



RELATING THE SMART GOALS COMPONENTS IN ASSESSING THE SUCCESS OF THE FOOD SECURITY INITIATIVE IN NIGERIA: AN EVALUATION OF THE FOUR COMPONENTS OF FOOD SECURITY IN NORTH EAST NIGERIA.

¹SADEEQ GARBA ABUBAKAR; & ²YUSUF OVA MUTALIB

¹Department of Business Administration and Management, Federal Polytechnic, Bauchi, Bauchi State, Nigeria. ²Department of Accountancy, Federal Polytechnic, Bauchi, Bauchi State, Nigeria.

ABSTRACT

Food Security is defined as “assuring the availability and price stability of basic foodstuffs at the international and national level.” The World Food Summit agreed “ that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Globally, countries agreed/adopted the initiative. This study is to assess the global food security initiative in Nigeria by adopting the four cardinal components of the Smart Goals as bench marks to determine how far the country had achieved food security based on the initial set goals. The research design adopted the external desk research approach using extensive data from previous research on the subject of food security in Nigerian north east. The analysis of data suggests a negative viewpoint that the objectives of the food security initiative could hardly be achieved. The findings indicated the incidence of insufficient food production due to the dearth of infrastructural facilities, civil conflicts/insecurity, which posed serious challenges to the achievement of food security. Nigeria as a country might not easily achieve the objectives of the food security initiative with the prevalent increase of food shortages caused by the insecurity in the Northeast Nigeria. It was posited that the country should re-evaluate its strategies in implementing the food security initiative based on its peculiarities, challenges, current realities, and possibly

within the global standard and time frame. The enabling environment must be created to achieve the desired goals based on the current actualities in each country while taking cognisance of the global standard. There ought to be SMART goals criteria that would provide a clear and objective framework for setting and managing goals. The use of properly constructed criteria to serve as credible and usable yardsticks by which results can be monitored and evaluated is a key factor that should be considered, hence the recommendation for the adoption of the smart goals OITT goal framework or any other similar framework organized for the purpose.

Keywords: *Food Security Initiatives; Smart Goals Components & frameworks; Peculiarities; Challenges; Global Standards.*

INTRODUCTION

Food Security Initiative

The term ‘Food Security’ was first heard in the mid-1970s, at the World Food Conference. The first World Food Conference was held in Rome in 1974 by the United Nations under the auspices of the United Nation’s (UN) Food and Agriculture Organization (FAO), in the wake of the devastating famine in Bangladesh in the preceding two years. During the conference, food security was defined in terms of supply of food i.e. “assuring the availability and price stability of basic foodstuffs at the international and national level. “The World Food Summit, 1996, agreed that food security “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Globally, countries consciously or otherwise agreed/adopted the initiative and some started working to achieve the objectives of food security.

Components of Food Security Initiative

According to FAO (2008), quoted by Matemilola and Elegbede (2017), the World Food Summit held in 1996, decided that food security “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Furthermore, from this definition, four components of food security are identifiable such as availability, accessibility, utilization and stability of food as suggested by FAO [2008] and Simon [2012. Based on the

practical guide of Food Security Information for Action (FAO 2008), all four components must be satisfied simultaneously to meet the objectives of food security.

SMART Goals Components

The key issue of history and origins of the SMART goals acronym is been introduced as a prelude to the empirical analysis and presentation that would follow in the literature review.

During the 1940s and 1950s there were many engineering and educational publications that started discussing the merits of “specific and measurable” goals or objectives. Interestingly the term mostly used in the very really days was that of goal setting rather than objective setting, even within technical environments. The fact that specific and measurable have been used almost since the beginning of the era of management and educational publications suggests that the foundations for SMART goals or objectives were widespread. The use of specific and measurable goals was just as prevalent in the educational world as it was the business world.

