for all the diagnostic and prognostic efforts of managers. From a marketing stand point, problems can only be anticipated, identified, analyzed and resolved or prevented, if accurate, reliable and relevant information are obtained promptly from both internal and external sources (Ewah & Ekeng, 2009). To actually arrive at useful information, marketing research is important. Busari and Oduwole (2014) opined that marketing research is not a substitute for management decisions; rather it's simply one of many elements that can be used to make management decisions. When conducted in a systematic, analytical, and objective manner, marketing research can reduce uncertainty in decision making and increase the probability and magnitude of success the firm hopes to attain. Thus, the goal of marketing research is to provide the facts and direction which managers of corporate organizations need to take in making important marketing decisions.

Marketing research comprises one of the most important and fascinating facets of marketing. The development of effective marketing strategies is based on the need for an understanding of the consumer and his or her behaviour. However, understanding the consumer can only be achieved through marketing research. According to Ogbadu (2012) marketers who fail to conduct thorough and comprehensive marketing research, run the risk of not achieving their marketing objectives. Attracting and retaining customers can be difficult task, although it is profitable. It is a pointless exercise if there are no customers to retain, hence the need for customer attraction, understanding the role of attraction in a customer commitment decision is an issue that has received little attention in marketing research in SMEs (David 2014). He further stated that, attracting customers by firms means meeting or exceeding customers' needs better than the competitors. Thus, marketing research acts as the link between the consumer and the marketer.

The customers are complex set of human beings that cannot be fully predicted by the marketer except through effective marketing research. In the context of marketing research, customer satisfaction is the way that leads to long-term customer retention because unsatisfied customers have very high switching rate (Qualtrics.Com, 2009). Ibojo (2015) posits that, what every company need are customers, customers, and more customers. This is because customers are the actual agent or stakeholders for determining or judging the success of any product or service. Raja, Muhammad, Naeem, Muhammad, and Sa'eed, (2014) posit that customer satisfaction and retention play a pivotal role in success of every business organization, whether it is meant for a product or a service. They however state that every business needs not only to retain its current customers but also to expand customer base significantly; this is possible only when the target customer is fully satisfied by the company on some parameters. The consumer is a very important element in marketing, hence satisfying him/her is of great concern to the marketer in particular and business organization in general. For marketers to do a proper job in satisfying and retaining customers, a good understanding of customer behavior is imperative.

Marketing plays an important role in company's strategy. Unfortunately, many SMEs tend to overlook the importance of Marketing Research. SMEs in Nigeria have not been able to add expected value to the economy due to many factors including marketers' little engagement in marketing research. Ogbadu (2012) observes that when we talk of marketing research in Nigeria, fingers are always pointed at big organisations and multinational establishments. Small and Medium Enterprises in Nigeria fail to understand that marketing research is all-embracing and organization-wide. Often times, SMEs make decisions with limited information and with inadequate facts. Small and Medium Scale Enterprise owners/managers often have a care-free attitude towards marketing research which in most cases affects their capacity to attract and satisfy their customers. This is based on the erroneous assumption that many Small and Medium Enterprises do not conduct marketing research, and even the few SMEs that conduct marketing research hardly apply findings of the research. This could be attributed to the capital intensity of marketing research. Unfortunately, many Small and Medium Enterprises cannot compete favorably in today's market because of their inability to commit to the application of marketing research (Ebitu, 2016). Therefore, one is inclined to ask, to what extent are SMEs conducting marketing research in the bid to attract customers. Are the owners of SMEs properly equipped with the skills needed for marketing research application? How do Small and Medium Scale Enterprises seek to attract and satisfy customers? These and other questions prompted the researcher to conduct a study on the influence of marketing research application on customer attraction, satisfaction and retention in Small and Medium Scale Enterprises in Borno State.

The specifically the aim to achieve the following objectives to:

(i) Examine the extent of application of marketing research in Small and Medium Scale Enterprises in Borno State.

(ii) Determine the influence of marketing research application on customer attraction in Small and Medium Scale Enterprises in Borno State.

(iii) Find out the influence of marketing research application on customer satisfaction in Small and Medium Scale Enterprises in Borno State.

(iv) Examine the influence of marketing Research application on Customer Retention in Small and Medium Scale Enterprises in Borno State.

Literature Review

Concept of Small and Medium Scale Enterprise

In recent times, the small and medium scale enterprises sector is considered to be the back bone of modern-day economy. Historical facts show that prior to the 19th centaury, cottage industries, mostly small and medium scale businesses controlled the economy of Europe (Opafunso & Adepoju, 2014 cited in Utoware & Agbonaye, 2017). They advanced that, the twin oil shocks during the 1970s undermined the mass production model which triggered unexpected reappraisal of the role and importance of small and medium enterprises in global economy. While the importance of Small and medium enterprises has not been in doubt, unfortunately classifying business into large and medium scale is subjective and premised on different value judgment. Such classification has followed different criteria such as employment, sales or investment for defining SMEs. According to extant literature the definition varies in different economies but the underlying concept is the same Abor and Quartey (2010). He further stated that, countries such as USA, Britain and Canada small scale business is defined in terms of annual turnover. In Britain for example small scale business is conceive as that industry with annual turnover of two million pounds and less with fewer than 200 paid employees. In the same vein, in the case of Japan it is conceptualized as type of industry, paid up capital number and of employee. Consequently, small and medium scale enterprises are defined as those manufacturing with 100 million yen paid up capital 300 employees. Those in whole sale trade 300 million paid up capital 100 employees while those of in retail trade with 100 million paid up capital with 50 employees (Paul, 2017).

In Nigeria, the introduction of SME can be traced back to the year 1945 when Essential Paper No. 24 of 1945 on" A Ten-year plan of development and welfare of Nigeria 1946 was presented" (Opafunso & Adepoju, 2014). A Small and Medium Scale Enterprise was considered an all-time necessity at the beginning, which has gained prominence today and is expected to increase its importance in the future (Basil, 2005). Furthermore, the concept of SMEs varies with culture and peculiar circumstances of the person attempting. The definitions in use depend on the purposes and policies which govern the SMEs sector in a particular country. However, the three parameters that are generally applied by most countries, singly or in combination are capital investment, volume of production and turnover of business (Nwaiwu & Opusunju, 2017). To support this assertion Etuk, Etuk and Baghebo (2014) defined SMEs using certain criteria including, turnover, and number of employees, profit, capital employed, available finance, market share, and relative firm size within the industry.

Marketing Research and Customer Attraction

Marketing-orientated companies attempt to create customer value in order to attract and retain customers. Their aim is to deliver superior value to their target customers. In doing so, they implement the Marketing Research results by meeting and exceeding customer needs better than the competition. (David 1995 in Mattsoon 2009). Attracting and retaining customers can be a difficult task. Customers often face a bewildering array of products and services from which to choose. A customer buys from the firm that offers the highest customer perceived value – the customer's evaluation of the difference between all the benefits and all the costs of a marketing offer to those competing offers (Armstrong and Kotler 2005). Similarly, Chen and Hitt (2002) in Berg (2015) posit that, due to their significance to numerous industries including, technology, entertainment, and communications, the dynamics of network markets have received considerable attention in the past two decades. Many are emerging companies and small businesses, especially those focused on business-to-consumer (B2C) e-commerce, in an aggressive phase of recruiting new customers in what analysts have called a "land grab" More so, Mattsoon (2009) posit that, the expectation is that these early investments in customer acquisition will result in a long-term stream of profits from loyal customers, which will offset these costs. Essential to this strategy is that customers experience some form of "lock-in" or switching costs to prevent them from defecting to another provider. Though customer retention is profitable, it is a pointless exercise if there are no customers to retain (McDonald, Christopher, Knox, and Payne, (2001) in David (2014). Hence, the need for customer attraction, understanding the role of attraction in a customer commitment decision is the key issue that has received little attention in Marketing Research in SMEs.

Marketing Research and Customer Satisfaction

Customers do not conduct Marketing Research activities on their own. However, the benefits to all research activities are available to consumers. In fact, the purpose of Marketing Research is to study/understand the needs, expectations, problems, etc. of consumers and to give maximum possible convenience and satisfaction to them. This suggests that customers secure the maximum benefits of research activities indirectly as all research activities are basically for the benefit and convenience of customers (Starbucks, 2008). Similarly, Moiseenko (2015) posits that, after identifying competitors, the next step is to identify customers. Not only who they are, but what they want, need, what they will buy and how much they will pay for the product. It is important to count customers. How many of them are out there who will pay for your services or product? You can help your effort greatly by summarizing your list of different customer bases, how much they are willing to pay for service, and how frequently they need it. Customer satisfaction in company's marketing activities is strategic and satisfying the customers becomes the starting points to defining business objectives.

According to Youjae (2010) in Ebuti (2014), studies have revealed that marketing research have correlation with customers' satisfaction. However, the direction of the satisfaction depends on how effective the firm has conducted its researches. Customer satisfaction is the overall essence of the impression about the supplier by the customers. This impression which a customer makes regarding supplier is the sum total of all the processes the customer goes through communicating the supplier before doing any marketing, product manufacturing, quality of products and services and responses to customers' complaints and queries to post delivery services. It therefore necessary on the marketing firms to conduct extensive, in-depth, relevant and careful analysis so as attract the customers rather than scare them. According to Zaborek, (2015) a well developed and implemented marketing research may result in additional revenue to the organization. If this has to be, it must create customer satisfaction. Therefore, the extent of customer satisfaction for any product or service depends on the proper implementation of research findings by managers in the organization.

Marketing Research and Customer Retention

A business that wants to succeed in today's global competitive market, where customers are empowered and brand loyalty erosion is increasing gather information on its market to provide excellent real-time customer service. This requires a more complex approach. Organisations need to investigate custom needs, they have to build relationships with both existing and potential customers, and they will have to satisfy their customers' needs (Rootman 2006 cited in Lambard 2011). These are made possible based on the available information which is obtainable through marketing research. ICT has led to intensified price competition, as it increases customer ability to gather information about variety of products and prices. They are able to research products and their prices, product quality and other variable that may induce them to buy. These and other factors have infused competition into the market. By implication, marketers have to device ways of attracting and retaining customers. More so, customer retention has become an area of study if marketers want to remain on stage Lambard (2011).

Organisations become more aware of the importance of marketing research and its potential to help them acquire new customers, retain existing ones and maximize their lifetime value. Through marketing research Barabba and Gerald (1991) in Osongo (2016) opine that having good knowledge about your customers gives marketer opportunity to serve them appropriately and impliedly maintain continuous patronage. Equally, understanding your existing customers - why do customers choose your product over competitors? What do they value? Is it service, product quality or the prestige associated with consuming your product/service? Who influences their buying decision? What magazines do they read? What websites do they visit? What do they enjoy doing? Marketers need to address these questions holistic if at all they want to take competitive advantage and maintain its market share. The context and philosophy of a Business can lead to the manner in which firms retain their customers and the firms employ the use of some specific tactics once it knows who their customers are (Zeithalm and Bitner 1996 cited in Osongo 2016).

Through marketing research marketers are able to understand their customers by their needs. This will lead the customer to perceive that the organisation is concerned with the customer's needs, and this in turn may lead to greater satisfaction towards the organisation. When the customer has additional experiences with the organisation in which the customer's needs were satisfied, the customer may develop a sense of loyalty to the organisation (Egan 2004 in Humman & Oleno, 2014).

Practical Application of Marketing Research by Owners/Managers of SMEs in Nigeria

According to Ogbadu (2012) the slow pace of research and indeed marketing research among Small and Medium Enterprises in Nigeria is agonizing. There is need for practical application of Marketing Research by Small and Medium Enterprises in Nigeria. The need to be equipped with proper information to ensure decision making in business calls for gathering and analyzing data. Marketing Research, therefore, is needed by SMEs to generate information for decision making. Also, the competitive strength in business organisations put pressure on companies to research into finding the best way to gain competitive advantage. It will enhance more profits and expand business. Research leads to systematic gathering and storage of information which later could be used by the organisation which is basically to plan and make decision. Marketing Research, not only provide SMEs with the necessary decision-making tools but also help them a mass substantial data that may be used in many ways (Jaworki & Kohli, 1995 as cited in Ogbadu, 2012). It was stated earlier that, practical application of Marketing Research is not yet common among Small and Medium Enterprises in Nigeria. That is, most Marketing Research programme in Nigeria is being undertaken by the large-scale business in the country instance multi – national corporations, banks, among others. And the level of articulation of marketing research among small and medium enterprises in Nigeria is just very poor and quite unlike in the U.S.; Japan and Europe (Idris, 2006, Elegbe, 2008 cited in

Abor, & Quartey, 2010). These regions of the world had or have a well-articulated and widespread marketing research programme and practices.

Though, small and medium enterprises may not be in position to conduct extensive, in-depth and highly relevant data that are adequate enough to provide necessary information for decision making. Ayuba and Kazeem (2015) posit that, Small scale survey and focus groups are low cost ways to gather information from potential and libraries or on the internet and can be easily accessed by a small business owner.

Related Empirical review

Ebitu, Ufot, and Olom (2015), in a descriptive survey study based on qualitative and quantitative data carried out on relationship between marketing problems and performance of selected Small and Medium Scale Enterprises in southern senatorial district of Cross River Nigeria, showed that out of the sample of 150 owners and managers of SMEs, which reveals that a significant relationship between the marketing problems experienced by SMEs and increase in their profit margin and sales volume.

Similarly, Dike (2015) conducted a descriptive survey study on Impact of Marketing Research on Business Management in Nigeria. Stratified, simple random, convenience, and judgmental sampling procedures were adopted and with a sample size of 390 was determined using Yamane (1967) formula (Eboh, 2009). The findings revealed the extent of the effects of marketing research at 18.08 percent had non-significant positive effects on business management in Nigeria. This implied that only eighteen percent of marketing research data was utilized in business decision making while about eighty-two percent languished unused in the marketing practitioners' shelves, confirming the statistical insignificance of the impact. The study concludes that, the relevance of marketing research in the ever-increasing competitive, dynamic marketing and academic environment, defines its broad prospects in Nigeria. Marketing research findings should reflect the marketing practitioners' language or business realities.

Ibojo (2015) carried out another analysis on the impact of customer satisfaction on customer retention in Oyo, Nigeria. The work employed survey design and data were collected from both primary and secondary sources. The primary data included a structured questionnaire used to elicit information from the target respondents who were customers of the reputable bank in Oyo while the secondary data encompass the use of related materials, journals and periodicals. The findings showed the value of 0.717 which reveals that customer satisfaction independently accounts for 71.7% of the variation in customer retention. The statistics of 41.173 revealed that the model is statistically significant at 0.05 significant levels. It was concluded that the effective satisfaction of customers will give room for customer retention. More so, there was a significant relationship between customer satisfaction and customer retention.

Ebitu (2015) employed survey approach to study marketing strategies and consumers' satisfaction of cement products in Calabar, Nigeria with a sample of 182 using primary and secondary sources to obtain data for statistical analysis. The results of the analysis revealed that United Cement Company marketing strategies have significant positive impact on cement consumers' satisfaction in Calabar. It was therefore recommended that UniCem should retain its current marketing strategies in Calabar because they have positive influences on consumers' satisfaction.

Ayuba, and Kazeem (2015) conducted a study titled: The role of marketing research on the performance of business organization in some selected businesses in federal capital territory Abuja. The study adopted the descriptive survey design with a sample size of 250. The result of the study showed that marketing research process plays a significant role in the performance of business organizations which means that there is a positive relationship between marketing research and the performance of business organizations. This reveals that the impact of marketing research as a variable tool for enhancing business activities in organizations.

Methodology

The study adopted descriptive survey research design. A total sample of 314 respondents was selected from a total population of 1,458 respondents; multi-stage sampling techniques were used to select 314 owners and managers of SMEs as respondents in the study. The sample was drawn proportionately from the three senatorial zones: Borno north, central and south respectively. Stratified random sampling technique was employed to divide the sample into strata (urban-189 and rural-125); these towns were selected based on accessibility, size and the level of commercial activities. Simple random sampling was employed to select respondents from each zone. This was done by 'hat drawn' method where pieces of paper containing "Yes" and "No" were wrapped. The instrument used was the Influence of Marketing Research Application on Customer Attraction, Satisfaction and Retention in Small and Medium Scale Enterprises Questionnaire (IMRACASRSMEQ). The questionnaire consisted of 11 items based on the purposes of the study and the research questions. The instrument was face-validated by three experts from the Department of Business and Entrepreneurship Education, Kwara State University, Malete. Cronbach Alpha was used to determine the reliability of the instrument which yielded a reliability coefficient of 0.76. Each of the items was assigned four response options of High Extent (HE-4 points), Moderate Extent (ME-3 points), Low Extent (LE-2 points) and No Extent (NE-1 point). The data collected were analysed using the mean and standard deviation. The mean was used to answer the research questions while the standard deviation was used to determine the closeness or otherwise of the responses from the mean.

Presentation of results

A total of three hundred and fourteen (314) questionnaires were distributed, however only two hundred and forty-four (244) were correctly filled and returned, giving a response rate of seventy-eight-point two (78.2) percent, which was considered to be adequate.

Table 1: Mean and standard deviation of responses on the extent to which Marketing Research is applied in Small and Medium Scale Enterprises

S/N	**Item Statements**	$\overline{X}$	SD	**Remark**
1.	Small and Medium Scale Enterprises utilize Marketing Research to gain competitive advantage.	3.34	0.82	Moderate Extent
2.	I apply Marketing Research to identifying potential customers.	2.72	0.74	Moderate Extent
3.	Small and Medium Scale Enterprises use Marketing Research to get ideas for development of new product.	3.06	0.95	Moderate Extent
4.	Owners/managers of SMEs apply Marketing Research in identifying customers' preference of firm's products/services.	2.73	1.15	Moderate Extent
5.	Owners/managers utilize Marketing Research in maximizing customers' lifetime value.	2.91	0.88	Moderate Extent
6.	Small and Medium Scale Enterprises apply Marketing Research to get good information about customers, thereby lead to customers' satisfaction.	3.03	0.97	Moderate Extent
7.	Owners/managers of SMEs use Marketing Research to bring about the growth of market share.	2.85	0.69	Moderate Extent
8.	I apply Marketing Research to enhance the understanding of factors that influences consumers buying behavior.	3.39	0.85	Moderate Extent
9.	Small and Medium Scale Enterprises utilize Marketing Research to establish and maintain long-term customer relationships.	3.24	0.84	Moderate Extent
10.	Owners of SMEs use Marketing Research to identify unsatisfied customers and conversely get them satisfied.	3.20	0.94	Moderate Extent
11	My firm applies Marketing Research to enhance the ability to change brand name in order to attract customers.	2.18	1.12	Low Extent
Weighted average		**2.97**	**0.90**	**Moderate Extent**

Source: Field Survey, 2018

Analysis of data in Table 1 reveals that Small and Medium Scale Enterprises utilize marketing research to gain competitive advantage to moderate extent (mean = 3.34), the same way the respondents indicated that they apply marketing research to moderate extent to identify potential customers (mean = 2.72). In addition, the respondents indicated that SMEs use marketing research to get ideas for development of new product to moderate extent (mean = 3.06), also Owners/managers of SMEs apply marketing research to moderate extent in identifying customers' preference of firm's products/services based on the responses of the respondents (mean = 2.73). The respondents indicated that owners/managers utilize marketing research in maximizing customers' lifetime value in moderate extent (mean = 2.91), same way SMEs apply marketing research to moderate extent to get good information about customers, thereby lead to customers' satisfaction (mean = 3.03). The respondents also stated that their firms applied marketing research to low extent to enhance the ability to change brand name in order to attract customers (mean = 2.18). All the items have low standard deviation values which signifies variability of response are below the fixed value of 1.96. Similarly, the respondents unanimously indicated moderate extent for all the constructs except for item 11 where they indicated low extent. This means that all the constructs are applied in SMEs. This implied that marketing research are applied to a moderate extent in SMEs in Borno State (mean = 2.97, SD = 0.90).

Research Question 2: To what extent does marketing research application influence Customer Attraction in Small and Medium Scale Enterprises in Borno State?