The SMART acronym is one of the most used in business. It has its origins in the Goal Setting Theory school of thought (Locke and Latham, 2002, Locke, 2004). One of the early articles that outlined the benefits of identifying clear goals was published by Edwin Locke, considered along with Gary Latham, one of the fathers of the theory. The article cited studies demonstrating that (1) “hard goals produce a higher level of performance (output) than easy goals; (2) specific hard goals produce a higher level of output than a goal of “do your best”; and (3) behavioural intentions regulate choice behaviour.” (Locke, 1968) The popularization of the S.M.A.R.T. acronym itself started with an article published in 1981 by George T. Doran, a consultant and former Director of Corporate Planning for Washington Water Power Company, Spokane. In his article, with the title “There is a S.M.A.R.T. way to write management’s goals and objectives” ((Doran, 1981) and this author proposed the following criteria a S.M.A.R.T. goal should meet:

1. Specific – target a specific area for improvement
2. Measurable – quantify or at least suggest an indicator of progress
3. Assignable – specify who will do it
4. Realistic – state what results can realistically be achieved, given available resources

5. Time-related – specify when the result(s) can be achieved. (Doran, 1981)
In addition, Doran (1981) made two important notes. Firstly, not all objectives must be measured across all levels of management, as in some instances the focus should rather be on the action plan for achieving the objective. Secondly, not every objective written will meet all five criteria. They should be rather seen as guidelines. (Doran, 1981)

Objectives of the study (Main and specific)

The main goal of this study was to assess the impact of the food security initiative in Nigerian North eastern states using the smart goals components as credible and usable yardsticks by which the performance of the food security components of availability, accessibility, utilization and stability can be monitored and evaluated to find justification or otherwise for the use of the global food security standards in Nigeria through findings of the study from the case study area.

This study is to assess how far the four components of the food security initiative are realized on the basis of applying the smart goals components as a benchmark for the assessment of the food security initiative in North Eastern Nigeria comprising of Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe states.

The study would be required to also address several outstanding conceptual and practical challenges including: how to deal with sustainable development objectives; the nature of environmental capacity or limits to growth; environmental assessment and precaution; adaptive planning and management systems; human and labour rights; capacity development of institutions; and stakeholder participation and empowerment.

Therefore, the specific objectives are:

- To assess the impact of food availability as a component of food security initiative in North Eastern Nigeria using the smart goals as the basis to justify the efficacy of the said component of food security.
- To examine the impact of food accessibility as a component of food security initiative in North Eastern Nigeria using the smart goals as the basis to justify the effectiveness of the said component of food security.

- To evaluate the impact of food utilization as a component of food security initiative in North Eastern Nigeria using the smart goals as the basis to justify the efficiency of the said component of food security.
- To ascertain the extent to which the stability component of food security initiative incorporates stability, availability, accessibility, and utilization of food over time using the smart goals as the basis to justify the usefulness of the said component of food security.

Problem statement

Nigeria as a country is struggling to achieve the minimum benefits of the food security initiative. This deduction could have been due to certain unforeseeable reasons that appear to be incapacitating the country's ability in meeting the global standards of achievement in actualising the food security initiatives. Nigeria is a member of the international community and need to ascertain its preparedness to meet up with the global standards. This relate to issues on food security initiative for the country's benefit as a member in the global setting. Global standards are set out on food security initiative and each country will be required to participate in the global drive for self-actualisation within the community of nations.

Nigeria, therefore, might need to re-evaluate its participation to re-strategize in implementing the food security initiative based on its peculiarities/challenges, current realities, and possibly within the global standard and time frame. This is the question in this research undertaking to which remedies would need to be sourced.

Scope of study

This study would want to attempt to unravel the likely and probable cause of the problem hindering actualising the goals of the food security initiatives through the assessment and evaluation of the components of the food security initiative in Nigeria.

This study would attempt to assess the impact of the food security initiative in Nigerian North eastern states using the smart goals components as credible and usable yardsticks by which the performance of the food security components of availability, accessibility, utilization and stability can be monitored and evaluated to find justification or otherwise for the use of the global food security standards.

LITERATURE REVIEW

Conceptualization

Food Security and Sustainability

According to Siamwalla and Valdes (1984), food security is the ability of countries, regions or households to meet target levels of food consumption on a yearly basis. Food security is a state of affairs where all people at all times have access to safe and nutritious food to maintain a healthy and active life (Gurkan, 1995). Similarly, it connotes physical and economic access to adequate food for all household members, without undue risk of losing the access.