Table 2: Mean and standard deviation of responses on the extent marketing research application influence customer attraction in Small and Medium Scale Enterprises

S/N	Item Statements	$\bar{X}$	SD	Remark
1.	Small and medium scale enterprises owners/managers apply Marketing research to enable create customer value in order to attract customers.	3.44	0.74	Moderate Extent
2.	Small and medium scale enterprises use Marketing Research to evolve in consumers-oriented promotion techniques that best convince customers' patronage.	3.37	0.84	Moderate Extent
3.	Managers of small and medium scale enterprises utilize Marketing Research to change brand name thereby attracting customers.	2.26	1.07	Low Extent
4.	Small and medium scale enterprises apply Marketing Research to design and test appropriate packages of company's products and make packaging as attractive as possible.	2.72	1.01	Moderate Extent
5.	Owners/managers of SMEs apply Marketing Research to aids the provision of wide variety of goods for the convenience of consumers.	3.26	0.97	Moderate Extent
6.	SMEs owners/managers utilize Marketing Research to provide a dynamic network markets that give easy access to customers and customers to firms' products/services.	3.45	0.78	Moderate Extent

7.	SMEs use Marketing Research to provide good understanding of customers thereby providing them with goods/services based on their requirements.	3.43	0.72	Moderate Extent
8.	Owners/managers of SMEs utilize Marketing Research to discover potential customers, investigate customers' needs, and build relationships with potential customers.	3.43	0.82	Moderate Extent
9.	Small and medium scale enterprises apply Marketing Research to contrasts pre-purchase expectation of their customers there by attracting more customers.	3.30	0.90	Moderate Extent
Weighted average		**3.18**	**0.87**	**Moderate Extent**

Source: Field Survey, 2018

Analysis of data in Table 2 reveals that small and medium scale enterprises owners/managers apply marketing research to enable them create customer value in order to attract customers to moderate extent (mean = 3.44). Same way the respondents indicated that small and medium scale enterprises use marketing research to evolve in consumers-oriented promotion techniques that best convince customers' patronage to moderate extent (mean = 3.37). In addition, the respondents indicated that small and medium scale enterprises apply marketing research to design and test appropriate packages of company's products and make packaging as attractive as possible to moderate extent (mean = 2.72). In addition, owners/managers of SMEs apply marketing research to aid the provision of wide variety of goods for the convenience of consumers to moderate extent based on the responses of the respondents (mean = 3.26). The respondents indicated that SMEs owners/managers utilize marketing research to provide a dynamic network markets that give easy access to customers and customers to firms' products/services to moderate extent (mean = 3.45), same way SMEs use marketing research to provide good understanding of customers thereby providing them with goods/services based on their requirements to moderate extent (mean = 3.43). All the items have low standard deviation values which mean that the respondents' responses are not widely spread from the mean. Similarly, the respondents unanimously indicated moderate extent for all the constructs except for Item 3 where they indicated low extent. This means that virtually all the constructs influence customer attraction in SMEs. This implied that marketing research application influences customer attraction to moderate extent in SMEs in Borno State (mean = 3.18, SD = 0.87).

Test of Hypothesis

The null hypothesis of the study was tested using independent t-test. The null hypothesis was tested at 0.05 level of significance. The summary of the test of hypothesis was presented in Tables 3:

H_{01}: There is no significant difference in the mean responses of experienced and less-experienced owners and managers of Small and Medium Enterprises on the extent of Marketing Research Application in SMEs in Borno State.

Table 3: Summary of t-test of the difference between the mean responses of experienced and less-experienced respondents on the extent of marketing research application in small and medium scale enterprises

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Experienced	168	2.70	0.41	17.070	299	0.000	Rejected
LessExperienced	133	3.31	0.08				

Source: Field Survey, 2018 P<0.05

The data in Table 2 reveals that there are 168 experienced and 133 less experienced respondents. This shows that there was moderate extent of marketing research application in SMEs ($\bar{x}$ = 2.70; SD = 0.41) and ($\bar{x}$ = 3.31; SD = 0.08).The Table reveals that there was significant difference in the mean responses of experienced and less-experienced owners/managers of small and medium enterprises on the extent of marketing research application in small and medium scale enterprises (t_{299} = 17.070, P<0.05). Therefore, the null hypothesis, one was rejected. This implies that experienced and less experienced owners/managers of SMEs differ significantly in their responses regarding the extent of marketing research application.

Table 4: Summary of t-test of the difference between the mean scores of respondents in urban and rural areas regarding the influence of marketing research application on customer attraction in small and medium scale enterprises

Group	N	Mean	SD	t-cal	Df	p-value	Decision
Urban	186	3.19	0.35	-0.114	299	0.885	Not Rejected
Rural	115	3.18	0.19				

Source: Field Survey, 2018 P>0.05

The data in Table 4 reveals that there are 186 respondents from urban areas and 115 respondents from rural areas. The urban and rural respondents' responses show that marketing research influenced customer attraction in SMEs to a moderate extent ($\bar{x}$ = 3.19; SD = 0.35) and ($\bar{x}$ = 3.18; SD = 0.19). Their responses are close to the mean as the standard deviations are very low. The table reveals that there was no significant difference in mean score of respondents in urban and rural areas regarding the influence of marketing research on customer attraction in SMEs (t_{299} = -0.114, P>0.05). Therefore, the second null hypothesis was not rejected. This implies that both urban and rural respondents did not differ in their responses regarding the influence of marketing research on customer attraction in SMEs. Though there was a slight difference between their mean responses with urban respondents having higher mean responses, but the difference was not statistically significant (mean difference = 0.01).

Discussion of Findings

Based on the findings, the null hypothesis one (H_{01}) reveals that SMEs moderately apply marketing research (mean = 2.97, SD = 0.90). The finding further reveals that there was significant difference in the mean responses of experienced and less-experienced owners/managers of small and medium enterprises on the extent of marketing research application in small and medium scale enterprises (t_{299} = 17.070, P<0.05). The null hypothesis was rejected.

Their responses show that experienced owners/managers rated the extent of marketing research application higher than that of less experience SMEs did. This finding was found to be in agreement with the opinion of Nduka, Okocha and Chris-Nnamdi (2017) who claim that successful companies fulfill marketing research better than less successful companies. In a similar vein, Osongo (2011) asserts that the use of marketing research is not only related with company success by satisfying and retaining customers, but also issue of marketing such as innovation and product design, success of new products, export performance, product decisions among others.

Conclusion

After statistical analysis of the data, the researcher arrived at the following conclusions: SMEs in Borno State apply marketing research only to a moderate extent; and that application of marketing research has had moderate positive influence on customer attraction. This implies that marketing research application has had the potential to play a significant role in the success of SMEs. This indicates that the success of small and medium scale enterprises depends on the proper implementation of marketing research by their owners/managers which in most cases positively affects their capacity to satisfy and retain customers. This further has implications on improved citizens' standard of living and the nation's general growth and development.

Recommendations

Based on the findings obtained in the study and conclusion drawn, the researcher made the following recommendations:

1. Since SMEs in Borno state apply marketing research to a moderate extent there is need for owners/managers to employ marketing research extensively. This is achievable by organizing seminars, workshops and conferences among themselves.
2. SMEs in Borno state should learn to use marketing research to attract customers. A study of demographic characteristics of potential customers will enable SMEs owners and managers to identify instrument of attracting customer to their products; through different form of advertising.
3. SMEs owners/managers should explore ways by which they can gain easy access to loans which can enable them adequately finance marketing research activities as, this the only way that they can be able to survive and expand their market share in competitive market.

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Roles of Peripheral Community Tree Planting as a Sustainable Approach for Urban Environmental Protection in Jiddari Polo Area of Maiduguri

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Abstract: *This scholarly research title has identified problems that the communities and public in urban fringes of Maiduguri are not aware of the needs for tree planting and management. These have affected the environment and exposing the entire ecosystem to hazards. Therefore, this research has used GIS technics and PAR model as methods to find data for the research. The major findings are GIS as tool have the capability of enhancing tree planting and its maintenance in the urban peripheral areas and that public participation will instill in the minds of the caregivers the sense of ownership of the plants which reduces the burden of doing same by the government. The authorities that have the roles of creating public awareness and education are not doing much in that direction. Therefore the research designed an objective approach such as to assess the tree planting needs in the study area and to examine the roles of peripheral communities in tree planting in the study area. The major recommendations of the research are that government at all levels should involve the local communities in decision makings concerning tree planting and their maintenance, and to put in place the process of tree planting, it should start with broad based analysis of all the environmental factor that will have effect on the growth of the trees*

Key words: *Peripheral Community, Tree Planting, Sustainable Approach and Urban Environmental Protection*

Introduction

Tree planting or forestation relates to the deliberate intervention by man in planting trees to improve the quality of natural environment. In Sahara and fringes of the savanna areas, tree planting have become a custom and administrative function of government both at the state and local levels. There are also efforts by individuals in planting trees; however these efforts are not sufficient to remediate the challenges posed by global warming. Government

through policies and programmes remains the major stakeholder that controls and manages trees to sustain soil moisture needed to abate desertification in their areas.
The motives of tree planting in those areas are generally to sustain and grow the socio economic wellbeing of the people, protect the environment from excruciating environmental devastation and secure environments from loss of biodiversity. Tree planting induces soil quality to support wide range species of plants. Different trees are used for different purpose in different places; therefore the importance of tree planting cannot be over emphasized (Jared, 2015)

Trees are familiar sight to many people, however only few of us paused to consider how they came to be there, how they are being managed and what benefit they bestow on us. Choosing planting sites, selecting trees and ensuring their survival is critical to the health of the urban dwellers, as without considering these factors haphazard tree planting will hamper on the wellbeing of the people

In the context of urban planning, tree planting is viewed as process not an activity. It is a process because it involves the decision on the goals, identification of problems, site selection, plant selection, data collection and analysis, planting layout design and management process. All these processes are set up and put in place before embarking on the implementation. However, the widely held view of an urban settlement is of an environment which has been heavily modified by man to the extent that some living organisms are eliminated while others will invade, colonize and multiply.

The above scenario does not favor trees in our cities. Therefore to improve the relationship between man and trees around him, Heidi and Jill (2010) developed an environmental planning model call Participatory Action Research (PAR) in which they envisaged a more equal partnership between tree users and government. This model is distinct from the traditional model where trees planted on public land are owned by government. So in contrast, PAR provides the user manager the potential benefit of more appropriate control of the trees. This way the tree owner will have an intimate knowledge of their trees and the ecosystem. The burden placed by this model on the community permits them to acquire broad range of knowledge on the socioeconomic as well as technical information on the trees planted that are entrusted in their care. This research proposal seeks to apply this model (PAR) on selected suburb of Maiduguri Town. This research seeks to deal with the following problems

1. Inadequate awareness, the communities and public in urban fringes of Maiduguri are not aware of the needs for tree planting and management. These have affected the environment and exposing the entire ecosystem to hazards. The authorities that have the roles of creating public awareness and education are not doing much in that direction.
2. Non inclusiveness and neglect of community members in participatory planning and management of tree planting, these neglect have created gap between the communities and government in terms of control and protection of the trees planted.
3. Weak legislation and regulatory institutions criminalizing tree felling have for very long time allowed property developers and commercial loggers to remove an

astonishing number trees (buffers) around urban fringes without appropriate plan of replacing them, thereby exposing the city to devastation of windstorm.

4. Modern techniques such as Geographic Information System (GIS) as a guide for physical development and which also has the central role of providing accurate information of all facilities and utilities including trees and landscaping have been neglected allowing property developers to construct without control and guidance.

The aim of this research is to examine the roles of peripheral community tree planting as a sustainable approach for urban environmental protection in Jiddari Polo, Maiduguri with view to identify problem and propose physical planning solution.

The goal stated above can be achieved through the following objectives:-

1. To identify major streets in the study area using GIS
2. To assess the tree planting needs in the study area
3. To examine the roles of peripheral communities in tree planting in the study area
4. To determine critical factors required in the process of tree planting in the study area
5. To propose physical planning solution.

Conceptual Clarifications

Tree Planting

Over the past decade, a significant and rapid change has taken place in the urban forestry sector. These changes have contributed immensely to the evolution in the concept of tree planting. Urban tree planting is still a nascent development and it appears to be gaining concern. In the context of this research, it refers to an Action Model that has been adopted involving the work of professionals in a variety of sectors ranging from Building Engineering, Architects, Town Planning, Forestry, Health etc. that have served both the needs of natural resource users as well as those of administrative agencies seeking to devolve the responsibility of managing natural resources to users (Mike and Anthony, 2015)

Therefore the concept of urban tree planting should be viewed as the process by which the growth, sitting, planning and control of trees planted are evolved to achieve the purpose within the urban environment. However, Different associations of organisms occupy different intra-urban ecosystems, which fuse together in a network of paved or roofed surface and the vegetated surface.

In tree planting the appearance of a planting arrangement must be imagined at its beginning to its maturity, in winter as well as summer. At planting, trees should be set far enough apart from each other and from structures to prevent interference unless a distorted shape or a solid mass is desired. Large forest tree for example, if meant to come to full size, most be 54 – 60f apart and 20f from building. Trees take time to mature; therefore final effect may not be seen in a short time. What seems to be pleasant at the beginning may later be desperate overcrowding.

For immediate effect, mature specimens may be put in but this is an expensive practice to be reserved for key places. Another solution is to use succession planting, in which quick growing plants and slow growing plants species are planted together, or plants may initially be put in at close spacing.

Trees in Cities

Planting of trees, shrubs and flowers improves the beauty of city. Plants are provided for different needs in different location. Trees provide shade that reduces the need for air conditioning and make travel more pleasant in hot weather.

Susan (2017) believes that in parks, trees provide places for quiet contemplation, trees and shrubs can block some of the city sound, and the complex shape and structures create a sense of shade. Plants also provides habitat for wild life such as birds which many urban residents considers pleasant addition to a city.

The use of trees in cities has expanded since the time of European renaissance. In earlier times trees and shrubs are set apart in gardens where they are viewed as scenery, but not experienced as part of ordinary activities. Street trees were first used in Europe in the eighteenth century, among the first tree – lined streets were the rue-de Ravioli in Paris and Bloomsbury square in London. In many cities trees were now considered as essential element of urban usual scene, and major cities have large planting programs. For example, in New York City 11,000 trees are planted every year, in Vancouver, Canada 4,000 trees are planted per year. Today, there is growing use of trees to soften the effect of climate near houses. In colder climate, rows of conifers planted to the north of the house can protect the house from winter winds. Deciduous trees to the south can provide shade in the summer, reducing requirements for air conditioning and yet allow sunlight to warm the house in the winter. Successful urban tree planting requires:

1. ***Landscape Consideration for Tree Planting***

Trees may be planted by land owners (individual) or by community through public participation or by government through special agencies. By whichever means, consideration have to be made to the proximity of buildings and other structures. Trees in close proximity to building or structure may cause structural damages either directly or indirectly. It is also important to note that damages by trees are principally caused by neglect to the factors above. Consideration should also be made to the architecture of the buildings; does the trees form and color complement the surrounding built environment? We therefore seek advice on whether a tree will obscure the features (Susan 2017). In the broader context of landscaping, trees are used in reducing the wider difference between the soft and hard landscaping features. This is used in most landscape urban areas to promote the scenic quality and promotes aesthetics.

Another vital point of consideration in landscape is the possible nuisance a tree might cause in particular situation e.g. ultimate size may cause problems of shade or knock buildings and windows. Therefore planting trees under overhead services like electric cable, planes wire, for as they grew, trees will require constant pruning in order to avert nuisance. The same is applied to underground services and the root system of trees to be planted. Trees planted in urban streets should not obscure any road sight lines or road signs, for instance trees at road junction and bends can prove hazardous to road users and pedestrians.

2. Plant Arrangement

Trees of different species can be sited to create a general effect or to contrast with one another. Trees of similar form but dramatically different texture may be juxtaposed, or shapes may be contrasted. For example, an angular and dynamic tree planted beside a rounded space, or upright, recumbent and prostrate trees beside a tall structure. A delicate fern may bring out the character of massive rock out crop. Since it is easier to predict the texture of trees than its particular form and since that texture does not vary from different points of view as much as does the individual shape, it is advisable to dispose plants principally according to their texture and according to the masses that will be produced by large number of plants (Jared, 2015).

In the mixed grouping, only two or three species are made and they are not intermixed evenly, but located in clusters that thin out into clusters of another type. The plant list is consciously limited to a few dominant and subordinate species, all related in their ecology and texture. However, it is unwise to plant only a single species, since a fatal disease may snuff it out e.g. the Elm problem in U.S.A

3. Choice of Species

According to Susan (2017) "once an appropriate site has been selected, the next step is to choose the correct tree species for planting. Mistake in planting a tree are long lasting, expensive to accommodate and difficult to rectify". The prime objectives when considering a suitable tree for a site are to allow adequate space both above and below ground, (i.e. height and spread of canopy and roots) and to provide for its future maintenance requirements (particularly post and after care). Time spent in considering what is required and what the planted area will look like in 20 – 100 years is very important. Frequently one well-placed tree which can grow and break up above the rooftops will provide more visual benefit than several scattered small ones. The idea is to plant a tree that will be able to grow to full maturity with little or no surgery. Remember any pruning cuts made to trees are potentially harmful as they expose the trees living tissue to decay.

To avoid exposing whole populations of trees to epidemics, diseases and pests, plant a variety of unrelated species, obviously there will always be a specific time and place for formal uniform avenues of identical tree.

Planting Framework

If land can be held in reserve (future development) it might be possible to pre plant lines and masses of trees in a pattern suitable for future development. The initial investment would be small and when development occurred, it would benefit from a mature plant setting. Where this has happen accidentally, as in the resumption of development in abandoned land, the effect has often been quite and handsome.

In any case, tree planting is not a frill to be left to the future. The main framework should be completed before the area is occupied. Tree planting and landscaping are green stuffing to be packed between buildings, or a series of small settings for individual structures. It must be conceived as a total pattern, continued throughout the site. Lines of tall trees, visible from distance, may mark major axis in the plan, masses may define major spaces and species texture may be used for important areas (Jonathan, 2017).

It has been customary, in housing developments, to plant on the public areas, leaving private plots to be landscaped by the tenant. Along the streets, we use a single solution with monotonous regularity. The double line of street trees is mostly regarded to the single line. Planted avenue can be handsome, particularly when it leads to some important destination. The following factors are crucial in planting framework

1. ***Access to Land and Tree Usufruct***

Wide range of possibilities exists in urban areas of many developing countries with regard to people access to land and usufruct of trees growing on it. Situations vary from open access and poor control over usufruct to privately own and strong control over usufruct. Many trees in urban areas are effectively open access resources, used by all owned by few. This is particularly true of those on public land such as roadsides and derelict plots. Vandalism or excessive harvesting may be a particular problem in such circumstances. Trees planted through community initiatives may be managed as a common property or resources, particularly if it is located on land strongly associated with community ownership such as around a school or mosque or church. In some circumstances, specific usufruct right may be defined and allocated, e.g. the right to harvest fruit from trees grown in parks (Sofie, 2012)

2. ***Spatial Model of Planting***

A simple model of tree planting zones in urban areas of developing countries was provided by McPherson and Peper (2012) although they used it to describe urban farming systems. The model categorized urban settlements into three (3) broad spatial categories as follows:

1) Core – the city centre
2) Sub-core – areas outside the core zone
3) Periphery – urban fringe and suburb

The categorization is used for indicating where trees may be found growing in towns and cities and where there may be unexploited potential for their cultivation. It remains a fact that in most urban environments, space is precious and subject to many competing land pressures. Much of the challenges of urban forestry lie in making optimal use of the limited area available for urban trees.

Use of GIS in Tree Planting

It has been proven that GIS is one of the veritable tools that can be used in tree planting and management. This can be done mainly by using ArcGIS 9.2 software. GIS put together common database operation such as query and analysis with the unique visualization and geographic analysis benefits from maps. These abilities make GIS chosen from other information system and make it also valuable in estimating the cost of maintenance, determining the location precisely and planning strategic for the landscape tree management of the study area. It is clear that GIS can be used as an application in landscape architecture for monitoring the management system. According to Masbiha and Noriah (2012) GIS integrate most common database operation such as query and analysis with visualization and geographic analysis. These abilities distinguished GIS from other information system and make it valuable for explaining event, predicting outcomes, and planning the management system of park area. The data acquisition for this research can be more detail in future works to provide more accurate information for the analysis. The use of more detailed method such as the Spatial Multi-Criteria Decision Analysis (MCDA) can help in decision making and evaluation. By using this method, the different classifications of the site area can be rank in the order of the preference. It was preferred that every local authority would apply this system for the ease of use to manage their park efficiently. This suggestion would impact up on overall trees management system of the park and can be extended to manage all elements that need to be maintained in the park. This system can give evidence to the maintenance work that have been done on the site by updating it in the system and of course, the site inspections still need to be done. Local authority and private garden managers should be aware of this finding and use this opportunity in enhancing their management system from the use of advanced technology.

Participatory Action Research Approach in Tree Planting

Participatory Action Research (PAR) is considered a subset of Action Research, which is the "systematic collection and analysis of data for the purpose of taking action and making change" by generating practical knowledge. Action research discourse includes myriad of terms, such as: participatory action research, participatory research, community-based participatory research, and other forms of participative inquiry, which may seem ambiguous for novice researchers intending to conduct action research, the purpose of all action research is to impart social change, with a specific action (or actions) as the ultimate goal.

Heidi and Jill (2010) believes that acquiring new knowledge and understanding in this regard would assist in the promotion of greater equity in accessing respectful and effective tree planting while promoting overall improvements in urban area development.

Action research in urban tree planting is regarded as the systematic and orientated around analysis of data; requiring gathering of data, analysis and the generation of interpretations directly tested in the field of action. Therefore, action research is concerned with an agenda for social change that embodies the belief of pooling knowledge to define a problem in order for it to be resolved.

Materials and Method

This research has used the GIS (Geographic Information System) to identify the areas where the trees were planted. The tool also identified the household heads in whose house frontages the trees were planted. The streets were named and owners of each of the house were recorded as the plant caregivers. Another tool used in this research is the advocacies and community sensitization to obtain a result on how the community members were involved as the stakeholders of the tree planting and maintenance. This is justified by the fact 458 community members were motivated to participate in a Participatory Action Research (PAR) model.