Food security is defined as access by all people, at all times to sufficient food for an active and healthy life and includes at a minimum the ready availability of nutritionally adequate and safe foods, and an assured ability to acquire acceptable foods in socially acceptable ways (FAO, 1997; Sarah, 2003). Access to adequate food is a necessary but not a sufficient condition for a healthy life. A number of other factors, such as the health and sanitation environment and household or public capacity to care for vulnerable members of the society, also come into play (von Braun et al, 1992).

Hoddinot cited in Seid (2007) noted that there are close to 200 definitions and 450 indicators of food security. A fundamental element in this category is the household's asset base. A household with several assets can more effectively maintain its consumption level by disposing of some of these assets. Its ability to do so increases according to the proportion of assets held in liquid form. Thus, the value and liquidity of assets are important determinants of a household's ability to cope with shocks to acquirement.

Sustainable Food Security

Sustainable food security has been defined in various ways by different scholars. According to WHO (1995) and FAO, et al. (2013) food security is access to the food needed by all people to enable them live a healthy life at all times. A country is said to be food secured when there is access to food of acceptable quantity and quality consistent with decent existence at all times for the majority of the population (Reutlinger, 1985; Idachaba, 2004). This means that food must be available to the people so as to meet the basic nutritional standard needed by the body. But it should be noted that availability of food does not mean accessibility to food. Availability depends on production, consumer prices, information flows and the market dynamics.

World Bank (1986) defined sustainable food security as an access to enough food for an active, healthy life at present as well as ability to provide enough in the future. Abdullahi (2008) defined sustainable food security as when people have physical and economic access to sufficient food to meet their dietary needs for a productive healthy life at present as well as in the future. This definition outlines some indices for measuring the extent or degree of food security to be achieved by any country and the indices are adequate national food supply, nutritional content, accessibility, affordability and environmental protection.

Firstly, and according to FAO (2008) and Simon (2012), the availability component is the one which indicates that there has to be physical, social and economic access to sufficient and nutritious food by all people and at all times. Such food must satisfy the dietary needs and preference of the people. It is the amount of food physically available in a region or place. To a great extent, food availability depends on the level of local production, imports, stock levels and net trade in food items. Abubakar and Mutalib (2019) averred that the availability of food plays a conspicuous role in food security. Having enough food in a nation is necessary but not adequate to ensure that people have satisfactory access to food. According to Abubakar and Mutalib (2019), over the years, population has increased faster than the supply of food thus resulting in food unavailability per person.

Secondly, is the issue of accessibility. Also according to FAO (2008) and Simon (2012), accessibility refers to economic, social and physical access to food by all people at all times. That an adequate amount of food is available at the regional, national or international level does not imply it is accessible at household level. It must be locally accessible and affordable. Abubakar and Mutalib (2019) mentioned that the ability to have access to food depends on two major conditions i.e. economic access which depends on one's income, the price of food and the purchasing power of the people; and the physical access which depends on the availability and quality of infrastructure needed for the production and distribution of food. Lack of economic access to food is as a result of the increase in the rate of poverty (Abubakar and Mutalib, 2019)

Thirdly, Abubakar and Mutalib (2019), said that according to the aspect of utilization which according to FAO [2008] and Simon [2012) generally refers to the pattern in which the body makes use and benefits from the various food nutrients, the utilization is determined by food quality, nutritional values, and preparation method and storage as well as feeding pattern.

Abubakar and Mutalib (2019) stated that food utilization is measured by two outcomes indicators which reflect the impact of inadequate food intake and utilization. In addition, the first outcome is measured by under-five years of age nutrition level while second measurement is quality of food, health and hygiene. According to FAO (2008) measuring the nutritional status of under-five years of age is an effective approximation for the entire population. The indicators for the measurement of under-five years of age are wasting (too thin for height); underweight (too thin for age) and stunting (too short for age). Fourthly, is the stability component which according to FAO [2008] and Simon (2012) incorporates stability of food availability, accessibility and utilization over time. According to Abubakar and Mutalib (2019), stability has to do with exposure to short-term risks which have a way of endangering long-term progress. Furthermore, key indicators for exposure to risk include climate shocks such as droughts, erosion and volatility in the prices of inputs for food production. Accordingly, the world price shocks leads to domestic price instability which is a threat to domestic food producers as they stand the chance of losing invested capital.

Nigerian farmers are mainly small holders farming mainly for subsistence, this makes it difficult for them to cope with changes in the prices of inputs, and it also lowers their ability to adopt new technologies thereby resulting in reduced overall production (Abubakar and Mutalib, 2019). Moreover, changing weather patterns as a result of climate change have played a part in reducing food supply, for instance flood in the southern parts of the country and drought in the northern parts leads to substantial losses in production and income.

Therefore, the standard as articulated by Simon (2012) is that all three components of availability, accessibility, and utilization must be concurrently present at all times.

Consequently, a person who has adequate access to quality food today is still considered food insecure if he has periodic inadequate access to food which may cause his nutritional level to deteriorate. Variation in weather conditions, political and economic instability, and price fluctuation are some factor that may impact on food security status (Simon, 2012).

SMART goal setting and frameworks

Mullins (1999), Beardshaw and Palfreman, (1990), Bratton, et al, (2007) as cited by Ogbeiwi (2019), stated that there is general agreement that plans

without well-formulated goals lack rationale, strategies lack relevance, actions lack direction, projects lack accountability, and organisations lack purpose. Moreover, goals need to be properly constructed to serve as credible and usable benchmarks by which the results can be monitored and evaluated via immediate outputs, intermediate outcomes over the short term or terminal impacts in the long term (Greenbank (2001), Fitsimmons (2008), Bipp and Kleingeld (2011) as cited by Ogbeiwi (2019). Therefore, it is a basic requirement of effective goal setting that objective statements are formulated using a clear and logical structure or framework.

Typically, writing objectives as SMART statements is the gold standard for goal setting, because it gives a clear direction for action planning and implementation (CDC, 2008). The

SMART model was originally outlined by George T. Doran in 1981 as the five essential criteria that the statement of every meaningful and effective objective should fulfill (Doran, 1981; CDC, 2008; Day and Tosey, 2011).

Many programmes and organisations have since used the SMART acronym as a reliable model to guide formulation of objectives for different intervention levels by simply asking the question: ‘Is the objective SMART?’ (Ogbeiwi, 2019).

According to Ogbeiwi (2019), goal-setting frameworks have been studied extensively since the 1950s and amongst the most popular of the frameworks include: • Management by Objectives (Drucker, 1955), (Dahlsten et al, 2005), (Bipp and Kleingeld, 2011) • Balanced Scorecard Approach (Kaplan and Norton, 1996) • Goal Attainment Scale (Yip et al, 1998) • Total Quality Management and continuous quality improvement (Ginsburg, 2001, Medlin and Green, 2009). Other models have included the RAID (review, agree, implement, and demonstrate and develop) model (Parker et al, 2003), and the Productivity Measurement and Enhancement System (Pritchard et al, 2008).

Model framework Writing SMART objectives

Ogbeiwi (2019), averred that to be SMART and ensure goal clarity, according to Doran’s original criteria, and to positively influence goal attainment according to Locke and Latham’s (1990) theory, it is essential that every meaningful objective statement should specify: • The positive change or improvement desired • The measurable indicator of the change • The challenging but attainable level of the indicator • The realistic time frame of

when the change can be achieved. Therefore, SMART objective statements could be constructed using a model framework that has four components: • The outcome • Its indicator • Target level and • Time frame (OITT). Figure (1) shows an example of an objective statement constructed using the OITT framework.

According to Ogbeiwi (2019), to date, no empirical studies have investigated or reported on the goal frameworks used by goal setters for writing statements of objectives, or assessed the extent to which the objective statements formulated for their development or intervention plans are SMART.