Research Findings

1. GIS as tool have the capability of enhancing tree planting and maintenance in the urban peripheral areas
2. GIS can assist in keeping records of all the household heads that are identified as the caregivers to the plants
3. It is very easy to identify with use of the GIS the plants existence and traces the history of the tree for its security and well-being, including those that are affected by encroachment

4. Public participation in tree planting can guarantee the security and healthy growth of the plants
5. That public participation will instill in the minds of the caregivers the sense of ownership of the plants which reduces the burden of doing same by the government
6. PAR had made it possible for involving the all the stakeholders at the critical junctions, keeping them a braced with all the needed information about tree planting
7. That tree planting is knowledge-based activity, not an annual event as misconstrued before
8. The public are willing to adjust to new development but there are insufficient awareness creation on the side of the government

Conclusion

Urban Tree Planting has become one of the major urban issues since the emergence of the global warming and its many challenges to urban inhabitant. Urban tree planting approach represents an opportunity as well as management challenge for the city. The city remains an underutilize resource, playing parasite on the host environment. Therefore it is critical to understand how the city can better serve the environment through public participation and inclusiveness as well as involving GIS technology in tree planting and management to curb the menace associated with lack of it. Therefore, conclusively one may conveniently say that, to promote more sustainable environmental protection, much more attention must be spent on unblocking the community inclusiveness and public participation in natural resource management to enhance the well fare of the city and the wellbeing of its inhabitants.

Recommendations

1. Government at all levels should involve the local communities in decision makings concerning tree planting and their maintenance
2. The process of tree planting should start with broad based analysis of all the environmental factor that will have effect on the growth of the trees
3. Pre planting studies of the programme needs to be undertaken to avoid chaotic and haphazard implementations
4. Modern technology such as the use of GIS must be made an integral parts of tree planting to secure the growth and protection of the trees
5. Awareness on the need for tree planting must be created amongst the populace to stimulate a harmony between people and trees around them
6. Public participation should encouraged and made as one the necessary process of tree planting
7. More fund should be allocated to the sections, units and government department to facilitate and foster maintenance

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Assessing the Humanitarian Challenges Facing Internally Displaced Persons (IDPS) on Camps in Maiduguri, Borno State

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Abstract: Internally Displaced Person camps in Borno State, Nigeria were centres accommodating Nigerians who had been forced to flee their homes but remain within the country's borders. Displaced persons camps in Maiduguri accommodated from 120,000 to 130,000 people, while those in local government areas ranged above 400,000. There were over two million displaced person in the State. The research was conducted in 7 official camps and 2 unofficial camps. The 7 official camps comprises of Bakassi camp, Moduganari Stadium IDPs camp, EYN camp IDP camp, NYSC IDPs camps, Teachers village IDP, Madinatu League camp, the two unofficial camps are the Farm centre IDPs camp,and Saint Hillary IDPs camp. The research intent to use multistage sampling techniques to sample the IDPs on camp and use simple random sampling to sample NGO officials and Government officials. Some of the IDPs on official camp have returned to their communities but have returned back to their camps because their communities are still not safe while those whose communities are still not safe are still on camps in Maiduguri. The IDPs are now facing abject poverty, shortage of food stuffs, water, shelter, poor living condition as relate to hygienic environment, lack of quality healthcare services, and security situation on camps in Maiduguri.

Key words: Humanitarian, Internally Displaced Persons, & Camps

Introduction

The war against insurgency is still on in Nigeria and may take long period of time before it will completely overcome, their mode of attack and emerging threat to people in the North East sub-region. It is the worse threat faced by the state authorities and public, especially in the Northeast region Ability to overcome this threat post according to Ojo, (2006), challenge to the Nigerian military. Issues relating to Internally Displaced Persons (IDPs). Issues relating to food provision, poverty, and employment are very critical and an indispensable part of the every state and society's security. Without the three nothing positive and sustainable can be achieved in terms of wealth, security and prosperity Seer, (1979) asserted that development can only take place if unemployment and poverty are addressed to national security and development according to Robert McNamara perpetuation of poverty is the herald of unrest, internal unrest, violence and the escalation of extremism and noted that without development, there would be no national security. Poverty basically involves lacking what is necessary for material well-being of an individual (World Bank, 2002) and Nigeria is already hit by poverty as more than 112.519m of its 167m people are living in abject poverty. This is tied to unemployment, which has also by the 2nd quarter of the same year, 2015 (National Bureau of Statistics, NBS Reports, 2014, 2015) unemployment and poverty are directly linked and are so pronounced thereby making them a threat to Nigeria national security as those battalions of unemployment numbering about 75.9m (mostly youth) many of whom are in the North –East region could be and or had been forcefully and voluntarily recruited by Boko Haram, indulge into drug abuse, crime and many other acts threatening to Nigeria's national security.

Internally displacement is one of the greatest tragedies of our time and Internally Displaced Persons (IDPs) are among the most vulnerable of the human family United Nation (UN) office for the Coordination of Humanitarian Affairs (OCHA, 2004). This is because the intensity of internally displacement, arising from different factors, which include violent conflicts, man- made and natural disasters, has become a global problem. In fact, in the past few years, reports of internally displacement have increased around the world, bringing about a change from large –scale refugee flows to amplified internal displacement. The internal displacement of civilians and their need for human rights protections remain one of the vital human right concerns of the post – Cold War era (Kalin, 2010). This is because the end of the Cold War marked a historical shift in the nature of warfare as well as the form of displacement hitherto witnessed. War fare metamorphosed into a form in which combatants are unknown sub state actors waging war against the state. Notwithstanding, armed conflicts today are targeted against civilians.

Evidence from the post- Cold War era shows that most intrastate conflicts occurred in Africa and Nigeria have contributed immensely to the global displacement figure. Internal Displacement in Nigeria has been driven over the past few decades by general violence, human right violations, and natural hazards International Committee of Red Cross, (2009). Currently, the insurgency by Boko Haram has been the major cause of displacement after the Nigeria Civil War of 1967 – 1970. The Boko Haram insurgency began in 2002 but gained momentum in 2009 when the war spread in Northern Eastern Nigeria namely Borno, Yobe, Adamawa, Bauchi, Gombe and Taraba State.

Holistically, the destination of IDPs both within and outside Nigeria are the host communities, IDPs camps, safer neighboring countries outside the country of displacement.Thus, violence by the sect intensified , human rights violation increased civilians were forced to flee to other areas in search of security both outside Nigeria as refugees and within safer communities and camps in Nigeria as IDPs (NEMA, 2015). Caux,H. (2013) observes that most IDPs live within communities, whereas the displaced persons who flee to safer countries to take refuge there.

Generally, the effects of internal displacement are multifarious and dispossess the concerned persons of their employment, home, and security. Victims of displacement are at the risk of arbitrary detention, enforced conscription, human trafficking,sexual assault, loss of suitable healthcare, deprivation of food, loss of education opportunities and other cruel effects of displacement (Adekola, *et al*., 2019). Literature has, however espoused the unequal effects of displacement on men, children and women (Abimbola, *et al*., 2012). Less attention has been given to the discriminatory treatment of IDPs in host communities arising from the neglect of the government towards providing humanitarian aids to IDPs in host communities against the government's presence in formal camps. This research seeks to find out why the IDPs in government camps are selling their food stuffs. While other segment of people within the camps are starving and are crying for help.

RESEARCH METHODOLOGY

Survey approach was adopted for collection of data. Questionnaires for 30 educated IDPs were administered and also interviewed some of the respondents, especially the illiterate ones based on the notion of the Internally Displaced Persons. The interview offered the researcher the chance of clarifications on issues of concern to the researchers and also ask salient questions as follows –up to probe for more information.

The researcher randomly selected 300 participants from all the camps based on age 15 - 55years (women and men). The researcher interviewed some of dignitaries attached to IDPs camps especially NEMA boss, National Commission for Refugees, Migrant and Internally Displaced Persons. Also preliminary investigation and information obtained from key informant.

RESULTS AND DISCUSSION

From the above responses received from the respondents, it is very clear that the people are facing the challenges of poor sanitary condition, lack of good shelter conducive for living, lack of good drinking water and access to good healthcare services. Within the camp, to alleviate the situation, Non-Governmental Organisations, offer medical services to the people facing traumatic condition and frustration because of the situation they find themselves. Most of these IDPs live in bitterness due to painful separation from their spouse, families and loved ones.

IDPs response on food is still not encouraging, some of the IDPs complained of poor feeding arrangements and lack of nutritious food for themselves and their children. Such form of feeding they said can affects their health and that of that their children. They also complained that only one type of food item they consume. They appeal to government to come to their aid and supply them with complete balance diet.

A rapid assessment of health services provided in the camps was conducted. The assessment was conducted using a tool adapted from the multi-cluster assessment and

Strengthening Integrated Delivery of HIV/AIDS Services. (SIDHAS) health facilities assessment tool. The tool explored themes such as HIV/AIDs, general health condition of IDPs, water sanitation and hygiene. The assessment leads to promote health condition of the IDPs.

The security on the camps is really encouraging having the highest responses all the camps have security men and women of Army, Police, Civilian Joint Task Force (CJTF), and hunters all with the aim of enhancing security on all the camps.

The response of the IDPs on education was also very poor, they are of the view that their children have been going to school before the insurgency erupted and the militants affects schools the IDPs especially parents have almost lost hope for their children education and sometimes their children on the camp are receiving informal education especially religious instructions.

Formal education sector is struggling to cope with the responsibility of educating IDPs and returnees students in overcrowded, poorly maintained school buildings where teachers are often poorly qualified or irregular paid and class sizes large. Water Sanitation and Hygiene facilities including access to portable drinking water are often lacking or insufficient in schools and have been identified as a barrier to attendance by families for both boys and girls(19"% and 18% respectively), especially children living with disabilities. There are large number of out of school children and youth who are unable to access formal education because they are over –age or have missed too many years of education and government-provided alternative education opportunities are few. This leaves large numbers of learners without any access to opportunities to develop foundational literacy and numeracy skills or access to meaningful employment opportunities.

Even though NGO- provided alternative education classes may provide learners with vocational classes may provide learners with vocational and education opportunities, however, formal government recognition of these classes are not guaranteed and classes may not lead back to formal education because of lack of transition mechanisms and school capacities.

CONCLUSION

In conclusion the IDPs have been suffering from lack of enough food, lack of water for some camps, lack of quality healthcare services, poor sanitary conditions which in turn affect them and their children on camps. They are also facing financial problems that is why they sometimes sell their non – food items in order to buy what they need. The IDPs are also facing the problem of lack awareness in terms of information about what is happening around them and worldwide.

RECOMMENATION

1.The greatest good that will be done to displaced persons in Nigeria is only to protect, eliminate them but to introduce counseling to all IDPs, who will counsel them in all areas of living like appointment, marriage, family and social areas.

2. The fundamental human rights of all citizens should be maintained at all times. Agreed that the environment may be engulfed in violence, it is no ground to violate the rights of people.

3. Government should ensure that where reliable material are sent to IDPs those materials should not be diverted for other use.

4. Adequate security mechanism should be put in place at the camp sites to relax the apprehensive minds of the IDPs where they are.

5. It is imperative to speedily recover and rehabilitate men, women and children in these camps to facilitate proper integration of IDPs back into their various social structures, thereby eliminating tendencies of social vices.

6.The House Committee of on IDPs and the National Assembly as a whole should embark on legislative processes that will lead to the domestication of African Union Convention for the protection and Assistance of Internally Displaced Persons in Africa. This treaty reinforces the state's Primary responsibility to protect the rights and well- being of people forced out of their homes due to conflict, violence, disasters and human rights abuse.

7. To provide the IDPs with entrepreneurship skills that will make them self-reliance and provide them with financial assistance that will make them establish themselves especially on business of Hairdressing, Soap making, Catering, Interior decoration, Tailoring Embroidery and Knitting designs for women and girls and Carpentering Furniture making, Aluminum, Welding, /Computer repairs for men and adolescents (boys).

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Sustainable Strategies for Urban Water Management in Maiduguri City, Borno State. Nigeria

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Abstract: *With the global concern of climate change, particularly the water shortage and degradation of the urban environment in Africa, there is a need for sustainable strategies to overcome these problems. This paper studies the traditional and modern practices of rainwater harvesting and storm water management to provide sustainable strategies for urban water management in arid regions, using Maiduguri City as a case study. The research methods and results are established with quantitative and qualitative data.). Rainwater collection and harvesting is a strategy that can address both conditions of excess. A model that relies on three metrics is include measuring the potential rainwater harvesting volume, the water requirement for a landscape area, and the volume of rooftop rainwater available for capture in the city of Maiduguri. Results indicate that a substantial amount of preserved rainwater can be captured and used for landscape purposes in the study area. The design strategy is proposes implementation of strategy to collect rainwater from rooftops in the historical area and to store it in neighborhood storage tanks located in selected public spaces, in addition to a green network plan to manage the storm water runoff. The second phase focuses on an urban transect that intended to analyze the urban fabric for the historical and the modern Maiduguri City*

Key words: *Landscape, Sustainability, Plant, and Water*

BACKROUND OF STUDY

Today, Climate Change holds unprecedented challenges for the entire Planet's Ecosystem. (Agrawal 2008). Water is an essential resource for our lives. Throughout history, many civilizations flourished in modern- day region where water is extremely limited. (Kasim 2007).

This scenario is prevailing in arid and semi-arid environments particularly that of third world countries were poverty and low level of technology combine to hinder development (Bohdanowicz 2005). This problem is compounded by the rapid population growth in these countries and hence increase in water demand. Maiduguri the Borno State capital fits into the scenario described above, hence the necessity for obtaining and securing quality water for both landscape and domestic use and consumption dominates political and economic discourse of both the people and the government(s).

As the water crisis becomes more critical, there is need for new sustainable solutions and strategies to meet the current and increasing human needs in order to not only recover the damaged environment, but also sustain it for the future.

Today, Maiduguri City needs solutions to address its current water and environmental problems. One of the areas in Maiduguri City that requires urgent solutions is its historical core. This paper proposes that a sustainable water management strategy can be developed for urban areas in Maiduguri City using both traditional knowledge as well as the modern practice of rainwater harvesting.

Over View

This provides a historical overview of the development of rainwater harvesting techniques and practices in Maiduguri City. The research explain that the cultural heritage value of rainwater harvesting and its importance in developing Maiduguri City.(Waziri 2002)

According to Design for Water by Heather Kinkade Levario, rainwater harvesting (RWH) can refer to any type of methods that captures, moves, and stores the runoff from various sources and for unlimited purposes.(Bukar 2000).

Generally, the RWH system has four main components: a catchment area, conveyance, storage, and distribution system. Rainwater is ideal for landscape use because it can reduce the salt accumulation in the soil (a common problem in irrigation systems) and flush it away from the root zone area, allowing for a healthy root growth. As previously mentioned, Maiduguri receives an average of 53.5mm amount of rainwater annually and this is enough for rainwater harvesting to potentially bring similar benefits to Maiduguri City.

According to Design for Water, the RWH system can be categorized into two types – passive and active (see Figure 11). Passive RWH systems collect the rainwater from any low infiltration surface area and move it to a landscape area for direct, immediate use on site. Examples of a passive system include rain gardens, bio swales, constructed wetlands, tree boxes, and green streets. Active RWH systems collect the runoff from the catchment area and store it in cisterns for future use. (Peter 2003).

These two rainwater harvesting systems are the basis of the modern green practices that manage storm water by using ecological and natural process to create healthier urban environments. Rainwater can be captured from any impervious surface. Typically, a rooftop catchment surface is the most common, simple, clean, and cost effective method for potable and non-potable use. In contrast, ground-level catchment areas—such as parking lots, streets and channeled gullies—are mostly used for non-potable use because of the higher risk of pollution.. For centuries, people in Maiduguri City have practiced this kind of a system, using their rooftops to capture rainwater and storing it in underground cisterns. We know that water quality was a continuous concern in Maiduguri City. The solutions can easily be retrofitted to current RWH systems in Maiduguri and also should be included in new ones.

The storage system is typically the most expensive component of a rainwater harvesting system. It is available in three types: surface storage, underground storage, and integral storage built into a property. However, whether or not rainwater can be conveyed by natural gravity or by pumping depends on its location; rooftop cisterns can use gravity, but basement cisterns require pumps to raise the water to where it will be used.(Agrawal 2005)

METHODOLOGY

This research deals with one of the fundamental areas in any project work. It elaborates on the ways in which data were collected, the methods used, the sampling frame selected if necessary and the methods used for analyzing data.

Visual Survey: Take a visit of the area and careful observation of its features. This survey must be guided by critical literature review guidelines. Eg checklist. Visual survey can be documented through tabulation, sketches, plates, figures, written reports etc. in this particular case, plate will be used.

Structured interview: To interview some of the areas on several aspects of the case study site to get detailed and precise information on the functionality of the area

3.3 Procedures for data collection.

The procedures for data collection for the local case study involved visits to the case study sites, and taking visual analysis of their roof top, run off water and landscape elements, as the reflects harmony with nature.

Variable of study

The case studies were assessed based on the following dependent variable; Background, Site planning and Landscaping, Rainwater harvesting, Storm water management technique.

4.1.3 Landscape feature

4.1.3.1 Planting

Luscious array of both mesophyte and xerophytes plants, grouped according to their water requirement in distinct areas and rows for each plant. Grouping plants with similar water requirements into separate areas simplifies the system by applying the desired amount of water needed by each plant.

4.1.4 Rainwater harvesting system

The roof outlets are connected with pipes that drop to the ground level and into the underground drainage system, where the water is release into the river. There is no form rain water harvesting system at the hospital.

PlateXXX1: Runoff Drainage pipes at hospital

4.1.5 Storm water system

The drainage systems have been engineered to quickly collect SW into the constructed underground drain, and discharge into larger and deeper collector drains and finally to the river.

4.1.6 Sewage System

Sewage treatment system is one that treats wastewater and discharges effluent into the ground onsite. No form of recycling

Table 4.2 checklist for the assessment of sustainable water management practices in some areas

VARIABLES	BMPS	LEVEL OFAPPLICATION				REMARK
		HIGH	MODERATE	LOW	AABSENT	
Roof rain water	Rainwater tank/ reuse scheme				√	No rainwater harvesting system
Storm water						
Filtration	Gravel filter		✓			Moderate use Of gravel and low vegetative Filters
	Vegetated filters		✓			
Conveyance	Bio swale			✓		low use of bio swale and planter
	Planter			✓		
Detention	Detention pond				✓	No detention pond and dry swale.
	Dry swale				✓	
Retention	Retention pond					Absent of retention pondand underground storage tanks. High use of constructed wetland.
	Constructed wetland	✓				
	Underground tanks				✓	
Infiltration	Infiltration trench				✓	Absent of infiltration trench, permeable paving and rain garden.
	Permeable paving				✓	
	Rain garden				✓	
Sewage water	Sewage recycling				✓	No sewage treatment plant

Summary findings from case studies

4.5.1 Rainwater

Under rain water harvesting an absent scale was reflected in all the case study . This was not shocking given that rainwater is not a common practice at commercial facilities level in Nigeria.

Retention

All the three case study reflected absent on the use of retention pond, constructed wetland, and underground tanks.

Infiltration

Under infiltration three sub variable were analyzed; infiltration trench, permeable paving and rain garden. All the three reflected absent expect case study 3 hospital were the use of permeable paving reflected as moderate.

4.5.3 Sewage recycling

The three case studies reflected absent of sewage recycling. This is not suspiring given that sewage recycling is not a common practice in Nigeria.

DESIGN BRIEF

6.2 planning Concept

The plan evaluates the feasibility of various principle that, when fully implemented, will create a network of decentralized source controls to detain or capture more water on site that can be use for various non-potable uses. The concept chosen for the design is base on micro spaces.

6.3 Landscape Features Character

Considerations were given to the planning and landscaping of the city to enhance it patient experience. paving material of low reflectivity, colourful and plants, water features circulations form are display to provide the sensory and physical demands of the mentally and physically challenge and psychological ailments.

6.4 Design Considerations

The design attempts to promote sustainability by using some of the principle below.

6.4.1 Rain Water.

Rainwater harvesting requires that tanks be installed, to collects the runoff from the roof in other to provide water between rainfall events. Roof water from the main hotel building and the chalet will be harvested into a surface storage tanks as seen in the figure below.

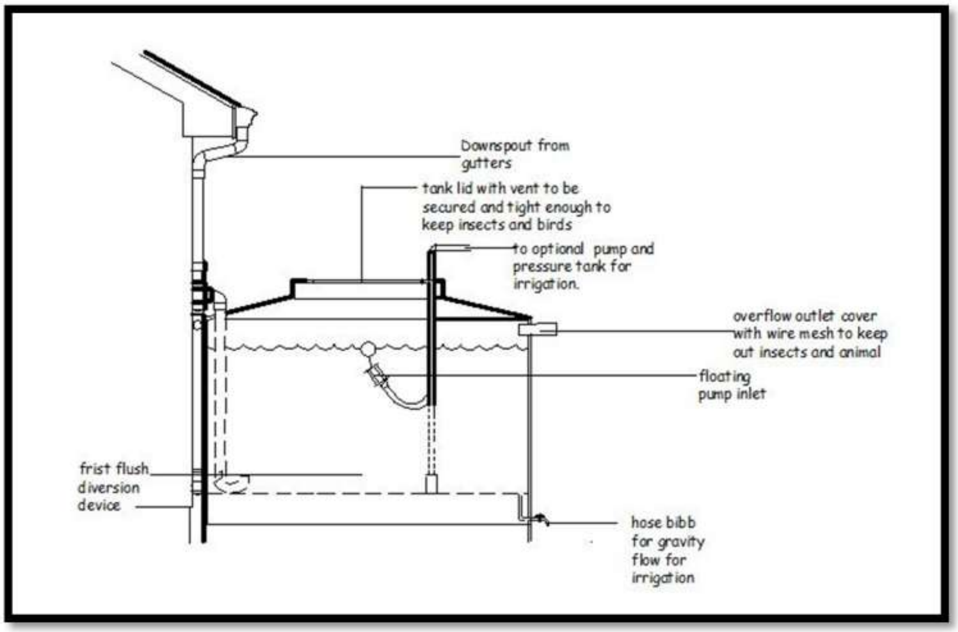

Figure 6.1: Section cutting through a tank from the roof.
Source: Researchers' compilation 2017

Harvesting rainwater can reduce the use of potable water for landscape feature. Additionally, Rainwater is available free of charge and puts no added strain on the municipal supply or private wells. Rain water will be harvested in tanks and be used for landscape features.