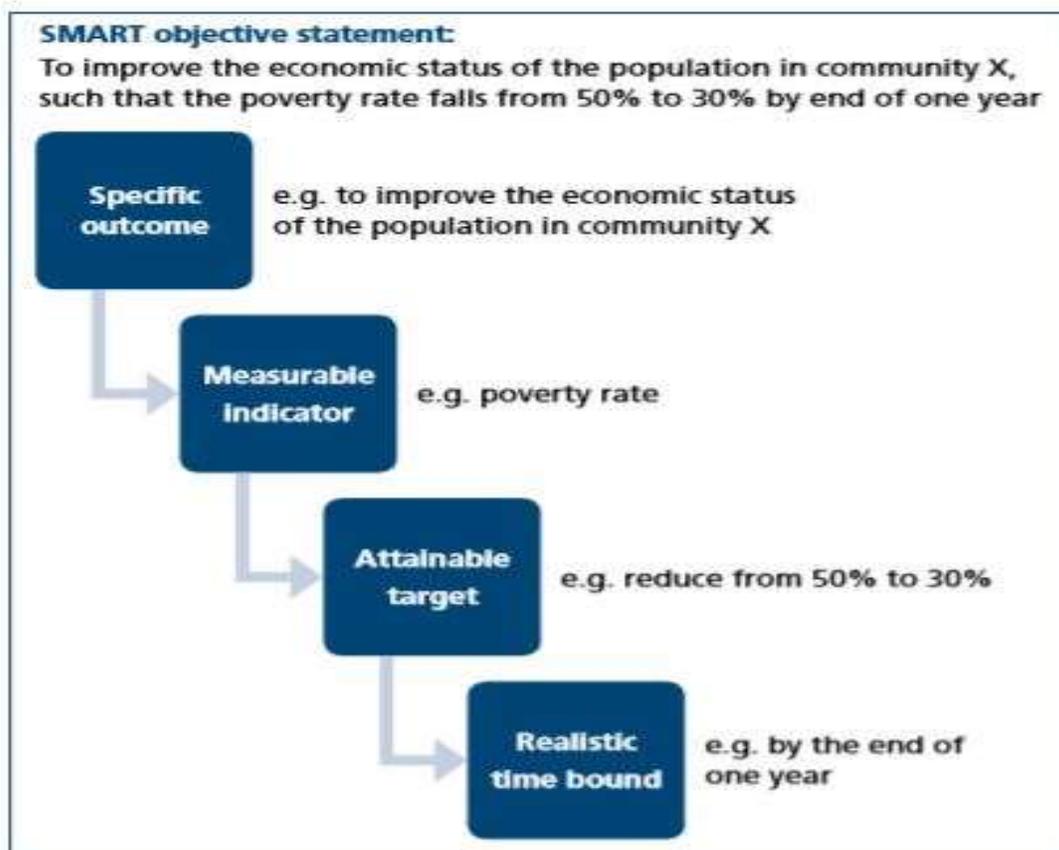


Figure 1. OITT framework of an Objective Statement (Adopted from Ogbeiwi, 2019).

Empirical Review

This study is taken on empirical review basis because it was carried on experimentation or observation from a study that was conducted (Abubakar and Mutalib, 2019) to answer some specific questions.

Purpose of the Empirical Review

With the possibility that a goal-setting research has yet been undertaken to investigate the constituent components of goal frameworks used to write a SMART objective statement, this review, therefore, analyses the goal framework of SMART objective statements with the outcome of a study conducted on the impact of food security initiative on sustainable development in North Eastern Nigeria (Abubakar and Mutalib 2019).

The review is designed to answer a core question: Are SMART objective statements really specific, measurable, attainable, realistic and time bound especially when implementing global initiatives in different countries with varied economic, social, and political standings. The World Food Summit, 1996, agreed that food security “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Globally, countries consciously or otherwise agreed/adopted the initiative and some started working and are achieving the objectives of food security while others are yet to record any feasible achievement due to certain reasons.

This study seeks to assess the impact of food availability, accessibility, utilization and stability as a component of food security initiative in North Eastern Nigeria using the smart goals as the basis to justify the efficacy of the said components of food security. In other words, the study seeks to determine the extent to which the food security components can satisfy the five SMART goal attributes of specificity, measurability, attainability, realisability and time.

Absence of food security is food insecurity

Food insecurity on the other hand represents lack of access to enough food and can either be chronic or temporary. Adeoti (1989) opine that chronic food insecurity arises from lack of resources to acquire and produce food thereby leading to persistent inadequate diet. FAO (2010) refers to food insecurity as the consequences of inadequate consumption of nutritious food bearing in mind that the physiological use of food is within the domain of nutrition and health. When individuals cannot provide enough food for their families, it leads to hunger and poor health. Poor health reduces one’s ability to work and live a productive healthy life. Poor human development destabilizes a country’s potential for economic development for generations to come (Otaha, 2013).

According to FAO, et al. (2013), the core determinants of food security are availability, accessibility, utilization and stability.