6.4.2 Storm water.

Sustainable storm water management aims at reducing runoff by using technologies for storm water utilization or storage and to increase infiltration. For these design some of the technique use are;

6.4.2.1 Underground storage.

Runoff from the parking lots will be directed into an underground storage and will be use to irrigate the plant as seen in the figure below.

6.4.2.2 Bio Swale

Swale is a linear vegetated drainage features that store or convey SW. for the design the open gutters were retrofitted into swales that has a perforated pipes at the base as seen in the figure below. As SW runoff flows through a vegetated swale, it is filtered by the vegetation in the swale and infiltrated into the underlying pipe and finally to the underground storage.

6.4.2.4 Rain Garden

The Rain garden were design to retain storm water thereby reducing runoff and also allow for infiltration to recharge the underground aquifer.

5.2 Site Characteristics

5.2.1 Topography

The entire site may be described as undulating, variation in the elevation and steepness of land surface give rise to the to the construction of retaining wall that provide the underlying form of a landscape.

5.2.2 Surface drainage.

The drainage systems have been engineered to quickly collect runoff in the constructed open drain which carries it from site into the river. This design philosophy treats rainfall runoff as a waste, further more causing erosion and increasing to flood. Sustainable SM design treats rainfall runoff as a valuable resource.

5.2.4 Vegetation

Characterized by patches of woodland, herbs and grasses with few widely scattered deciduous trees.

5.2.5 Rain fall

Maiduguri is located within the Sub-Sudan climate zone. It is characterized by two distinct seasons: dry season (November to March) and wet season (April to October). The highest rainfall is recorded in August (Mean of 310 .5 mm) as shown in Table below

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2004	0.0	0.0	TR	15.7	102.1	46.1	226.2	464.0	106.0	5.5	0.0	0.0
2005	0.0	0.0	0.0	68.3	67.6	150.0	146.3	351.6	106.8	84.9	0.0	0.0
2006	TR	0.0	0.0	0.0	70.4	129.5	197.7	229.2	300.5	40.1	0.0	0.0
2007	0.0	0.0	0.0	23.7	60.3	128	269.1	263.0	132.6	TR	3.7	0.0
2008	0.0	0.0	0.0	26.9	125.0	110	107.3	314.6	190	72	0.0	0.0
2009	0.0	0.0	0.0	33.9	147.3	136	157.1	220.1	148.7	83.1	0.0	0.0
2010	0.0	0.0	TR	TR	34.4	144	181.6	138.7	110.7	77.9	TR	0.0
2011	0.0	TR	0.0	47.5	25.1	78	181.4	228.2	112.1	56.8	0.0	0.0
2012	0.0	TR	0.0	13.3	64.0	224.1	334.8	317.8	153.8	54.8	0.0	0.0
2013	0.0	0.0	5.1	2.0	68.3	155.6	137.4	577.9	82.6	60.4	0.0	0.0
Mean				**23.1**	**76.5**	**127.4**	**191**	**310.5**	**144.4**	**53.6**		

Table 5.1 Annual/ Monthly Rainfall Figures Of Maiduguri 2004-2013
Source: Federal Ministry of Aviation, Meteorology Unit, Maiduguri.

5.2.6 Evapotranspiration

Evapotranspiration is the combined evaporation from all surfaces and the transpiration of plants. The main factors that determine evapotranspiration rates include net radiation, water availability, wind velocity, atmospheric temperature and inflexibility of the land surface.

5.2.7 Temperature

The temperature is, as would be expected, generally high in the state. Mean monthly maximum temperature ranges from 32 degrees to 42 degrees. The mean monthly minimum temperature ranges from 16 to 28 degrees. Refer to table 5.

5.3 Site Water Analysis

5.3.1 Roof water

Using Waterfall (2004) Formulae. Supply = Rainfall (Mm) X Catchment Area (M^2) X Runoff Coefficient

		JAN	FEB	MAR	APL	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
	AREA					**76.5**	**127.41**	**191**	**310.51**	**144.4**	**53.55**			**TOTAL**
Q1	785.2195					51058	85038	127480	207245	96377	35741			**618356**
Q2	66.4293					4319	7194	10784	17533	8153	3023			**52310**
Q3	72.0898					4688	7808	11705	19029	8849	3281			**56775**
Q4	3709.742					241225	401759	602276	979124	455333	168858			**2921415**
Q5	326.9918					21263	35413	53088	86306	40135	14884			**257509**
Q6	293.9014					19110	31828	47714	77570	36073	13377			**231442**
Q7	191.1687					12430	20703	31036	50454	23464	8701			**150541**
Q8	94.0006					6112	10180	15260	24808	11537	4278			**74020**
Q9	57.4289					3734	6219	9323	15157	7048	2614			**45222**
10	34.3314					2817	4692	7034	11436	5318	1972			**34119**

Table 5.4 Roof Water Supply Worksheet

5.3.2 Storm water

Waterfall (2004) formulae Supply = Rainfall (Mm) X Catchment Area (M^2) X Runoff Coefficient

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	TOTAL
JANUARY	20259.63	9099.96	3933.16	3014.96	4859.46	8084.30	7572.08	3206.88	7232.58	4271.81	**71534.83**
FEBRUARY	24180.85	10861.25	4694.42	3598.50	5799.10	9649.01	9037.65	3827.57	8632.42	5098.61	**85380.29**
MARCH	26141.45	11741.89	5075.05	3890.27	6270.27	10431.36	9770.43	4137.91	9332.35	5512.02	**92303**
APRIL	24507.61	11008.02	4757.86	3647.13	5878.38	9779.40	9159.77	3879.29	8749.07	5167.51	**86534.06**
NOVEMBER	19932.86	8953.19	3869.73	2966.33	4781.07	7953.91	7449.95	3155.16	7115.91	4202.91	**70381.04**
DECEMBER	19606.09	8806.41	3806.29	2917.71	4702.70	7823.519	7327.82	3103.43	6999.26	4134.01	**69227.25**

TOTAL	1346 28.5	6047 0.72	2613 6.51	2003 4.9	3229 0.98	5372 1.5	5031 7.7	2131 0.24	4806 1.9	2838 6.4	47536 0.5

Table 5.21 Summary of monthly Plant water demand sheet from November to April for state specialist hospital Maiduguri

DESIGN BRIEF

The paper is to apply effective water management strategies in semi-arid region for sustainable landscape development of therapeutics garden in Maiduguri.

6.2 planning Concept

The plan evaluates the feasibility of various principle that, when fully implemented, will create a network of decentralized source controls to detain or capture more water on site that can be used for various non-potable uses. The concept chosen for the design is based on micro spaces.

6.3 Landscape Features Character

The landscape design try to create an environment that will induce a feeling of well and enhance healing through horticultural therapy as complementary to orthodox medical practice. paving material of low reflectivity, colorful and plants, water features circulations form are display to provide the sensory and physical demands of the mentally and physically challenge and psychological ailments.

Design Considerations

The design attempts to promote sustainability by using some of the principle below.

6.4.1 Rain Water.

Rainwater harvesting requires that tanks be installed, to collects the runoff from the roof in other to provide water between rainfall events. Roof water from the main hotel building and the chalet will be harvested into a surface storage tanks as seen in the figure below.

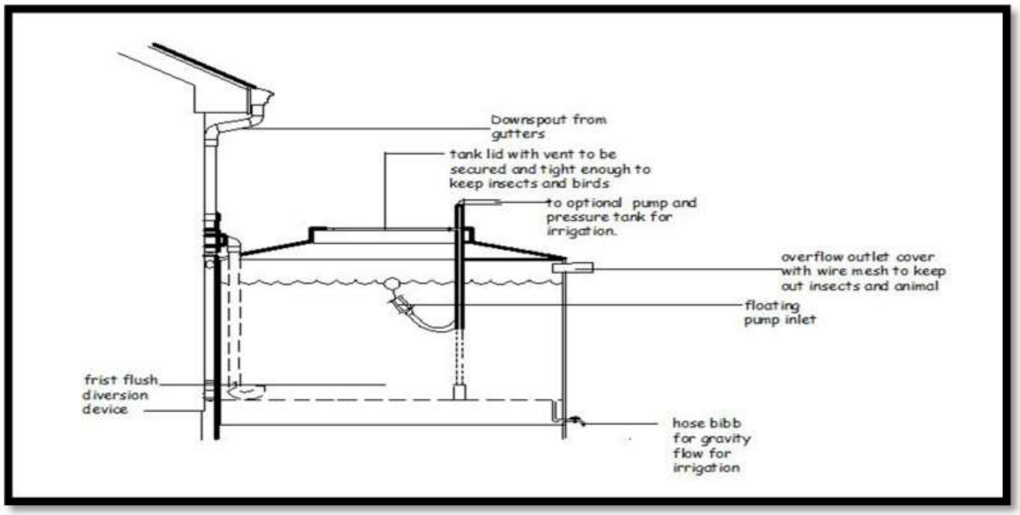

Figure 6.1: section cutting through a tank from the roof.
Source: researchers compilation 2017

Harvesting rainwater can reduce the use of potable water for landscape feature. Additionally, Rainwater is available free of charge and puts no added strain on the municipal supply or private wells. Rain water will be harvested in tanks and be use for landscape features.

6.4.2 Storm water.

Sustainable storm water management aims at reducing runoff by using technologies for storm water utilization or storage and to increase infiltration. For these design some of the technique use are;

6.4.2.1 Underground storage.

Runoff from the parking lots will be directed into an underground storage and will be use to irrigate the plant as seen in the figure below.

6.4.2.2 Bio Swale

Swale is a linear vegetated drainage features that store or convey SW. for the design the open gutters were retrofitted into swales that has a perforated pipes at the base.

6.4.2.4 Rain Garden

The Rain garden were design to retain storm water thereby reducing runoff and also allow for infiltration to recharge the underground aquifer.

6.4.3 Sewage water recycling

Water harvesting cannot provide a completely dependable source of water because it is dependent on the weather, and weather is not dependable. To get a more steady supply of water for landscape use, recycle waste water were considered because waste water is independent of weather

6.5.1 Planting

Plants were also group according to their water requirement, Grouping plants with similar water requirements into separate areas simplifies the system by making the amount of water needed to maintain those plants easier to calculate. However research has shown that succulent plants with medium water factor use can be use plant are more drought resistant.

4.6 conclusions

Rainwater harvesting, storm water management and sewage recycling in Maiduguri is not yet a common practice. Most of the hospital discharges their waste water directly into municipal drainage system and rivers causing bad odor and erosion. By contrast, contemporary management of the water regards rain water, storm water, and sewage water as a resource that can be reused. One major concern of all landscape maintenance managers is the complexity and cost involved in implementing sustainable water resource practice, the fear that the change towards more sustainable practices is expensive. Therefore, it is also conceivable to assume that lack of knowledge and cost are two major challenges that thwart sustainable water management practices.

RECOMMENDATION/CONCLUSION

Recommendations

The following are the sub-heading through which these recommendations are expected to be tackle.

a) Landscape improvement.
b) Road network and parking.
c) waste water recycling
d) Basic Facilities for physically challenge people
e) Minimize environmental pollution through the control noise, heat, odor, and inefficient circulation

7.1.1 Landscape Improvements

There is the general need to create and maintain various gardens especially in the orthopedic court garden and also the court yard between the various block of wards. This is especially important to those patients within the ward and those moving i.e. transport patients/ visitors. This can be achieved by as observed, learned and referenced from the journal "garden as a healer" by Mark Epstein (1998).

a. The use of lush, colorful planting that is varied and can reinforce the image of a garden and a healing place.
b. Using the flowering of the plants over several seasons to mark seasonal change and to provide a sense of cyclical rhythm throughout the tear.
c. Use of the trees foliage that moves easily and this creates noise even in the slightest of breeze movements. Created by placing trees to produce series of patterns of colours, shadow and light movement.

A landscape architect can be a valuable resource in helping lay out the garden and in selecting the right elements to make the garden a special place. But the garden must also be well maintained and, to be truly useful, must be known to patients and staff. Directional signs to the garden, perhaps with an identifying symbol, should be posted in the facility.

7.3 Open Spaces

There are various shapes and sizes of open spaces, most of them sizes of open spaces, most of them are formal with rectangular arrangement as they take alignment with the roads and buildings, while a few form court yards. Small flower beds are found with shrubs and lawns. The common shrub used here is *Duranta Spp*, which is pruned regularly. The components for such transformation includes:-

1. Choice of plants to be used in terms of form, shape, colour texture. For instance, *Tecoma stans, Nerium oleander, Cactus spp, Jatropha podrica, Thevitia perviana, Agave americana.* These plants have different shape, leaf texture, flower colour, which can be useful in a therapeutic garden. *Thevitia perviviana* for instance is a fragrant shrub.
2. A cool environment can be of immense benefit to Patients and workers in the hospital while cutting down on use of artificial cooling system such as air-conditioning. However additional trees need to be planted along the roads and within the open spaces as it was observed that many places are open. In doing this, different shapes, texture form and colors should be deliberately chosen in order to derive the benefits of therapy.

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Effect of Effluent and Waste Treatment Cost Disclosure on Economic Value Added of Quoted Oil and Gas Firms in Nigeria

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Abstract: *This study analyzed the effect of carbon emission disclosure on economic value added of oil and gas firm in Nigeria stock exchange between the periods 0f 2018-2019. Panel Least Squared (PLS) method of data analysis was used. Secondary sources of data were employed; the interested variables were sourced from the annual report of the quoted oil and gas firms. The following variables were employed: Economic value added,* effluent and waste treatment cost disclosure*, Revenue growth of firm and Firm size. The study employs Causality Test, Hausman Test. fixed effect as well as random effect to analyses the included variables. From the analysis result the study found that* effluent and waste treatment cost disclosure*, has significant effect on economic value added, revenue growth of firm has positive significant effect on economic value added. Firm size has positive insignificant negative effect on economic value added. The study recommend that* Government should enact regulatory laws that will ensure that companies carry out the corporate social responsibility. Extant laws should be properly enforced.

Keywords: Carbon emission disclosure, Economic value added**,** *Revenue growth, Firm size*

INTRODUCTION

Effluent is wastewater - treated or untreated - that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters (Naddeo & Liu, 2020). Effluent only refers to liquid discharge (Choi, 2019). Effluent refers to wastes discharged into surface waters (Canencia, Dalugdug, Emano, Mendoza & Walag, 2016). An effluent cost a fee or tax to be paid on discharges into the environment, based on the quantity and/or quality of discharged pollutants. Waste is unwanted or unusable materials. Waste is any substance which is discarded after primary use, or is worthless, defective and of no use. A by-product by contrast is a joint product of relatively minor economic value. A waste product may become a by-product, joint product or resource through an invention that raises a waste product's value above zero. Examples include municipal solid waste (household trash/refuse), hazardous waste, wastewater (such as sewage, which contains bodily wastes (feces and urine) and surface runoff), radioactive waste, and others (Muck & Brass, 2015). Wastes are substance or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law (Diaz, 2016).

The UNSD Glossary of Environment Statistics (2001) describes waste as materials that are not prime products (that is, products produced for the market) for which the generator has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded. Under the Waste Framework Directive (2008), the European Union defines waste as an object the holder discards, intends to discard or is required to discard. Inappropriately managed waste can attract rodents and insects, which can harbour gastrointestinal parasites, yellow fever, worms, the plague and other conditions for humans, and exposure to hazardous wastes, particularly when they are burned, can cause various other diseases including cancers. Toxic waste materials can contaminate surface water, groundwater, soil, and air which causes more problems for humans, other species, and ecosystems (Wolsink, 2014). Waste treatment and disposal produces significant green house gas (GHG) emissions, notably methane, which are contributing significantly to global warming (Moran, 2014). The economic costs of managing waste are high, and are often paid for by governments. Money can often be saved with more efficiently designed collection routes, modifying vehicles, and with public education. Environmental policies such as pay as you throw can reduce the cost of management and reduce waste quantities (Wilson, Velis & Cheeseman, 2016). Waste recovery (that is, recycling, reuse) can curb economic costs because it avoids extracting raw materials and often cuts transportation costs (Ray, 2018). The location of waste treatment and disposal facilities often reduces property values due to noise, dust, pollution, unsightliness, and negative stigma. The informal waste sector consists mostly of waste pickers who scavenge for metals, glass, plastic, textiles, and other materials and then trade them for a profit. This sector can significantly alter or reduce waste in a particular system, but other negative economic effects come with the disease, poverty, exploitation, and abuse of its workers (United Nations Environment Programme, 2019).

Waste is part of the economy; it is a by-product of economic activity, by businesses, government and households. Waste is also an input to economic activity, whether through material or energy recovery. The management of waste has economic implications for productivity, government expenditure, and, of course, the environment (Yao-Jen & Min-Der, 2013). Firms' decisions over how to manage waste impact on their profitability. Where the benefits outweigh the costs, firms can reduce their overall costs and improve productivity by reducing the use of expensive raw materials, whether metal in industry, or paper in commerce. Equally, costs can be reduced by optimising the management of waste which arises (Thorneloe, Weitz, & Jambeck, 2017).

Economic Value Added (EVA) means a financial metric that investors use to tell how their capital is performing in one company as compared with other investments (stewart, 2013). Economic value added (EVA) is a financial measurement of the return earned by a firm that is in excess of the amount that the company needs to earn to appease shareholders. In other words, it is a measure of an organization's economic profit that takes into account the opportunity cost of invested capital and ultimately measures whether organizational value was created or lost (*Stern* & Shiely, 2013). Economic value added (EVA) is a measure of a company's financial performance based on the residual wealth calculated by deducting its cost of capital from its operating profit, adjusted for taxes on a cash basis. EVA can also be referred to as economic profit, as it attempts to capture the true economic profit of a company. This measure was devised by management consulting firm Stern Value Management, originally incorporated as Stern Stewart & Co (James, 2019). Economic Value Added (EVA) or economic profit is a measure based on the residual income technique that serves as an indicator of the profitability of projects undertaken. Its underlying premise consists of the idea that real profitability occurs when additional wealth is created for shareholders and that projects should create returns above their cost of capital (James, 2019).

EVA compares the rate of return on invested capital with the opportunity cost of investing elsewhere. This is important for businesses to keep track of, particularly those businesses that are capital intensive. When calculating economic value added, a positive outcome means that the company is creating value with its capital investments. Conversely, a negative outcome would mean that the company is destroying value with its capital investments and the capital would be better spent elsewhere. Businesses can use economic value added to assess managerial performance as it serves as a measure of value creation for shareholders (Izhar, Alam & Yameen, 2019). The real key to create shareholders‟ wealth is that a business enterprise has to earn economic returns to its owners for its economic survival and Economic Value Added (EVA) is one measure that can realistically assess the economic contribution of a company, shorn of accounting anomalies. EVA generated or destroyed by a company during a period can be measured by comparing profits with the total cost of capital used to produce them, thus aiding managers to withdraw value-destructive activities and invest in projects that are critical to shareholder's wealth. Over the long-term, it is improvement in EVA and not in accounting profits that drives wealth creation (Saurav-Panda, 2015; Gurleen, Sidana & Panda, 2019).

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Waste Management Cost Disclosure

Waste Management Cost Disclosure Waste (or wastes) is unwanted or unusable materials. Waste is any substance which is discarded after primary use, or is worthless, defective and of no use. Examples includes municipal solid waste (household trash/refuse), hazardous waste, wastewater (such as sewage, which contains bodily wastes (feces and urine) and surface runoff), radioactive waste, and others. Wastes are substance or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law (UNSD Glossary of Environment Statistics, 2013). Waste collection and transport can generate up to 70% of the total costs of the system. Separated collection of recyclables implies additional costs for which the sale of recycled waste often does not compensate, but there is increased pressure to reach the long-term recycling objectives set by law. The proper estimation and monitoring of waste collection costs are essential to define the most cost-effective waste collection system (Dijkgraaf & Gradus, 2017).

2.2 Theoretical Framework

2.2.1 Legitimacy Theory

The earliest documentation on legitimacy theory can be traced to the study of Sethi (1975) who states that corporate social responsibility is that corporate behaviour that aligns with prevailing social norms, values and expectations. The concept of social contract holds that the activities of business organizations should comply with social expectations. In the absence of this compliance society will withdraw the organizations' right to continue its operations. Business organizations operate within the boundary set by rules, regulations and societal norms. Where there is any perceived threat to the business as a result of violation of any rule and societal norm, sustainability disclosures are released by the companies. This implies that businesses that are prone to legitimacy problems tend to disclose more information in order to satisfy the public about their sustainability performance (Scaltrito, 2015). Legitimacy theory posits that business organizations disclose their sustainability initiatives to legitimize their operations. The businesses that are prone to sustainability issues also report more information to minimize criticism from the host community, address stakeholder expectations, build reputation and ultimately attract capital. Sethi (1975) also indicates that the need for corporate social responsibility is linked to organizational quest for legitimacy in the presence or absence of legitimacy threats. Scaltrito (2015) on legitimacy theory identify a number of threats to legitimacy namely negative events and media exposure. According to Raucci and Tarquinio (2015)., business organizations seek 'legitimacy' from important stakeholders by ensuring that their value system is in alignment with the values of the society that hosts the operations of the business. Sethi (1975) also discloses that legitimization is characterized by changes in the internal decision-making, changes in the perception of the external environment, and accountability mechanisms of the business organization. With respect to the notion of legitimacy, corporate disclosures (mandatory/voluntary) are ways through which businesses can show that they support certain societal expectations.

2.2.2 Anchored Theory

This study is anchored on Stakeholder theory because stakeholders are instrumental in ensuring that an organization acts in the public interest. Again, the business case for environmental reporting is often premised on the need for a business to prepare environmental cost disclosure reports for the purpose of financial stakeholders. On the other hand, environmental reporting as an accountability mechanism implies organizations' readiness to report true and fair information on environmental performance. Also, an accountability approach to environmental reporting implies that an organization identifies the stakeholders in its internal and external business environment who are all pivotal to its success and continuity. Such awareness could foster greater co-operation and engagement between company managers and stakeholders, thereby, resulting in feedback from corporate stakeholders.

2.3 Theoretical Exposition

Effluent and Waste Treatment Cost Disclosure and Economic Value Added

Maintaining good levels of waste management efficiency is an essential requirement for building sustainable development. This is valid not only from an environmental and social perspective but also from an economic point of view (Schönborn, Berlin, Pinzone, Hanisch & Lanz, 2019). Environmental issues are also components of corporate social responsibility (CSR) aspects covering environmental implications of a company's operations, products and facilities, such as: eliminating waste and emissions; maximizing efficiency and productivity of resources; and minimizing practices that might adversely affect the enjoyment of a country's resources by future generations (Masud, Bae & Kim, 2017). The rapid industry development, the depletion of natural resources, and the rise in environmental awareness have led corporate companies to shift their attentions from short-term profits to long-term strategies to achieve sustainable management and smooth progress into a new era (Mahmood, Furqan & Bagais, 2019). The World Commission on Environment and Development established sustainable development policies for future environmental and economic development, defining sustainability as a development model that meets the needs of contemporary people and protects the environment without comprising future development (Energy Research Centre of the Netherlands. 2018). Sustainability indicators are a suitable means for assessing the development of production technologies and integration of business decisions. Achieving an acceptable environmental performance has become a universal commitment for all organizations to maintain competitiveness (Kokubu & Kitada, 2015).

Environmental accounting (or green accounting) is an environmental analytical tool that measures and communicates the costs and benefits of the overall economic effects (International Organization for Standardization, 2011). It is a process that involves collecting material-volume and cost information to identify the costs incurred by corporate companies in the pollution emission, waste treatment, and environmental protection (Christ & Burritt, 2016). Adopting sustainable development while also retaining business competitiveness is a common goal in corporate communities. Because of this trend, a goal-oriented innovative management method is necessary for economic optimization and the reduction of material-related environmental pollution. Stotz and Bey (2018) explained that material flow management, which contributes to full utilization of the potential sustainable management of a company, provides a new framework for economic research and initiates standardization processes for sustainable management, because material flow and its effects are direct causes of ecological problems, material flow management can be used to directly address the root of a problem and facilitate the reduction in the environmental pollution, which also leads to cost reduction.

Environmental protection is critical for sustainability. Continuous investments in energy consumption and natural resource consumption, as well as manufacturing sectors and infrastructure, have had seriously harmful impacts on the environment Dominkovic

Bacekovic, Cosic, Krajacic, Pukšec, Duic, & Markovska, (2016). Environmental accounting creates accountability for business entities in terms of their efforts to protect the environment in their corporate decisions (Baek, 2017). Environmental accounting constitutes a tool for applying the sustainable development concept and now commands acceptance as a means of ensuring the preservation of the environment Environmental accounting information includes financial, environmental performance, and policy aspects, which are scattered in many parts of annual reports and social responsibility reports. The quality of disclosures can be characterized from aspects of comprehensiveness, reliability, and compliance (Vastola, Russo & Vurro, 2017). In decision making, an organization considers different pressures from internal and external parties and attempts to legitimize the impact of its activities on the environment in the eyes of society and various pressure groups. Environmental accounting plays an active role in preparing, presenting, and analyzing environmental information for interested party holders, thus encouraging top management to improve environmental conditions (Martí-Ballester, 2017). Li, He, Liu and Su (2017); Nishitani, Jannah, Kaneko (2017); Abreu & Cavalcanti, (2019) documented a negative relationship between effluent and waste treatment cost disclosure and financial performance. Tan, Habibullah, Tan & Choon, (2017), Muller and Kolk (2019); Gugler & Shi (2019); Nguyen, Ta, Lai, Dao & Cao (2020) showed a positive relationship between effluent and waste treatment cost disclosure and financial performance.

2.4 Empirical Review

Sarumpaet (2020) examined the relationship between environmental performance and financial performance amongst Indonesian companies from 2012-2018. The environmental performance is measured by corporate environmental ratings provided by Bapedal/ the Ministry of Environment, through a program, called PROPER, while the financial performance was measured by return on assets (ROA). Some control variables were also included in the analysis, namely: total sales, industry sector, stock exchange listing, and ISO 14001 certification. The study revealed while financial performance is not significantly associated with environmental performance, company size, stock exchange listing and ISO 14001 are significantly associated with environmental performance. This finding also indicated that the government environmental rating is highly consistent with international environmental certification.

Le (2020) investigated the role of environmental management accounting on sustainable supply chain management and the link between sustainable supply chain management and efficiency including financial and environmental factors using questionnaire-based survey. The study designed and sent questionnaires to 600 construction material manufacturing enterprises in Vietnam and managed to collect 418 valid ones which were processed by SPSS 20.0 software. The results showed that environmental management accounting had a significantly positive impact on sustainable supply chain management. Therefore, if enterprises adopt environmental management accounting, they will more likely implement sustainable supply chain management more efficiently. On the other hand, the findings pointed out that sustainable supply chain management positively affect to both financial and environmental efficiency.

Nguyen, Ta, Lai, Dao and Cao (2020) assessed the impact of factors on the application of environmental accounting for sustainable development. The information of 80 companies used for the research were representatively selected from manufacturing, mining and processing industries, state ownership and non-state ownership, in export processing zones and outside export processing zones at all scales of number of employees, equity, revenue in Vietnam. Data were analyzed using multivariate linear regression. Research showed that factors such as managers' perceptions of costs and benefits, environmental changes, characteristics of the scale of production and business activities of enterprises, pressures to announce sustainable environmental information and reporting have significant influences on the development of environmental accounting for sustainable development.

Xiaopeng, Xueyao and Yongliang (2020) estimated the causality of environmental information disclosure (EID)'s impact on investment effciency based on a quasi-experiment in 2007. The study found strong and robust evidence that there is a significant positive connection between environmental information disclosure (EID) and company investment effciency in China. The study further determined that heterogeneity of EID's performance appeared in the different settings of industry and subdivision industries. The significance of several sub-industries disappeared while the others retained larger significant coeffcients than the whole industry case. The probability that an enterprise issued an environmental annual report has a significant positive link with investment efficiency in heavy industry, while this relationship is weakened or even not obvious in non-heavy polluting industries. Finally, the study found that employee compensation served as a mediator from which EID has an indirect effect on investment efficiency. The results confirmed that EID plays a vital role in firm-level capital allocation efficiency.

Yongliang, Wen and Li (2020) utilised panel dataset composed of the listed manufacturing firms in China during 2006–2016. The study used the difference-in-differences (DID) model and the propensity score matching (PSM) method to investigate whether the Environmental Information Disclosure Measure (for Trial Implementation; EIDMT) affects the firm value. The results showed that EIDMT exerts a significant impact on the listed manufacturing firms' value. In consideration of the firm's ownership, EIDMT plays a more important role in the firm value of non-state-owned firms than state-owned firms. Furthermore, using a PSM–DID model for eastern, central, and western China, it was found that EIDMT significantly affected the firm value in eastern and western China but has little impact on central China.

Atang and Eyisi (2020) examined the determinants of environmental disclosures of listed manufacturing firms in Nigeria. The data for the study was gotten from a sample of 22 listed firms in the industrial sector. Ex post facto research design was adopted for the study and multiple regressions was used in analyzing the data. Descriptive and inferential statistics were used to generalize the results and conclude the findings. The result showed a beta value 0.018 for cost of sales. This mean an increase in the profitability of manufacturing firms will lead to a 1.8% increase in the environmental disclosure of the company. The result also revealed that board composition influenced about 13% of the variation in the environmental disclosure of manufacturing firms in Nigeria. While on the other hand auditor type contributed only 5.6% of the changes in the environmental disclosure of the manufacturing firms in Nigeria. It was therefore concluded that profitability, auditor type, board composition and firm size jointly influenced the environmental disclosure of manufacturing firms in Nigeria. It was recommended that the regulatory bodies should initiate policies that will make the disclosure of environmental information compulsory in Nigeria. Also, the external auditors should also persuade their clients to disclose information relating to the environment as this has an impact on their reputation.

Depoers (2020) related the extent of disclosure in the annual reports of French listed companies to some economic determinants. The sample included the 2015 annual reports of 102 randomly selected industrial and commercial firms. The extent of disclosure was measured by an index based on financial and non-financial discretionary information. The model of hypothesis explaining voluntary disclosure was defined as the interplay of contradictory forces: inducements deriving principally from agency theory and limitations imposed by information costs. The results revealed that voluntary disclosure is significantly related to size, foreign activity and proprietary costs.

Khaled, Elnahass and Salama (2020) used the resource-based view of the firm as a theoretical framework and linking it to carbon disclosure through carbon disclosure project, the study conceptualised and empirically investigated the impact of adopting proactive carbon management policies and communicating them to stakeholders, focusing on the financial performance of the top FTSE350 companies between 2007 and 2015. By developing a comprehensive financial performance index and controlling for several firm characteristics, the study found strong evidence that voluntary carbon disclosure is positively associated with firm financial performance.

Mohamad, Rahayu, Kaujan and Irwandi (2020) examine the impact of various factors on the quality of environmental disclosure. The study focused on factors related to the strategy and vision of the firm (environmental audit, presence of an environmental committee), diversity of and within boards (independence of the board, gender diversity) and factors related to the environment (environmental performance, degree of pollution of the company). The study used a sample of French listed companies in SBF120 for the period 2009–2014. The study found that quality of disclosure remains relatively low. In addition, the findings indicated that a company's strategy and vision (environmental audit), diversity in boards (gender diversity) and environmental performance play significant roles in explaining variations in quality of environmental disclosure.

Mohamad, Rahayu, Kaujan and Irwandi (2020) examined the effect of environmental performance on firm value with environmental disclosure as a mediation variable. Sample of research is non-financial companies at the Indonesia Stock Exchange that have followed the Environmental Performance Assessment Program (PROPER) held by the Ministry of Life Environment and Forestry. The data analysis method was Structural Equation Modeling-Partial Least Square (SEM-PLS), and the analysis operation was facilitated by the software of WarpPLS 6.0. The result of analysis showed that environmental performance has a positive effect on firm value and environmental disclosure; environmental disclosure does not affect firm value and does not mediate the effect of environmental performance on firm value.

Ojiakor, Ezuwore and Ozioko (2018) examined the responsiveness of organizational performance to environmental cost disclosure in the financial statements of motor vehicle manufacturing organizations in South East, Nigeria from 2006-2017. Specifically, the study was aimed at ascertaining the degree of relationship between environmental cost disclosure and profitability of the sampled firms. The survey design was used to carry out this research. Data were collected using questionnaires distributed to the respondents from the visible and viable motor vehicle manufacturing firms in South East, Nigeria. Personal interviews were conducted to check consistency in response. Data were analyzed using percentage frequency, while the Pearson's Product Moment Correlation Coefficient (PPMCC) statistic was used to test the hypothesis. The results of the analysis revealed that the degree of environmental cost disclosure in the financial statements of motor vehicle manufacturing firms in the South East, Nigeria is dependent on firm profitability. The more successful firms tend to disclose their environmental costs than the retrogressive firms. The study therefore, recommended that the motor vehicle manufacturing firms in the industry should of necessity be encouraged to disclose their environmental costs in their financial statements.

METHODOLOGY

3.1 Research Design
The research design employed in this study was *ex-post facto* research design. This was utilized in order to establish the meaningful relationship between environmental cost disclosure and economic value added and the effect thereof. This study was also treated as *ex-post facto* research since it basically relied on historical data (Kothari & Garg, 2014).

3.2 Population of the Study
The population of this study consisted of all the twelve (12) oil and gas companies listed on the Nigerian Stock Exchange as at 31st December, 2020. They include: 11 Plc (formerly Mobil Oil Plc); Anino International Plc; Capital Oil Plc; Conoil Plc; Eterna Plc; Ardova Plc (formerly Forte Oil Plc); Japaul Oil & Maritime Services; MRS Oil Nigeria Plc; Oando Plc; Rak Unity Petroleum Company Plc; Seplat Petroleum Development Company Plc; Total Nigeria Plc.

3.3 Sample Size and Sampling Technique
The sample size of this study comprised of eleven (11) listed oil and gas firms in the Nigeria Stock Exchange (NSE) from 2008 to 2020. Purposive sampling technique was adopted to select oil and gas companies that consistently filed their annual reports with the Nigerian Stock Exchange for the study period (2008-2020), these are: 11 Plc (formerly Mobil Oil Plc); Anino International Plc; Capital Oil Plc; Conoil Plc; Eterna Plc; Japaul Oil & Maritime Services; MRS Oil Nigeria Plc; Oando Plc; Rak Unity Petroleum Company Plc; Seplat Petroleum Development Company Plc; Total Nigeria Plc.

3.4 Model Specification

In an attempt to determine the effect of effluent and waste treatment cost disclosure has no significant effect on economic value added of quoted oil and gas firms in Nigeria. we develop an empirical model to ascertain the relationship that exists between the dependent and independent evariables. Generally, specification of account model is based on accounting theory and on the available data relating to the effluent and waste treatment cost disclosure being studied. The model of accounting analysis in this study will therefore follow the conventional method, and this, is in reference to the variables of interest in the model above. Obara, Ohaka, Nangih, Odinakachukwu, (2017). The effect of accounting for waste management expenditure on the profitability of oil and gas companies in Nigeria. *International Journal of Economics, Commerce and Management United Kingdom* 5 (3), 68-79.

The following model were adopted by him

$Y = \alpha + \beta 1WME + e$
where
Y = Firm Value

WME = Waste management expenditure

F= Functional notion

The present study will modify the model to enable the researcher to look at the topic from different perspective. Algebraically, therefore. The model to be regressed in this study is presented in a relational form as follows
EVA =F (EWTCD, RVG, FSZ)

Where

EVA= Economic value added

EWTCD= Effluent and waste treatment cost disclosure

RVG= Revenue growth of firm

FSZ= Firm size

With the linear expression of the model being

$EVA=bo+b_1EWTCD+ b_2 RGF + b_3 FZ + u$

Where

β_0 = Autonomous or Intercept

β_1 = Coefficient of Parameter EWTCD

β_2 = Coefficient parameter RGF

β_3 = Coefficient of parameter FZ

3.5 Decision Rule

The test of hypothesis and the decision on whether to accept or reject each hypothesis was based on the result of the T-Test/T-Stat in the multiple regression analysis. The t-statistics was used to test the significant contribution from each predictor to the regression models. Hypothesis were tested at 5% (0.05) level of significance. The Null Hypothesis was accepted if the Probability 'Value P-value of T Stat is greater than the stated 5% level of significance otherwise reject. P< 0,05, Accept Ho.P<0.05, Reject Ho

DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS

Table 4.1.1: Panel Least Square Regression Analysis testing the effect of Effluent and Waste Treatment Cost Disclosure on Economic Value Added

Dependent Variable: EVA
Method: Panel Least Squares
Date: 12/12/21 Time: 12:41
Sample: 2008 2019
Periods included: 12
Cross-sections included: 16
Total panel (balanced) observations: 192

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.679746	3.923705	5.937824	0.0000
EWTCD	1.539293	1.054267	7.460060	0.0000
RVG	0.069637	0.551890	5.126179	0.0000
FSZ	0.082004	0.401561	0.204213	0.8384

R-squared	0.711574	Mean dependent var	4.905846
Adjusted R-squared	0.684199	S.D. dependent var	2.809879
S.E. of regression	2.815772	Akaike info criterion	4.928963
Sum squared resid	1490.572	Schwarz criterion	4.996828
Log likelihood	-469.1805	Hannan-Quinn criter.	4.956449
F-statistic	29.33768	Durbin-Watson stat	1.908725
Prob(F-statistic)	0.000000		

Source: E-Views 10.0, Regression Output 2021

Interpretation of Regression Result

EVA = 3.679746 + 1.539293EWTCD + 0.069637RVG + 0.082004FSZ + μ

The above model tested the effect of EWTCD on economic value added. The result showed that EWTCD and RVG have a significant positive effect on EVA, while FSZ has a non-significant positive effect on EVA This can be seen from the coefficients and probability of t-statistics in table 4.23; β_1= 1.539293, Prob = 0.0000 < 0.05; β_2 = 0.069637, Prob = 0.0000 < 0.05; β_3 = 0.082004, Prob = 0.8384 > 0.05. Furthermore, the Adjusted R- squared which is the coefficient of determination shows the magnitude of variations caused on EVA by the explanatory variables (EWTCD, RVG and FSZ) to be 0.684. This indicates that about 68.48% variation in EVA is attributed to the influence of the explanatory variables (EWTCD, RVG and FSZ) while the remaining 31.6% is caused by other explanatory factors outside this model and this is captured by the error term.

Decision:

From Table 4.23, at the adopted level of significance at 0.05, the overall significance of the model with the Prob(F-statistic) = 0.000000, which is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative, which upholds that Effluent and Waste Treatment Cost Disclosure has significant positive effect on Economic Value Added of quoted Oil and Gas firms in Nigeria at 5% significant level.

Table 4.1.2: Pairwise Granger Causality Test showing the Causal Link between EWTCD and EVA

Pairwise Granger Causality Tests
Date: 12/12/21 Time: 12:42
Sample: 2008 2019
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
EWTCD does not Granger Cause EVA	160	3.50982	0.0323
EVA does not Granger Cause EWTCD		0.81708	0.4436

Source: E-Views 10.0 Causality Output File, 2021

Interpretation of Diagnostic Test

Table 4.24 shows that a unilateral causality runs from effluent and waste treatment cost disclosure to economic value added at a P-value of 0.0323 which is statistically significant at 5% level, thereby establishing a causal relationship between EWTCD and EVA. Consequently, giving credence to the alternative hypothesis that upholds that effluent and waste treatment cost disclosure has a significant effect on economic value added of quoted oil and gas firms in Nigeria at 5% level of significance.

Table 4.1.3: Fixed Effect Estimation between Effluent and Waste Treatment Cost Disclosure and EVA

Dependent Variable: EVA
Method: Panel Least Squares
Date: 12/12/21 Time: 12:44
Sample: 2008 2019
Periods included: 12
Cross-sections included: 16
Total panel (balanced) observations: 192

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.241595	4.042794	5.801820	0.0000
EWTCD	1.470854	1.100363	7.336699	0.0000
RVG	0.172336	0.572536	5.301004	0.0000
FSZ	0.125473	0.413299	0.303588	0.7618

Effects Specification

Period fixed (dummy variables)			
R-squared	0.744676	Mean dependent var	4.905846
Adjusted R-squared	0.630887	S.D. dependent var	2.809879
S.E. of regression	2.852943	Akaike info criterion	5.009484
Sum squared resid	1440.653	Schwarz criterion	5.263975
Log likelihood	-465.9104	Hannan-Quinn criter.	5.112555
F-statistic	20.91241	Durbin-Watson stat	1.767010
Prob(F-statistic)	0.000000		

Source: E-Views 10.0, Regression Output 2021

Table 4.1.4 Random Effect Model (FEM) Analysis between EWTCD and EVA

Dependent Variable: EVA
Method: Panel EGLS (Period random effects)
Date: 12/12/21 Time: 12:48
Sample: 2008 2019
Periods included: 12
Cross-sections included: 16
Total panel (balanced) observations: 192
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.679746	3.975502	4.925606	0.0000
EWTCD	1.539293	1.068185	6.441037	0.0000
RVG	0.069637	0.559175	5.124535	0.0000
FSZ	0.082004	0.406862	0.201552	0.8405

Effects Specification		
	S.D.	Rho
Period random	0.000000	0.0000
Idiosyncratic random	2.852943	1.0000

Weighted Statistics			
R-squared	0.711574	Mean dependent var	4.905846
Adjusted R-squared	0.604199	S.D. dependent var	2.809879
S.E. of regression	2.815772	Sum squared resid	1490.572
F-statistic	17.73768	Durbin-Watson stat	1.508725
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.611574	Mean dependent var	4.905846
Sum squared resid	1490.572	Durbin-Watson stat	1.508725

Source: E-Views 10.0, Regression Output 2020

Table 4.1.5 Hausman Test Comparing FEM and REM on EWTCD and EVA

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.224222	3	0.0087

Source: E-Views 10.0 Hausman Output, 2020

Interpretation of Hausman Test

On comparison of the results between the fixed effect model (FEM) and random effect model (REM), the Hausman specification test showed that the chi-square probability is significant at 5% (0.0087 < 0.05). The result suggests that the fixed effect regression model is more appropriate for the sampled data. Thus, this result corroborates the regression result in table 4.23 which upholds that EWTCD has a significant relationship with EVA of quoted oil and gas firms in Nigeria at 5% level of significance.