The interplay of all these variables determines whether an individual, household, state or nation is food secured or not. This is because sustainable food security at the household level does not guarantee sustainable food security at the state or national level. The theoretical framework is based on Malthus theory on population, Thomas Malthus in his writing in the 18th century warned that global population would exceed the earth's capacity to grow food. Malthus suggested that population grows in geometrical progression while food production grows in arithmetical progression. Despite having been largely debunked, this theory has remained prominent in the discourse regarding hunger, the world's population carrying capacity and the need for increased agricultural technology. Malthus argument was a warning about population increase especially among the poor because he described the poor as breeding too rapidly and depriving the rest of the population of food; famine was seen as a natural defense against overpopulation. In the Nigerian situation, current production of food is far below to be a problem in solving food security in Nigeria.

The concept of sustainable development is the result of the growing awareness of the global links between mounting environmental problems, socio-economic issues to do with poverty and inequality and concerns about a healthy future for humanity. It strongly links environmental and socio-economic issues. The first important use of the term was in 1980 in the World Conservation Strategy (IUCN et al, 1980). This process of bringing together environmental and socio-economic questions was most famously expressed in the Brundtland Report's definition of sustainable development as meeting "the needs of the present without compromising the ability of future generations to meet their needs" (WCED, 1987, p43). This defines needs from a human standpoint; as Lee (2000, p32) has argued "sustainable development is an unashamedly anthropocentric concept".

Brundtland's definition and the ideas expressed in the report *Our Common Future*, recognise the dependency of humans on the environment to meet needs and well-being in a much wider sense than merely exploiting resources, "ecology and economy are becoming ever more interwoven – locally, regionally, nationally and globally" (WCED, 1987, p5). Rather than domination over nature our lives, activities and society are nested within the environment

(Giddings et al, 2002). The report stresses that humanity, whether in an industrialised or a rural subsistence society, depends for security and basic existence on the environment, the economy and our well-being now and in the future need the environment. It also points to the planet wide interconnections, environmental problems are not local but global, so that actions and impacts have to be considered internationally to avoid displacing problems from one area to another by actions such as releasing pollution that crosses boundaries, moving polluting industries to another location or using up more than an equitable share of the earth's resources (by an ecological footprint (Wackernagel & Rees, 1996) far in excess of the area inhabited).

Another area of debate is between the views of weak and strong sustainability (Haughton & Hunter, 1994). Weak sustainability sees natural and manufactured capital as interchangeable with technology able to fill human produced gaps in the natural world (Daly & Cobb, 1989) such as a lack of resources or damage to the environment. Solow put the case most strongly stating that by substituting other factors for natural resources "the world can, in effect, get along without natural resources, so exhaustion is just an event, not a catastrophe" (1974, p11). Strong sustainability criticises this, pointing out that human-made capital cannot replace a multitude of processes vital to human existence such as the ozone layer, photosynthesis or the water cycle (Rees, 1998; Roseland, 1998). Deep Greens would go further in arguing that non-human species, natural systems and biodiversity have rights and values in themselves (Naess, 1989). The debate between strong and weak sustainability is, however, conducted mainly around environmental issues rather than taking account of socio-economic consequences.

Haughton (1999) has usefully summarized the ideas of sustainable development in five principles based on equity: futurity – inter generational equity; social justice – intra generational equity; trans frontier responsibility – geographical equity; procedural equity – people treated openly and fairly; inter-species equity – importance of biodiversity. These principles help give clarity to the ideas of sustainable development, link human equity to the environment, challenge the more bland and meaningless interpretations and provide a useful basis for evaluation of the different trends of sustainable development.

Beyond high prices of staple food items in Nigeria, drought and political situation in neighbouring countries like Chad, Cameroun and Niger seem to pose a threat to a state like Borno as they rely on the state for their food supplies.

Another problem according to the Ministry of Agriculture and Water Resources, responsible for the food crisis in Nigeria is not unconnected with the fact that “Nigeria’s agriculture is mainly rain-fed and she has not taken full advantage of its irrigation potential estimated between two and 2.5 million hectares”. The area under irrigation is officially estimated at about 220,000 hectares or less than one per cent of the total areas under crops. The contribution of irrigated agriculture to crop production is, therefore, very small (May 5, 2008).

Achieving Sustainable Food Security in Nigeria.