4.2 Discussion of Findings

The estimated models were be discussed vis-a-vis stated a priori theoretical expectations about the sign of the numerical values of model coefficients. This provides insight into the nature of the relationship between environmental cost disclosure on economic value added of quoted oil and gas firms in Nigeria and the effect thereof. Variables that entered the model were Emissions Cost Disclosure, Pollution Control Equipment Cost Disclosure, Compliance Cost Disclosure, Research and Development Cost Disclosure, Effluent and Waste Treatment Cost Disclosure as independent variables, while economic value added served as the dependent variable. Estimation of the model is via the Correlation analysis, Panel Least Square (PLS) Regression analysis, Granger Causality Test and Hausman Test by the application of the software for empirical econometric analysis, E-Views 10.0.

The adjusted R^2 of 60.6% for hypothesis I did not constitute a problem to the study because the F- statistics value of 18.52637 with an associated Prob.>F = 0.000000 indicates that the model is fit to explain the relationship expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. The value of adjusted R^2 of 60.6% also shows that 39.4% of the variation in the dependent variable is explained by other factors not captured in the study model. This suggests that apart from ECD, RVG and FSZ there are other factors that mitigate EVA of quoted Oil and Gas in Nigeria. The results in table 4.3 illustrated that ECD has a positive and significant relationship with EVA measured with a beta coefficient (β_1) = 2.980494 and t- value of 4.996923 respectively and p- value of 0.0000 which is statistically significant at 5%. The result of this study is in consistent with Atang and Eyisi (2020); Yongliang, Wen and Li (2020); Muturi (2019); Azhar and Meiryani (2019) but contradicts the findings of Mohamad, Rahayu, Kaujan and Irwandi (2020); Iheduru and Chukwuma (2019); Aliyu, Adejola and Nguavese (2018).

The regression coefficient for hypothesis II revealed that one unit increase in PCECD would exert 90.73% increase on EVA. Overall, the combined and the overall effect of the regressors - PCECD, RVG and FSZ of quoted oil and gas firms in Nigeria, is shown on the model probability summary of the regression results. The F-statistic of 4.145136 with an associated Prob(F-statistic) of 0.002697 is statistically significant at 5%, which reveals that the model is well fitted, while the coefficient of determination; adjusted R^2 of 0.313610, explains the individual variation of the dependent variable (EVA) as a result of the changes in the independent variables (PCECD, RVG and FSZ). It can be said that PCECD, RVG and FSZ have combined predictive power of 31.36% in affecting EVA of quoted oil and gas firms in Nigeria. The result of this study corroborates the results of Khaled, Elnahass and Salama (2020); Emeka-Nwokeji and Osisioma (2019); Okegbe and Ofurum (2019); Lyndon and Sunday (2018) but inconsistent with the results of Xiaopeng, Xueyao and Yongliang (2020); Putri and Wahyudi (2019).

From the findings in hypothesis III, the value of adjusted R squared was 0.815388, an indication that there was variation of 81.5% on EVA due to changes in CCD, RVG and FSZ. This implies that only 81.5% changes in EVA of oil and gas companies could be accounted for by CCD, RVG and FSZ, while 18.5% was explained by unknown variables that were not included in the model. The probability of the slope coefficients indicate that; P(x_1= 0.0000<0.05; x_2= 0.0008<0.05; 0.0000<0.05). The co-efficient value of; β_1= -0.467415 for CCD implies that EVA is statistically significant however, negatively related to CCD at 5% level of significance; β_2= 0.115136 implies that RVG has a significant positive relationship with EVA, while β_3= 0.003525 implies that FSZ has a significant positive relationship with EVA. The findings of this study supports the works of Mohamad, Rahayu, Kaujan and Irwandi (2020); Lastri and Hasyir (2019); Oyedokun, Egberioyinemi and Tonademukaila (2019); Olaoye & Adekanmbi (2018) but failed to corroborates with results of Abdullah, Mahmuda, Malik, Pratiwi, Rais, Dja'wa, Abdullah, Lampe and Tjilen (2019).

The value of the Adjusted R-squared in hypothesis IV showed that 45.4% of the total variation in dependent variable (EVA) is explained by independent variables (RDCD) and control variables (RVG and FSZ) to the determination of EVA while the remaining 56.6% is caused by other explanatory factors outside this model and this is captured by the error term. The coefficient result shows that RDCD (β_1=0.565339); RVG (β_2=0.139865); FSZ (β_3=0.067412) are positively related with EVA. The probability value of the slope coefficients indicate that (x_1=0.0000<0.05; x_2=0.0037<0.05; x_3=0.8692>0.05). This implies that EVA has a significant positive relationship with RDCD and RVG; a non-significant positive relationship with FSZ. The Durbin-Watson figure of 1.669360 indicates the absence of autocorrelation in the regression model. The overall performance of the model is satisfactory as shown by Prob(F-statistics) = 0.000068. The results of this study supports the findings of Depoers (2020); Nguyen, Ta, Lai, Dao and Cao (2020); Baalouch, Ayadi and Hussainey (2019), Dike and Leyira (2018) but not consistent with the findings of Eichholtz, Holtermans, Nils and Erkan (2019); Marco, Favino & Netti (2019).

The results f hypothesis V showed that EWTCD and RVG have a significant positive effect on EVA, while FSZ has a non-significant positive effect on EVA This can be seen from the coefficients and probability of t-statistics in table 4.23; β_1= 1.539293**,** Prob = 0.0000 < 0.05;

$\beta_2 = 0.069637$, Prob = 0.0000 < 0.05; $\beta_3 = 0.082004$, Prob = 0.8384 > 0.05. Furthermore, the Adjusted R- squared which is the coefficient of determination shows the magnitude of variations caused on EVA by the explanatory variables (EWTCD, RVG and FSZ) to be 0.684. This indicates that about 68.48% variation in EVA is attributed to the influence of the explanatory variables (EWTCD, RVG and FSZ) while the remaining 31.6% is caused by other explanatory factors outside this model and this is captured by the error term. This study in in consistent with the works of Le (2020); Falope, Offor and Ofurum (2019); Salehi, Tarighi & Rezanezhad (2019); Agboola and Oroge (2019); Thi, Thi and Thi (2019); Ojiakor, Ezuwore and Ozioko (2018) but negates the findings of Sarumpaet (2020); Nuzula (2019); Shariful, Rahman and Wan-Nazihah (2018).

CONCLUSION AND RECOMMENDATION

Investments in production equipment might be made in order to reduce environmentally hazardous emissions. Such investments are considered environmental costs. Most investments however are not made solely for environmental purposes but also to increase the utilization capacity. These investments are not considered as entirely environmental but also as regular investments. In these cases the environmental costs only consist of the part of the investment considered an environmental investment. Waste produced by a process often has to be processed before being released to the environment. Some of the waste can be handled by the company itself, other waste is better handled by external waste treating companies. Handling of the waste causes environmental costs either way. The cost of waste transportation is also considered an environmental cost to include depletion of natural resources, noise and aesthetic impacts. Residual air and water emissions, long-term waste disposal. Thus, accounting became concerned with achieving new goals such as measuring and evaluating potential or actual environmental impacts of projects on organizations' performance. These new goals are of great importance as they enable many users to take different development decisions that are economically and environmentally sound (Bala and Yusuf, 2003). Ali (2002) identified the main reasons of accounting interest in the environment to include; environmental costs which can be significantly reduced and eliminated as a result of business decisions, ranging from operational and housekeeping changes to investment in cleaner production, to redesign of processes/products. Also environmental cost (and, thus potential cost savings) may be obscured in overhead accounts or otherwise overlooked. For the above reasons, it is believed that accounting should be responsible for measuring, evaluating and disclosure of environmental performance in financial statements or in its attachments. No doubt that measuring environmental performance depends on accounting systems but needs data, other than the conventional accounting data, such as pollution ratios. Monetizing environmental issues may not be totally accurate but, economists and accountants have to give best estimates, according to the current level of knowledge, and techniques used (U.S. Environmental Protection Agency (EPA), 1995 and Hamid, 2002).Based on the findings of the study, the following recommendations were made: Companies should carry out operational impact evaluation. This is in order to evaluate the effect of their operation on the community, the environment and the people. This will be able to audit and control their CSR practices. It will help them check unwholesome practices. Host communities and other stakeholders should hold the companies accountable forthe performance of their corporate social responsibility. They should demand for proper operational impact evaluation and such evaluation should be reported to them timely Government should enact regulatory laws that will ensure that companies carry out the corporate social responsibility. Extant laws should be properly enforced.

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Thermal Comfort Consideration in the Design of Poultry House of Semi Arid Region, a Case Study of Maiduguri

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Abstract: *Thermal comfort in the design of poultry house of semi arid region needs a micro climate that has a temperature of about 21 to 22 ºC which is known as comfort zone for laying chickens. The objectives were to determine; thermal comfort of birds in hot climate; space consideration at design stage of the poultry housing; and orientation of the poultry house. The data was collected through case study and oral interview of farm staffs in Goteri farm and Poultry Production Unit (PPU) here in Maiduguri. Data collected were analyzed using photographs and drawings. The findings shows that, both houses are open sided, oriented north-east, with dimension of 12x14 meters each. With slope gradient of the roofs having 30º and 26º respectively. With trees plantations and shrubs to create a micro climate. The room temperature during the hot season ranged from 38℃-40℃. It is recommended that, the width of the building should not exceed 12m and headroom minimum height of 3.5 meters with high pitch roof for ease of management and better production. East- West orientation can reduce direct solar radiation, electric humidifiers, foggers, sprinklers also use in managing the micro climate inside the poultry house. Insulating material on roof and side walls can help in reducing heat building up in the interior of the open sided cage during the hot period.*

Keywords: Poultry housing, Design, Orientation, Thermal comfort

Introduction

Poultry production has occupied a leading role in the agricultural industry worldwide in recent years. The compound annual growth rate of poultry protein between 2015 and 2025 is estimated to be +2.4% (Nan-Dirk, 2018). Asia, South America, and Africa characterized by rapid urbanization, poverty, and hot climate recorded the highest growth increment in poultry production (Nan-Dirk, 2018 and Daghir, 2008). Extreme weather conditions in the tropical regions of the world have proven generally detrimental to livestock production and is particularly of interest in chicken because of the latter's high sensitivity to temperature change (Nienabar 2007 and Renaideau *et al*,. 2012). Just like mammals, the avian species have the ability to regulate their body temperatures by losing or generating heat in response to environmental temperature.

In terms of design the width of the open-sided poultry house should be about 30 ft (9.8 m) and no more than 40 ft (12.2 m) wide. Houses that are wider will not provide ample ventilation during hot weather. Wider houses also require additional interior supports that may interfere with equipment or manure removal. This width recommendation is basic for growing birds, broilers, and laying hens (Alchalabi, 2013). The sidewall consists of a dwarf wall built up to the roof eave with a permeable membrane such as a corrugated wire mesh and an adjustable curtain. A minimum height of 0.4 m is recommended to prevent the house from water seepage, direct and indirect solar radiation, pests, and predators (Daghir, 2008).

A roof slope of 45° was recommended because the angle reduces the heat gain of the roof from the direct solar radiation, it maximizes the distance of the bird from the heat accumulated under the roof, quick escape of the heat accumulated under the roof through ridge opening, maximization of air space to improve air exchange rate and open space above for installation of equipment (Clark, 2013, Daghir, 2008). Roof overhang can be used to shade the sidewalls of a building from direct and indirect solar radiation. However, the length of the roof overhang is dependent on the height of the sidewalls (Daghir 2008). Heat gain by the sidewall can be reduced by about 30% through roof overhang shading if properly applied at a roof slope of 45° (Clark, 2013).

In order to reduce the exposure of sidewall to direct sun radiation the poultry house should be orientated in the east-west direction (Daghir 2008 and Clark, 2013).This is very vital, because heat stress in birds can be hastened when they are exposed to direct solar radiation. Deep litter rearing may allow the birds avoid direct sunlight but this may lead to clustering or overcrowding of birds in an area of the house. Consequently, make cooling difficult and in severe cases this leads to stampede and even death (Daghir 2008).

Thermal comfort is the state of mind, which expresses satisfaction with the thermal environment. (Joost van Hoof and Hensen, 2010). For the characterization of the ideal thermal environment for the animal, the effects of wind, radiation, humidity, and temperature are considered as important parameters (Baeta & Souza, 2010).

In poultry the body which normally runs between 39.4 and 40°C, with rise in degrees temperature it affects the productivity of the birds. Heat stress in poultry production had resulted in under-nutrition, stunted growth, reduction in egg production and size, laying of premature eggs and even death (Bawa *et al*,. 2001, and Irshad *et al*,. 2012). According to Furlan and Macari (2008) reported that for one day old chicks the suitable thermo neutral zone is between 33 °C to 35 °C with 65% to 70% relative humidity.

In poultry, temperature control in buildings is considered to be the greatest difficulty in handling broiler chickens (Belusso & Hespanhol, 2010). As they grow and reach between ten and fifteen days of life temperature belonging to the zone of thermal comfort is reduced between 24 ºC to 33 ºC, while for the fourth week of age and after the sixth week, the authors indicate that the recommended temperature becomes between 21 ºC to 22 ºC. Studies pointed that birds exposed to high temperatures, from 32 ºC to 38 ºC, suffer and may have panic, watery stools, bristling legs, open wings, depression and increased water consumption (Tan *et al*., 2010). In another experiment, it was observed that birds exposed for three hours at an ambient temperature of

35°C showed a state of heat stress, where it was possible to verify the increase in body temperature, respiratory alteration, and a dispersed distribution in the cage (Han *et al.,* 2010).

Methodology

Study Area

The study was conducted in Maiduguri the capital city of Borno state. It is located at the central part of the state and fall within the latitude 11°50’48.91’’N longitude 13°9’25.63’’E. It covers an area of approximately $50778km^2$ and has a population of about 1,907,600 as of 2007. Maiduguri shares boundaries with Mafa to the east, Benisheik to the west, Konduga to the south and Nganzai local government to the north. It is located within the Sudan savannah region of Northern Nigeria with tree distinct seasons; namely dry cold, dry hot and wet season

Research Design

The research design chosen for this study is case study research. The interview involved semi-structured interview with head of the poultry farms and their workers. The interview was based on guides that include questions about their perception of the building and the immediate surroundings, which facilitated for the respondent to discuss about what they thought, were important within the themes.

In considering the thermal comfort in poultry farm the following aspects of the housing will be considered. Namely site selection, orientation, building materials and design of the building.

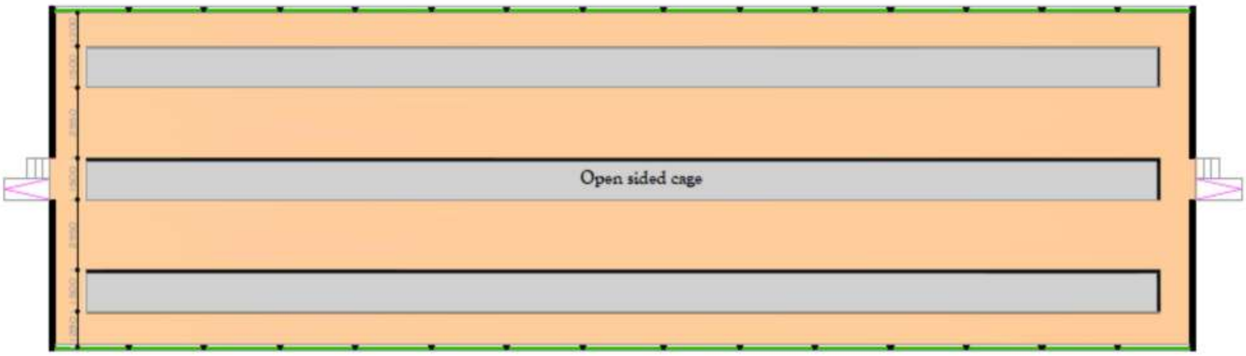
Case Study one: Goteri farm Maiduguri

The poultry farm own by individual and established in 2014. Consisting of three different sections, the brooder the growing and rearing (battery cage system). The layers are kept in 3 tiers battery cage, the battery cage has dimension of 2.2m (width) x 2.2m (length) which has 24 cells with a capacity of 3-4 birds per cell forming a unit. Due to high temperature of the tropical region they are housing 3 birds per cell; each unit is accommodating 72 laying chickens as at when obtaining the data and had an oral interview with the farm manager. The large open sided cage has a size of 12m x 45m having 3 rows with 66 units with total number of about 4752 layers.

The room temperature during the hot season is average of 38℃ which is above the thermal comfort of the laying chicken. The measures applied in reducing the excess thermal heat were the use of fan, fogger, and drencher on top of roof as well as tree plantation at the environment.

Figure 1.0

Floor plan of Case study one



Source: Author field work

Figure 2.0

Photograph of Case study one

Figure 3.0

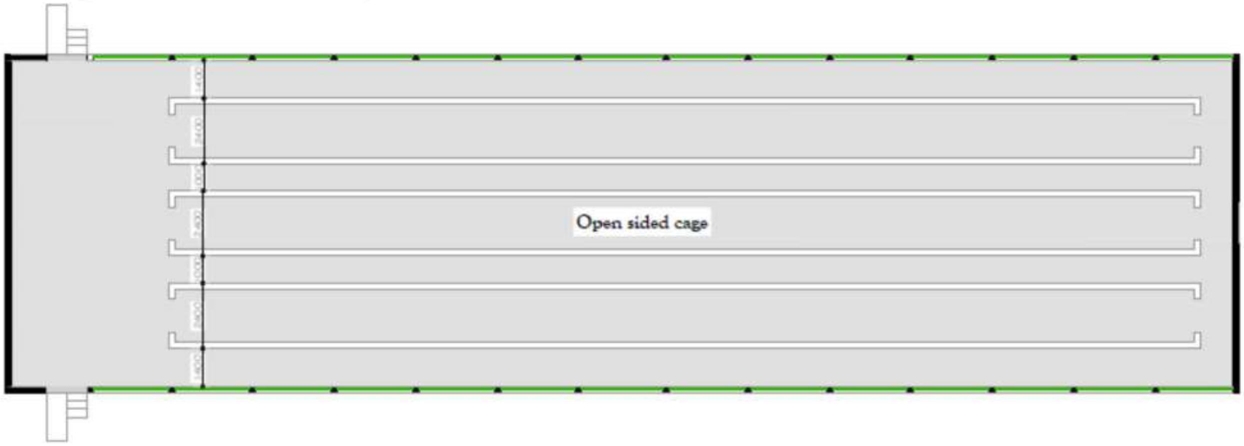
Photograph of Case study one

Case Study two: Poultry Production Unit (PPU) Ministry of Animal Resources and Fishery Development Gamboru Ngala Road Maiduguri

The Poultry Production Unit (PPU) own by Borno state government. It was established and formally commission on 27th April, 1974. Consisting of four different sections: the feed mill, brooder, growing and rearing. The layers are kept in 3 tiers battery cage and dip liters. The battery cage has dimension of 2.4m (width) x 2.4m (length) which has 24 cells forming a unit. each cell accommodating 3-4 birds but due to high temperature of the tropical region they are housing 3 birds in a cell, each unit accommodating 72 laying chickens as at when obtaining the data and had an oral interview with the deputy farm manager. The large open sided cage has a size of 12m x 45m having 3 rows with 54 units with total number of about 3888 layers.

The room temperature during the hot season is average of 39°C which is above the thermal comfort of the laying chicken. The measures applied in reducing the excess thermal heat were the use of fan, fogger, and as well as tree plantation at the environment.

Figure 4.0
Floor plan of the Case study two



Source: Author field work

Figure 5.0 Photograph of Case study two

Figure 6.0 Photograph of Case study two

Findings and discussion

Result shows that the two different case studies; Goteri farm and Poultry Production Unit (PPU) have the same dimensions, the widths of the buildings are 12meters, and the lengths are 45 meters respectively. The width of the open-sided poultry house should be about 30 ft (9.8 m) and no more than 40 ft (12.2 m) wide. Houses that are wider will not provide ample ventilation during hot weather. Wide houses also require additional interior supports that may interfere with equipment or manure removal. This width recommendation is basic for growing birds, broilers, and laying hens (Alchalabi, 2013). The roof slope of 30.26° and 32.56° for Goteri farm and PPU respectively was quite below the reports of Daghir(2008) and Clark(2013) where they reported recommended slope of 45° which reduces the heat gain of the roof from the direct solar radiation; maximizes the distance of the bird from the heat accumulated under the roof.

The orientation of Goteri farm shows that, the shortest side facing East-West direction while the longest side facing Norh-south and the orientation of PPU shows that, the shortest side facing SouthEast – NorthWest direction while the longest side facing NorthEast- SouthWest Direction. Both farm structure coresponds with Daghir(2008) and Clark(2013) where he says if reduces the exposure of sidewall to direct sun radiation the poultry house should be orientated in the east-west direction.

It is also recorded and observed that the comfort zone of birds in both the two poultry houses: at brooders stage required a temperature of about 33 to 35 °C, as they are growing to reach fifteen days of life temperature belonging to the zone of thermal comfort is reduced between 24 ºC to 33 ºC while for the fourth week of age and after the sixth week, the recommended temperature becomes between 21 to 22 ºC.

Recommendation

Base on the study it is recommended that comfort of birds can be guaranteed in the poultry house of semi arid region are as follows.

1. The orientation of the building, the shortest side that has no openings should face east-west or north/west-south-east and also planting of trees at the surrounding help in creating micro climate.

2. The use of insulating material on roof and side walls can help in reducing heat that build up in the interior of the open sided cage during the hot period

3. The width of the building should not exceed 12m and the headroom has a minimum height of 3.5 meters with high pitch roof.

4. Roof drenchers also recommended using at the roof apex; this can serve as a cooling agent during the hot period.

5. Use of electric humidifiers and foggers also, good in changing the micro climate inside the poultry house.

Conclusion

Thermal comfort in poultry house can only be effective if the environmental temperature is below or within the bird's thermo neutral zone. Micro climate in open sided poultry housing system can help in the tropics to improve the environment for optimum productivity of birds. Proper consideration of architectural elements such as building orientation, roof slope, roof overhang, landscape, building height, building width, building length, etc. have been reported to enhance thermal comfort for optimum production in chicken. In addition, the incorporation of cooling systems such as fogging system, sprinkling system and circulation fan in naturally ventilated design house systems have proven positive in optimizing birds' performances in general. Consequently, in cases where the environmental temperature is severely high and unbearable for birds the mechanical ventilated open housing system have been introduced.

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An Examination of Road Infrastructures in Abuja Sheraton, Maiduguri

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Abstract: *The study examined road infrastructures in Abuja Sheraton area of Maiduguri. It focuses on the the major characteristics of the infrastructure being, area coverage and length. Also, the street that houses the roads are also considered as a basis for the calculating the area and the total length. A satellite image from google maps repository was the major data collected for the study. This data was charted into ArcMap 10.6 window and digitised. This was used to obtain the area coverage and the total length of the roads. Descriptive statistics was used for the analysis. The result showed that majority of the streets are void of roads and only 11.13% of the street length was tarred. It was recommended to involve the private sector in the provision of roads and elevate public spending in the provision of road infrastructures.*

Key words: *Road, Infrastructures, Development, Paved, Tarred*

Introduction

Infrastructure is the set of fundamental facilities and systems that support the sustainable functionality of households and firms (Demurger, 2001 Demetriades & Mamuneas 1998). Serving a country, city, or other area, including the services and facilities necessary for its economy to function (Easterly & Rebelo, 1993; Gordon, 2008). Infrastructure is composed of public and private physical structures such as roads (Okafor 2020), railways, bridges, tunnels, water supply, sewers, electrical grids, and telecommunications (including Internet connectivity and broadband access). In general, infrastructure has been defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions and maintain the surrounding environment. Especially in light of the massive societal transformations needed to mitigate and adapt to climate change, contemporary infrastructure conversations frequently focus on sustainable development and green infrastructure (Adesoye, Maku & Atanda, 2010; Agenor, 2004). Acknowledging this importance, the international community has created policy focused on sustainable infrastructure through the Sustainable Development Goals (Barro & Xavier, 1995).

Is infrastructure so important to a nation's development? The answer is that once goods are produced, they need to be transported to the ports and airports for transportation to other states and countries (Berndt & Hansson, 1992). This means that excellent roads are needed to transport the goods or otherwise, they would be delayed leading to economic and reputational losses. Indeed, if a manufacturer produces goods quickly but is unable to transport them to the destination as fast as they can, then there is no point in making the goods in an efficient manner in the first place (Canning, 1999).

In an urban area like Abuja Sheraton in Maiduguri requires ample circulation where road condition and availability has become a major impediment to. Adedotun, Ogundahunsi & Oyeniyi (2016) asserted that some of the reasons for indiscriminate on-street parking is attributed to inadequate and road infrastructures. Access during wet seasons is another major issue. It is has become regular for roads and drainages to go hand-in-hand. The irregular nature of the streets is a clear indication of inconsideration for road infrastructures coupled with improper specifications and continuous encroachment into the access street. The study therefore examined the nature of road infrastructures in Abuja Sheraton considering the major characteristics such as tarred and untarred areas, the area coverage of these portions with the view to proffer physical planning measures for improvement.

The study area

Abuja Sheraton area has been in existence for the past 20 to 25 years. It is located in Jere local government of Borno State. It is located in the south eastern part of Maiduguri and covers a large area of about four-square kilometers (4sqkms). Abuja Sheraton is opposite Moduganari area. Abuja Sheraton area is a settlement under Jere local government area of Borno State. It is located in the south-eastern part of Maiduguri. It is bounded by Dala ward to the west, Maiduguri international airport to the north, and Bulumkutu ward to the eastern part. It is a 5 km journey from the Central Business District (CBD).

Methodology

Data for this study a satellite image covering the study area was obtained from google earth repository. Data on the standards for roads was also collected from secondary source (Obateru, 2010). The satellite image was georeferenced in ArcMap window to ensure its right location on the globe utilising a UTM WGS 33N projected coordinates system. The road network of the study area was further digitised to acquire the length and area covered by the roads in different categories. The area coverage and total length of each road category was automatically calculated in the attribute table of the individual shapes digitised for the road types. Descriptive statistics was further utilised to analyse the area and length which was presented in frequencies and percentages respectively.

Table1: Standard for Road Infrastructure

Road type	Street width	Metal portion	Central verge/ medium	Drainage type	Carriage type
Arterial	24	7-7.4	Yes	Double	Dual
Distributor	18	7-7.4	Yes	Double/ single	Dual/single
Access	12	7-7.4	No	Double/single	Single

Source: Obateru, (2010)

Discussion and findings

Table 2: Length of existing roads by category

Road length category	Length (m)	%
Tarred	5486.28	11.13
Untarred but paved with drainages	2297.22	4.66
Untarred	41497.14	84.21
Total	**49280.64**	**100**

Source: Field survey 2022

Table 3: Area of existing roads by category

Road area coverage category	Length (m)	%
Tarred	37612.51	5.86
Untarred but paved with drainages	15773.18	2.46
Untarred	589008.54	91.69
Total	**642394.23**	**100**

Source: Field Survey 2022

Table 2 showed that the majority of the streets constituting 84.21% are untarred, while only 11.13% is tarred. This is an indication of under provision of infrastructures in the area. Such a situation can be a serious problem during the wet season especially regarding the relatively flat terrain. Also, as small as 4.66% of the streets seems to have some construction work going on with pavements and drainages present. Table 3 showed also that only 5.86 constitute the total length of tarred roads in the area with 91.69% untarred. This is as a result of neglect or rather improper distribution of infrastructures in Maiduguri town. In some areas infrastructures are over provided while the reverse is the case for others such as Abuja Sheraton.

Road infrastructures in Abuja Sheraton Maiduguri is mostly not completed and majority of the road work has not even put in place. This means that the areas need immediate action regarding provision of road infrastructure.

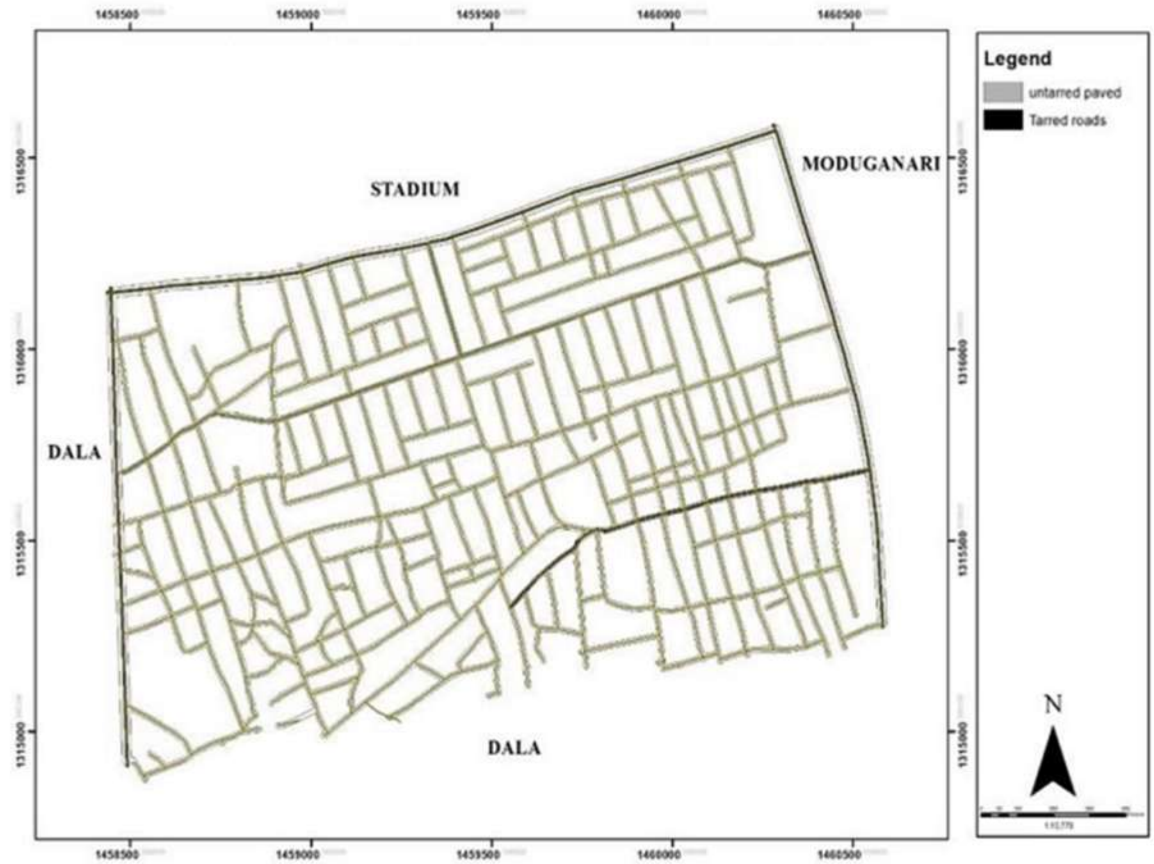

Fig 1: Distribution of Road Infrastructure Categories in Abuja Sheraton

Conclusion and Recommendation

it is obvious that without adequate infrastructure, the economy may not be able to overcome its structural challenges and achieve sustainable growth and development (Cullison, 1993; Hulton, Schwab, 2005). It will, therefore, be worthwhile for the government and policymakers to implement policies geared towards the development of infrastructure. Also, as the government cannot do it all alone, the private sector needs to be actively involved through the Public-Private Partnership (PPP), with the government creating an enabling environment for this to thrive (Munnel, 1990). Therefore, the government should effectively regulate the budgetary allocation for infrastructure spending in order of foster real sustains able growth. Likewise, the monetary authority should maintain their monetary stance and liquidity level from time to time. This to ensure that there is abundant availability to fund in the economy to take view capital intension. Lastly, since infrastructures are the major drivers of development (Mitsui, 2004) in urban areas, the public sector should finance higher capital-intensive infrastructure investment in order to make their growth contributions significant.

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Appraising the Location and Distribution of Secondary and Tertiary Health Facilities in Maiduguri

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Abstract: *Healthcare is central to community well-being as well as a fundamental aspect of life. Lack of basic health facilities and services in any community is significantly associated with poor productivity, reduced life expectancy and increased mortality rates. The study examined the location and distribution of secondary and tertiary health facilities in Maiduguri with view to provide physical planning solutions for improvement. Data was collected from GRID3 Nigeria, Global Administrative data repository, Open-street map, primary healthcare unit of LGAs and federal ministry of health. They comprise point shapefiles of health facilities, ward boundary and road network for Maiduguri town respectively. Nearest neighbour and descriptive statistical techniques were utilised for the analysis. The findings were that majority of the facilities were concentrated in Maisandari ward alone, an ample number of facilities were privately owned and the distribution and location of the facilities were clustered. It was recommended that standards for location and distribution should be strictly adhered to making sure that the appropriate professionals oversee the activity. Also, more sustainable approaches to location and distribution of health facilities, especially giving due considerations to increase in population should form the basis of policies tackling distribution of health facilities in Maiduguri.*

Key words: *Health Facilities, Secondary, Primary, Distribution, Location*

Introduction

Healthcare is central to community well-being as well as a fundamental aspect of life. Lack of basic health facilities and services in any community is significantly associated with poor productivity, reduced life expectancy and increased mortality rates (Ajala et al, 2005). This therefore necessitate the need for equity in distribution of health facilities. Both accessibility and utilization are important aspects of equitable distribution of health resources, which is based on needs of the population rather than equal distribution. Health System as an organizational set-up is charged with the responsibility of distributing and servicing the health care needs of a given population (Makinde Sule, Ayankogbe, & Boone, 2018) thereby achieving positive health outcomes. In developed nations, a tangible proportion of its wealth is budgeted to healthcare provision and sustainability, thus there is a better health outcome. In most developing countries on the other hand, there is need for increased expenditure on healthcare provision and parameters need to be put in place to ensure its sustainability. Awoyemi et al., (2017) opined that, improvement in healthcare leads to improvement in life expectancy, which serves as a robust indicator of human development.

Evidences have also shown that among the least developed countries, increase in life expectancy is strongly correlated with increase in income/productivity (Adewole, Reid, Oni, & Adebowale, 2021). Therefore, there is need for adequate and equitable distribution of healthcare services in any given country, particularly in sub-Saharan Africa, where health outcome is poorest. Healthcare provision in Nigeria is the responsibility of the three tiers of government; the Local, State and the Federal Governments, which handles the primary, secondary and tertiary health facilities respectively. The Federal Government's role is majorly limited to coordinating the affairs of university teaching hospitals and federal medical centers (tertiary healthcare) while the State Government manages the various general/specialists' hospitals (secondary healthcare). The local government on the other hand focus on Primary Health Care (PHC), which is regulated by the Federal Government, through the National Primary Health Care Development Authority (NPHCDA) (Nwakeze & Kandala, 2011)

This is particularly seen in rural areas of Nigeria and many sub-Saharan African countries, where barriers, notably distance of health facilities impedes utilization (Sanni, (2010). On these notes, Inyang (2015) opined that access to health facilities is a function of the degree of fairness in spatial distribution of the facilities. Similarly, Ujoh and Kwaghsende (2014) added that the quality of services rendered is directly proportional to the level of manpower available (Erinosho, 2006). This explains the need for adequate/qualified health professionals, who can deliver quality services to the people concerned. Studies in this field in Nigeria are limited, most of which use secondary data or Geographic Information System (GIS) to compute distribution/utilization of health facilities. Furthermore, most of these studies were conducted in the Nigerian regions of North-Central, South-South, South-East or South-West, North-Western and North-eastern regions have the poorest health outcomes in the country (Oladeji, 2006), with northeast being the worst affected area, partly due to the recent insurgency that characterized the area. Similarly, it is a common norm in developing countries like Nigeria, where most of developmental policies are targeted toward urban areas, which could be associated with lack of political-will and/or limited available evidence from rural areas. This study therefore aims to assess the spatial distribution and capacities of health facilities as well as utilization of the facilities in a semi-urban area of Borno State, NorthEast Nigeria. This study therefore is aimed at examining the location and distribution of secondary and tertiary health facilities in Maiduguri under the premise of established criteria.

Methodology

For this study point data (vector data) of the location of public secondary and tertiary health facilities for the entire Borno state was obtained from GRID3 Nigeria. this data was uploaded into the ArcMap window of ArcGIS. The data within the confines of the built-up area of Maiduguri was clipped using the clip tool. Data on the road network and wards of Maiduguri town were obtained from GADM (Global administrative Boundary) and OSGOF (Office of the Surveyor General of the federation) data repositories. Data on the population and households by wards was collected from primary healthcare units of Jere, MMC and Konduga LGAs respectively. Data on the standards for tertiary and secondary health facilities were obtained from the federal ministry of health. The point data for the individual health facilities were charted into ArcMap to ascertain their locations. Each of the facilities were buffered according to the service radius provided for in tables 3 and 4 to identify areas not under coverage. Nearest neighbour analysis technique was utilized to understand the nature of distribution for the facilities. Descriptive statistics on the other hand was utilized to understand the nature of their location and the shortfall for health facilities in the town.

Table 1: Population of Wards in Maiduguri

Names	Number of Household	Population
Ngomari	265	2120
Galtimari	1092	8736
Maimusari	3354	26832
Mashamari	758	6064
Mairi	952	7616
Old Maiduguri	4909	39272
Auno	884	7072
Bolori 1	1173	9384
Bolori 2	5563	44504
Bulabulin	1619	12952
Fezzan	1837	14696
Gamboru	2894	23152
Gwange 1	2843	22744
Gwange 2	4395	35160
Gwange 3	3095	24760
Hausari	3728	29824
Lamisula	1105	8840
Limanti	2366	18928
Mafoni	3342	26736
Shehuri North	2815	22520
Shehuri South	2307	18456
Maisandari	5701	45608
Total	**57709**	**461672**

Source: Primary Healthcare units of Jere, MMC and Konduga LGAs

Table 2: Standards for Secondary Health facilities

Secondary Health Facilities	Population	Service radius
Health care	20,000	80km
Medical clinic	2,000	24km
Diagnosis	900	10km
Chest and disease screening centre	50	15km
General Hospital	150,000	80km
Specialist	120,000	90km
Eye hospital	70,000	60km
Dental hospital	30,000	20km
Nursing home	60,000	90km
Maternity	**40,000**	**30km**

Source: Federal Ministry of health

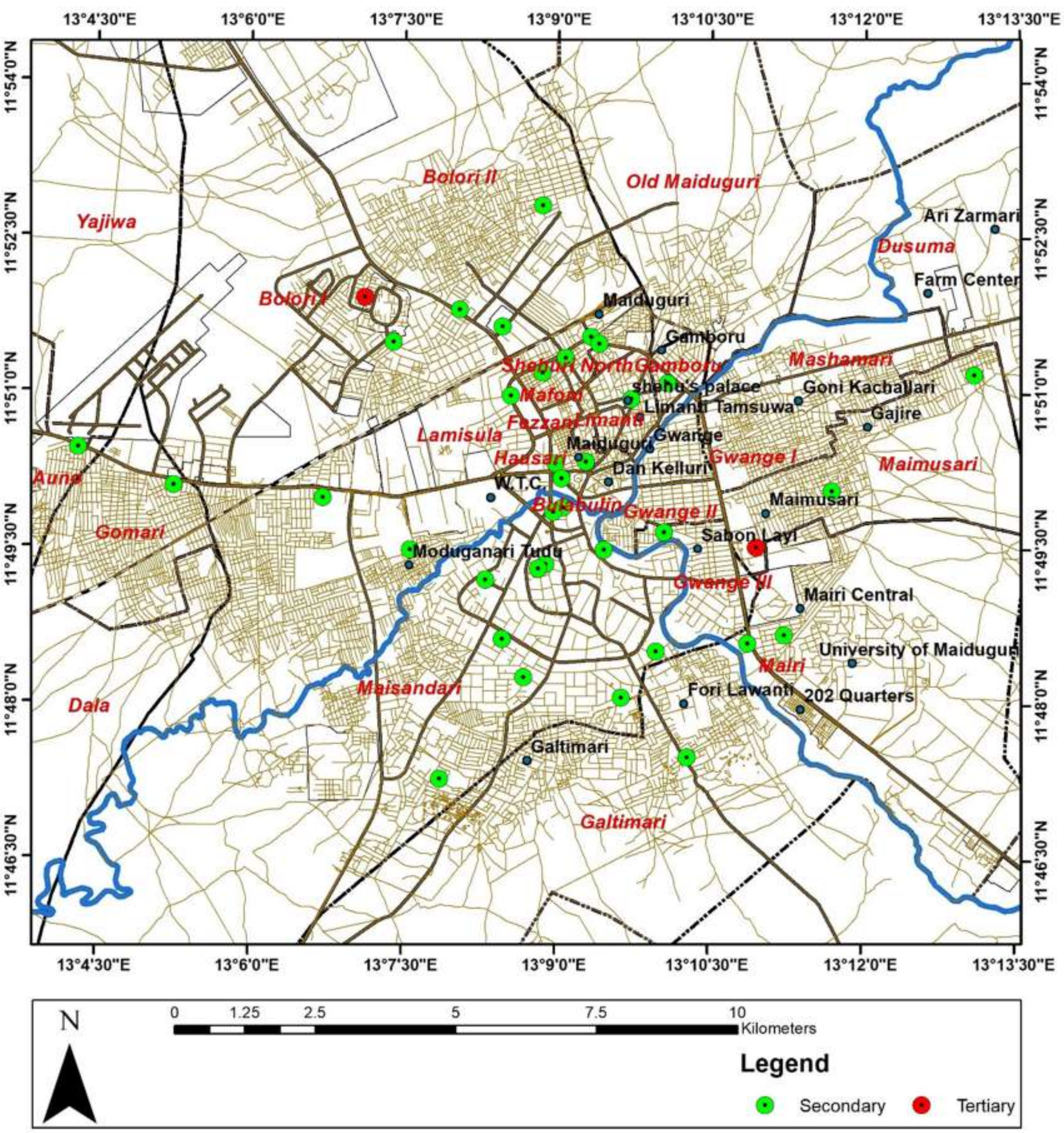


Fig 1: Distribution of Secondary and Tertiary Health Facilities in Maiduguri
Table 3: Standards for Tertiary Health facilities

Tertiary Health Facilities	Population	Service radius
Teaching hospital	Entire state	Entire state
Federal neuropsychiatric	10,000	1000km
Federal medical health centre	**15,000**	**500km**

Source: Federal Ministry of Health

Results and discussion

Table 4: Inventory of health facilities in Maiduguri town

Ward	No.	Percentage
Mafoni	1	3
Maimusari	3	8
Auno	1	3
Gomari	1	3
Mairi	2	5
Bolori 1	2	5
Bolori 2	3	8
Gamboru	2	5
Gwange 3	1	3
Hausari	3	8
Lamisula	2	5
Maisandari	13	36
Shehuri South	2	5
Galtimari	1	3
Total	**37**	**100**

Source: field survey, 2022

Table 4: Number of Health facilities by category

Health facility category	Frequency	Percentage
Secondary	35	96
Primary	2	4
Total	**37**	**100**

Source: field survey, 2022

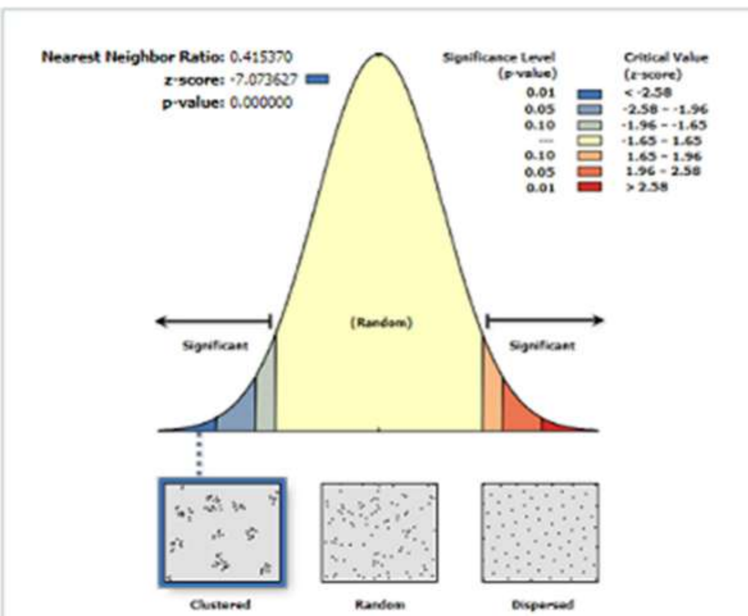
Table 4: Number of Health facilities by operator

Health facility type	Frequency	Percentage
Private	14	37
Public	23	63
Total	**37**	**100**

Source: field survey, 2022

The majority of the health facilities in Maiduguri constituting 97% are of the secondary category. Medical clinic comprises the majority out the entire types of health facilities. Also, 36% of the health facilities comprising the majority are situated in Maisandari ward alone with a considerable 37% of the health facilities being privately owned. Given the fact that spatially, Maisandari ward is the largest ward in Maiduguri town, it population is not dissimilar from other wards like Bolori II, Maimusari and Old Maiduguri. This is a clear indication that health facilities have not been distributed and located according to the population. Also, there seems to be so sense of class segregation since Maisandari House most of the low and medium density areas of the town.