According to Abubakar and Mutalib (2019), it should be noted that food production is only a means to an end. Solution to achieving sustainable food security must include reduction in the level of poverty because income must be improved to enable people meet the basic necessities of life, including food.

As further enunciated by Abubakar and Mutalib (2019), reduction in poverty level takes a long time to be achieved; therefore, immediate solvable solutions must be taken and they include the following:-

1. Improved Agricultural Productivity: Different projects/schemes have been established by different governments in the country in order to improve agricultural productivity, but they have failed because poor policy implementation. Agricultural productivity can be improved through encouragement of research. Research Institutes should be funded so as to encourage innovation and participatory research. Through research, foreign technology can be modified and applied in Nigeria. Inorganic fertilizers and chemicals can be replaced with alternatives such as cow waste and composite manure which are environmentally friendly.

Also extensions services should be encouraged and strengthened because through the extension services new technology can be transferred to the farmers. There should be storage facilities to enable farmers store their post-harvest crops. Farm products are perishables; farmers are forced to sell their products so quickly thereby making revenues that do not meet their daily need. The storage facilities can help them preserve their products before taking them to the market for sale. The storage facility will also help provide enough food reserve for the country.

2. Agricultural Biodiversity: Improved agricultural biodiversity through improved agricultural practices will also increase food supply. Large scale farming involves planting one type of crop on a large piece of land, but with

improved farming different genetically improved crop types and species may be planted on a piece of land. Mono-cropping also exposes crops to both pests and diseases and also increases the use of organic fertilizers and pesticides that erode soil biodiversity. In other to achieve sustainable food security, Nigeria farmers as well as government should embrace this modern food production technique that comes in form of agricultural biodiversity aimed at increasing livestock and crop production.

3. Environmental Management: Efforts to increase productivity have led to pressure on natural resources as well as environmental damage. There should be effective management of the environment by reducing the rate of deforestation. Trees should be planted as often as possible especially in the desert. Providing habitat for agricultural pests and increasing resilience to shocks and long-term climate change can help in the improvement and management of natural resources. Tree planting should be encouraged because forest trees outside the forest helps in protecting soil and water resources, promotes soil fertility and provides protection from extreme weather events.

4. Policy Changes: Sustainable food security can be achieved if the government adopts inclusive growth in its development efforts. Development should be participatory and environmentally friendly. People-centred agricultural development puts the farmers first and attacks poverty with opportunities and education. It requires involving the rural people in decision making stages of agriculture productivity. The inability of government to involve these sets of people in defining and designing projects has led to the failure of some of these projects. There should be well designed social protection systems -such as risk insurance scheme and community empowerment- to help households sustain their resilience to shocks.

RESEARCH METHODOLOGY

In its broadest sense, methodology is defined as a “system of methods and rules to facilitate the collection and analysis of data” (Hart 2007). The system and rules will vary according to the objective of the research and the intentions and views of the researcher. This chapter describes the general research approach and outlines the system of methods and rules employed in the collection and analysis of data for this study.

This study is intended primarily to examine the impact of applying the smart goals approach (four cardinal components) in assessing its impact the

components of food security. This study seeks to assess the impact of food availability, accessibility, utilization and stability as a component of food security initiative in North Eastern Nigeria using the smart goals as the basis to justify the efficacy of the said components of food security.

Primary Research

Gathering primary research allowed the author to collect new data which could prove highly relevant. Primary research allowed the author to collect data that was not available and create new data that could answer the research questions (Ghuri and Gronhaug 2005). The advantage of collecting primary data is the fact that they are collected for a particular project; hence they are more consistent with the research questions and research objectives. For the furtherance of the research objectives, new data need to be collected even though the secondary data is available and this is because of time factor and its relationship to the insecurity in the research area.

Secondary Research

Ghuri and Gronhaug (2005) defined secondary data as that collected by a researcher from already existent sources, with the aim of developing a project or research. There are multiple sources of these types of data which include: journal articles, books, online resources amongst others. To provide an in-depth understanding on the context of this research, a review of already existent data was undertaken, which also provided a rationale for carrying out the research. *Furthermore, secondary research analyses quantitative or qualitative data which was collected by others (Bryman and Bell 2007). This was performed in the literature review. Previous research available on the topic of food security initiatives on sustainable development in North Eastern Nigeria (Abubakar and Mutalib, 2019) was sought out and analysed prior to developing the research questions.*

According to Abubakar and Mutalib (2019), the study examined the impact of food security and sustainable development in North Eastern Nigeria. Hence, the entire six (6) States in the North East form the population of the study with 498 respondents among government agencies, corporate bodies, Non-governmental organizations, buyers and sellers within each state in the zone was the targeted population of the study.