Another pertinent indication is the presence of an ample number of private health facilities. With little or no regulation and overseeing operations of the facilities it can be a major drawback in terms of access to the general public especially the low-income.



Given the z-score of -7.07362652554, there is a less than 1% likelihood that this clustered pattern could be the result of random chance.

Average Nearest Neighbor Summary

Observed Mean Distance:	932.0164 Meters
Expected Mean Distance:	2243.8232 Meters
Nearest Neighbor Ratio:	0.415370
z-score:	-7.073627
p-value:	0.000000

Dataset Information

Input Feature Class:	Health Facilities
Distance Method:	EUCLIDEAN
Study Area:	805558805.371000
Selection Set:	False

Fig 2: Distribution analysis for health facilities in Maiduguri

Given the Z- score of -7.0362652554, there is a less than 1% livelihood that this clustered pattern could be the result of random chance. The results shows that the pattern of distributing for health facilities in Maiduguri is clustered. In this situation, the indication is that the respective locational standards for locating health facilities were not taken into consideration.

Conclusion and Recommendations

The research investigates the Location and distribution of secondary and tertiary health facilities in Maiduguri, Borno State. This study cover issue regarding the adequacy of the location and distribution of secondary and tertiary health facilities in Maiduguri. And limits itself to only location and distribution of secondary and tertiary health facilities in Maiduguri. Maisandari ward carries the majority health facilities. A total of 96% of are of the secondary category with 63% being public facilities.

It is important to adhere strictly to the set-out standards for the location and distribution of health facilities both by the federal and state government. Population is another important component that influences the location and distribution of health facilities. Though population must continue to increase by time, it is indedd pertinent for the government to involve necessary professionals to provide sustainable location and distribution formulars that can stand the test of time regarding the facilities. Policies for location and distribution should also be made flexible and continually reviewed.

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Issues Confronting Management of Gwange Cemetery in Maiduguri, Borno State-Nigeria

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Abstract: *Disposal of the dead is not typically considered an urban or landscaping planning problem, but how we managed the deceased spans a set of public issues that planners and managers often encounter. Recently, a lot of issues and challenges have arises in the management of cemetery caused by the increase in human population and development. This study examines the challenges associated with management of cemetery using case study research design with the aim of examining the challenges facing the Management of Gwange Cemetery in Maiduguri Borno State. Interviewed were used for the collection of primary data from the staffs of the cemetery. Questions in the interview probed into what things required management in cemetery, management techniques adopted for the management of cemetery, and challenges associated with management of cemetery. Primary data collected were analyzed using content method of analysis. The Study revealed that the major challenges of Gwange cemetery are insecurity and unavailability of space. The study recommended that the security standard of cemeteries should be improved by providing adequate security needs and more space should be provided through acquisition of land from adjoining owners.*

Keyword: *Cemetery, Management, Gwange Cemetery, Maiduguri, Borno State*

INTRODUCTION

Disposal of the dead is not typically considered an urban or landscaping planning problem, but how we managed the deceased spans a set of public issues that planners and managers often encounter (Basmajian & Curl, 2010). Though, land shortage for burials is one of the many issues and challenges that emerged out of accelerated urban growth in most municipalities, the older cemeteries which were initially considered to be large are often run out space for new burials and vacant land is scarce to extent the existing cemeteries or to develop new one. According to Nigeria Population Census (NPC) they forecasted that from 2020 to 2030 Nigeria population is projected to increase by 10 percent of the current population. From this amount, increasing number of elderly is expected to increase by 60 percent (Kolbuszewski, 2001). As this cohort moves into old age and faces higher mortality rates, the absolute number of death will increase significantly, as will the subsequent demand for interment spaces.

In highly dense cities it is often hard enough to find room for the living, let alone the dead. Cemeteries devoid of religion affiliation date largely from early 19th century and many were planned as spacious landscape gardens to house human remains (Moodley, 2009). Rapid urbanization in town and cities is also resulting in fierce competition for well-located land. Further, compounding the shortage of cemeteries is the fact that a cemetery among many cultures is much more than a place of spiritual and cultural reference. As well there is often resistance among communities to adopt alternatives way of disposing the dead such as sharing the graves and refuse of graves among others hence addressing scarcity of land for cemeteries is proving difficult (Salga, 2012). Thus, this research work is aiming to discuss extensively the management of cemetery and will also assess the challenges that the managerial sector of cemetery were facing. Mohammad and Sulaiman (2012), carried out their research in Muslim community in Malaysia in which the outcome of their research stated that the major problem cemetery management is facing in Malaysia is inadequacy of land to use for the provision of cemeteries. Douglas (2013) of University of Port Harcourt Nigeria carried out his own research in different five public cemeteries in Rivers state Nigeria and he came out with the verdict that the main challenges that the managerial sector of cemetery do faced is lack of securities (i.e. cemetery is not properly secured from bad people) to be catering for the cemeteries in River State Nigeria. There was no research with regards to Muslim cemetery in Maiduguri, Borno State which established the gap. Therefore, the researcher intends to cover the gap. Hence, the following objectives will be adopted to achieve this aim:-

i To identify the problems associated with the management of cemetery.

ii To offer solution to the highlighted issues

LITERATURE REVIEW

2.0 CONCEPTS OF CEMETERIES

According to Rugg, (2006) he says cemeteries are defined by having a number of distinctive characteristic which are;

LOCATION:- Cemeteries are generally located close to but necessarily within settlements. When cemeteries were first introduced in number in the second half of 18th and first half of 19th century, many were laid out perhaps half a mile away from the populous area of town, this location also meant that cemeteries could be substantial in size far larger than the overcrowded places. Many cemeteries were in excess of 10-15 acres of land and were able to expand as required this is the most physical features of cemetery.

PURPOSE AND OWNERSHIP:- Cemeteries can also be distinguished by their purpose and ownership. The principal function of the cemetery as with many other burial sites is the interment of dead. However as with other site, the population represented by the dead is an important consideration. Generally cemeteries serve a complete community with the catchment area being an entire district or town.

SACREDNES:- A further distinguishing feature of cemeteries site is the extent to which they are regarded as "sacred". Sacredness is a concept that is in itself slippery. Dictionary definitions gives the word a range of meanings from the 'holy' and 'consecrated' implying a spiritual element through to protected from irreligious action and the almost secular in tone worthy of or regarded with reverence or respect.

2.1 TYPES OF CEMETERY

Cemeteries are the final resting places dedicated to our bodies after death. Since the mid-18th century, cemeteries have also served as city's green space allowing families and other a place to go for visiting, mourning reflecting and memorializing dead and while many people may only see a cemetery as just a place where the dead are laid to rest. According to Gillies (2014), He categorized cemeteries types as the following.

2.2.1 PUBLIC CEMETERY:- These are plots of land owned by a governmental unit within a town, city or county and are by law the public cemeteries and must be remained open for use to the public.

2.2.2 PRIVATE CEMETERY:- This often owned and operated by a corporation, lodge, community organization, military or specific family, these cemeteries are restrictive to the public and will list the owners and or caretakers at the cemetery entrance.

2.2.3 CUSTOMARY CEMETERY:- With no formal or legal status; no customary cemeteries are simply plots used by neighbors as a burying place which are further cared for by the survivors of those buried within. While they are not generally legal, these types of cemeteries are tolerated and can often be found in the rural areas.

2.2.4 THE ETHNIC CEMETERY:- These types of cemeteries can either be public or private but are owned, operated and maintained to support one religious group.

2.2.5 THE MONUMENTAL CEMETERY:- Monumental cemeteries are cemeteries in which headstone or other monuments made of marble, granite or similar materials rise vertically above the ground. However, because maintenance of monuments is the responsibilities to the family and further because of the number of graves inside the cemetery, monuments cemeteries have been considered unsightly.

2.2.6 THE LAWN PARK CEMETERY:- With commemorative plaque placed horizontally at the head of the grave at ground level, a lawn cemetery is a cemetery that void of grave mounds but covered entirely with flat grassy lawns which barely shows any evidence that people have been buried there. However, because the plaques are in the ground, many families are restricted from leaving objects on grave makers due to maintenance and the use of mowers.

2.3 CONCEPT OF CEMETERY MANAGEMENT

Cemeteries are history, memory and recollection of a community and special attention must be paid to places preservation, cleaning, and maintenance of existing flora and above all to the needs of their visitors (Salga, 2012).

2.3.1 LAND SCARCITY AS A CRITICAL ISSUE IN CEMETERY MANAGEMENT

In the context of land scarcity and despite the availability of a range of alternatives, conventional burial is still the most common and preferred. A change of mindset regarding funeral and burial practices is required and the solutions must involve communities. The funeral and burial services offered by municipalities cannot be decontextualized from the religious and cultural beliefs that people hold (Salga,2012).

2.3.2 DAY-TO-DAY CEMETERY MANAGEMENT

Cemetery management includes many skill sets. These range from the most hands-on tasks on the ground, from grave-digging to landscaping and horticulture to the higher level task undertaken by managers including the scheduling and logistics associated with running a cemetery.

On a day-to-day and weekly basis the cemetery officer and horticulturalist have to plan for the funerals that have been booked in their cemetery, taking care of everything from the booking of the grave and burial method to the digging of the grave and making sure each burial goes smoothly. They also have to manage the flow of visitors to the cemetery paying their respects at the graves of loved ones and perhaps unveiling tombstones, ensure their security and the maintenance and upkeep of the cemetery (Salga, 2012).

The cemetery manager oversees a team of horticulturalist, cemetery officers and gardeners. Each cemetery has a cemetery officer who reports to the cemetery manger. The cemetery officer informs the cemetery manager for the municipality of the logistic at the grave site itself; the number of funerals that have been booked through undertakers and weather they for first burial, or burials and other categories. Based on this information the head gardener decides how many graves should be dug and confirms this figure in consultation with the cemetery manager. Gardeners are responsible for maintenance and digging the holes for graves. In the past this used to be done by hand but it is now using a tractor with a back hoe.

2.3.3 CEMETERY MAINTENANCE

Cemetery maintenance covers a lot of different areas. The access road, internal roads and internal walkways either needs to be tarred or if dirt, then graded and kept smooth and passable in all weathers. Fences, gates and building structures must be maintained as well as signage and grave numbers. Horticulture issues include mowing of lawns, weed control, watering and pruning trees shrubs and flowers. Finally water, sewer and storm-water drains must be kept in good working order. (Rugg, 2006). Cemetery management is a profession that is not often spoken of, but it is so essential in one of the most important rites of life, the final goodbye. (Douglas, 2013).

2.4 THE CHALLENGES IN CEMETERY MANAGEMENT

The burdens of day-to-day management, long-term planning and sustainability remain with cities. Each city is affected differently due to differing land sizes, budget, population size, religions, cultures and other elements. (Salga, 2012)

2.4.1 SHORTAGE OF LAND FOR CEMETERIES

The major challenges facing the cemetery sector is the unavailability of land for the use of cemeteries. Apart from the high demand for in-ground causing the shortage of space, cemeteries have also been located on unsuitable land. This is because environmental legislation relating to the suitability of the soil and the gradient of the land is either insufficient or not enforced. In some cities cemeteries are located near water source and the challenges are compounded by non-adherence to burial standards regarding grave depth. (Salga, 2012)

2.4.2 LOW UPTAKE OF ALTERNATIVE BURIAL METHODS

Miles (2005) a key solution to the admonishing availability of land is the introduction of burial alternatives. Many of these have existed for many years around the world, but are not actively practiced in most of African countries. There is limited knowledge of an exposure among communities to alternative ways of interment which would reduce this pressure. Example of this is cremation, cremation reduces mortals remains as the body is burnt to ash, cremation is permissible in the Christian, Jewish, Hindu, Parish but however forbidden by Islam religion.

2.4.3 INSUFFICIENT BUDGET FOR CEMETERY SERVICES

Budget for the cemetery sector is quite constrained. In most of our cities the situation has worsened as there is not much needed infrastructures in the cemetery like offices space, water, fumigation equipments, worship/meditation space, gardening tools, lawn mowers e.t.c, due to how budget or contribution from the government to the cemetery sector (Gillies, 2014).

2.4.4 COMMUNITY RESISTANCE

Rugg (2006) cemeteries (some) are so close to residential areas that the risk of under water contamination is very high.

THE STUDY AREA

Maiduguri town is the capital and the largest commercial centre of Borno state, Nigeria. Borno state is located in the northeastern part of Nigeria. It has an area of 70,898 km2 (Max Lock Group, 1976). The city has an estimated population of 1,197,497 in 2007. Its citizens are mostly Muslim and largely Kanuri. There are also a considerable Christian population and other ethnic groups (Borno State Dairy, 2007) Gwange Cemetery as it is popularly called has been in existing since the birth of Maiduguri It is located at Gwange neighborhood along Bama road and considered as the largest Muslim cemetery in Maiduguri, Borno State

3.0 METHODOLOGY

Quantitative research methods were applied in this study. The respondents were given a questionnaire to fill out. The participants in this study are staff of the Gwange Cemetery in Maiduguri metropolis. As a result, the study's population comprises all staffs in the Cemetery. As such, a total of 14 staffs of the Gwange cemetery make up the sample frame and thus was selected for distribution using krejcie and Morgan Table. Judgment sampling will be used since the researcher has considered the staff of cemetery as the target population and they are likely to provide the requisite data or information.

PRESENTATION AND DISCUSSION OF RESULTS

3-0 Result and Discussions

Table1: Demographic Data of the Respondents

TABLE: 3.1.2: RESPONDENT BY GENDER

GENDER	NUMBER OF RESPONDENT	PERCENTAGE (%)
MALE	14	100%
FEMALE	-	-
TOTAL	14	100%

From the table above, the total numbers of respondents were fourteen (14) by the researcher in which all the respondents are male by gender which makes 100% of the population. This analysis shows that all the staffs and workers working in Gwange cemetery are male which implies that not even a single female is working there and the sole reason for this is due to its sacredness according to male respondent.

TABLE: 3.2.2: **EDUCATIONAL LEVEL OF RESPONDENT INTERVIEW**

LEVEL	NUMBER OF RESPONDENT	PERCENTAGE (%)
PRIMARY CERT.	4	29%
O. LEVEL CERT.	4	29%
NCE/ND CERT.	-	
HND/BSc CERT.	6	42%
OTHER	-	-
TOTAL	14	100%

From the table 3.2.2 above it revealed the educational level of the respondents as those with primary and secondary school certificate constitutes 29% each while those having HND/BSc holders has the highest number representing about 42.% of the respondents. This suggested that majority of the respondents were HND/BSc holders

TABLE: 3.2.3: WORKING EXPERIENCE OF THE RESPONDENT

RANGES	NUMBER OF RESPONDENT	PERCENTAGE (%)
0-5 YEARS	2	14%
6-10 YEARS	5	36%
11- 15 YEARS	3	21%
16 YEARS AND ABOVE	4	29%
TOTAL	14	100%

From the table 3.2.3 above it shows working experience of the respondents with those between 0-5 years representing 14%, 6-10 years constitutes 36%, 11-15 years representing 21% and those above 16 years representing 29%. Hence the studies revealed that majority of respondents have between 6-10 years working experience in cemetery management

WHAT IS THE RATE OF USER'S TOWARDS THE USE OF GWANGE CEMETERY BY THE COMMUNITY?

Respondent 1: based on the Questionnaire administered it shows that there is high rate of patronage by the Muslim user's towards the usage of Gwange cemetery. The above shows that people of Maiduguri preferred to make use of the cemetery which resulted to them undertaking most of the maintenance carrying out there.

HOW OFTEN IS THE INCREASE OF PEOPLE USING GWANGE CEMETERY FROM YEAR 2016-2021?

Respondent 1: based on the Questionnaire administered, seven (7) respondents answered that the increase in usage of the Gwange cemetery in Maiduguri is by 80-90%.
Respondent 2: Five (5) respondents said 75-100%. This implies that from year of establishment till now there is a wide range of increase in people that make use of the cemetery rather than burying their dead at home.

HOW DID YOU KEEP RECORDS?
Respondent 1: the Questionnaire administered shows that, Gwange cemetery does not have a record of their user's because there is no any evidence of record keeping by the staffs of the Gwange Cemetery when ask to shows us their record.

WHAT ARE THE MAJOR CHALLENGES CONFRONTING GWANGE CEMETERY?
Respondent 1: Nine (9) respondents tell the researcher that the major challenges facing Gwange cemetery is lack of fund.
Respondent 2 : Four (4) respondents answered that the challenges are insecurity and lack of facilities. This analysis shows that Gwange cemetery majorly having financial issue, inadequate security as people do come in to exhume the dead and adequate facilities is not provided, though land and community resistance is not an issue or challenges to them as of 2016-2021.

DO YOU CONSIDER GWANGE CEMETERY TO BE PROPERLY MANAGED?
Respondent 1: Seven (7) respondents said it is well managed based on the interview conducted.
Respondent 2: Five (5) respondents said it is fairly managed. This analysis shows that the management of Gwange cemetery is good but there is still room for improvement.

IS AN ESTATE SURVEYOR AND VALUER ENGAGED IN THE MANAGEMENT OF GWANGE CEMETERY?
Respondent 1: from the Interview conducted it is clearly shown that expertise skill of an Estate Surveyors and Valuation is not being sought. This analysis implies that estate surveyor does not partake in the process of cemetery management within the study area.

DISCUSSION OF FINDINGS

The research revealed that land issue is not part of the challenges or problems cemetery are facing in Nigeria as it is the major issue cemetery do face in some other countries like Malaysia though in Nigeria they are lacking fund to cater for those available land to be useful. Gwange cemetery in Maiduguri was once suffered from inadequacy of securities to cater for both buried corpse and cemetery facilities as some people do go into the cemetery to exhume buried corpse.

CONCLUSION

The purpose of this study is to examine issues confronting management of Gwange Cemetery in Maiduguri, Borno State. Cemeteries are not systematically managed which is causing the community to become uninterested to make visits to the cemetery. On a day-to-day basis cemetery managers are required to meet burial needs of the community they serve, which they do under trying circumstances. Sustainability for the future is a key issue. The study concludes that those responsible for managing cemeteries in cities are left to their own devices in finding solutions to these problems. Cemetery management is a profession that is not often spoken of, but it is so essential in one of the most important rites of life.

RECOMMENDATIONS

The Government should be contributing more to the sector of cemeteries by issuing adequate or separate budget for the cemetery services as their budget is quite constrained, this will give cemetery sector rooms to improve their infrastructures like offices space, backhoe tractors, fumigation equipment, worship or meditation space, gardening tools e.t.c.. Cemeteries should also be located at a far distance to the city where people resides as to prevent the risk of underwater contamination because the hazard can pollute the underwater., The number of security officers and patrols should be increased and they should be given adequate securities needs, CCTV cameras can be installed to cemeteries as to monitors criminal acts like exhumations of buried corpse.

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