Furthermore, the study used both proportional stratified sampling and purposive random sampling techniques. First, proportional stratified sampling technique was applied to determine the number of government agencies, corporate bodies, Non-governmental organizations, buyers and sellers within each state in the North East Zone of Nigeria so as to have fair representation (Abubakar and Mutalib, 2019)

Consequently the results from the findings and the outcome would be looked into in order to attempt answering the research questions.

RESULT AND DISCUSSION

Descriptive statistic

According to Abubakar and Mutalib (2019), Table 1 below shows the characteristic and contents of research items for the study. Findings show that Food Availability has an average of 4.12 and standard deviation of 0.849 while 1.00 and 5.00 are the minimum and maximum respectively. The standard deviation shows that the data of Food Availability are far spread across the mean of the data; by implication the Food Availability of states to state within the North eastern Nigeria are not the same. This is further confirmed by the differences between the maximum and minimum (Abubakar and Mutalib, 2019).

Additionally, food Adequacy has an average of 3.15 and standard deviation of 0.828, Food Accessibility has a mean score of 3.02 and a standard deviation of 0.854 Equally, Food security has a mean score of 3.22 and a standard deviation of 0.841, finally, Sustainability has a mean score of 4.24 and a standard deviation of 0.781 (Abubakar and Mutalib, 2019).

Abubakar and Mutalib (2019) concluded that, the result on the data reveals that there are great deals among the component of food security in terms of food availability, food adequacy, food accessibility, food security and sustainability within North Eastern Nigeria.

Table 1: Descriptive Statistics (N= 498)

<i>Variable</i>	<i>Mean</i>	<i>Std Dev.</i>	<i>Min</i>	<i>Max</i>
<i>Food Availability</i>	4.12	0.849	1.00	5.00
<i>Food Adequacy</i>	3.15	0.828	1.00	5.00
<i>Food Accessibility</i>	3.02	0.854	1.00	5.00
<i>Food security</i>	3.22	0.841	1.00	5.00

<i>Sustainability</i>	4.24	0.781	1.00	5.00
-----------------------	------	-------	------	------

Source: Adopted from Abubakar and Mutalib (2019).

Correlation Analysis

Abubakar and Mutalib (2019) reported that the correlation matrix seeks to determine the relationships that exist between variables used in the research. Accordingly, Table 2 below indicated the relationship do that exists between Food security initiatives components on sustainable development. In addition, the relationship between food Availability and Food Adequacy is positive at 0.122, it meant that an increase in food Availability lead to 12.2% increase in Food Adequacy and vice versa. That was actually obvious that society with high food availability is expected to have a high Food Adequacy for its members. Also, Food Availability was positive but insignificantly correlated to Food accessibility, food security and sustainability with a coefficient of 0.049, 0.099 and 0.117 respectively. That implies that a small increase in Food Availability led to an insignificant increase in Food Accessibility, Food security and sustainability.

Food Adequacy had positive relationship with food accessibility, food security and sustainability loyalty and Bank Profitability with 0.181**, 0.469** and 0.030, respectively. It indicated that an increase in food adequacy leads to increase in food accessibility, sustainability and a high increase in food security of 46.9%

Table 2: Correlation Analysis:

<i>Variables</i>	<i>Food Availability</i>	<i>Food Adequacy</i>	<i>Food Accessibility</i>	<i>Food security</i>	<i>Sustainability</i>
<i>Food Availability</i>	1.000				
<i>Food Adequacy</i>	0.122	1.000			
<i>Food Accessibility</i>	0.049	0.181**	1.000		
<i>Food security</i>	0.099	0.469**	0.207**	1.000	
<i>Sustainability</i>	0.117*	0.030	0.079	0.064	1.000

Source: Adopted from Abubakar and Mutalib (2019)

Regression Analysis

According to Abubakar and Mutalib (2019). the regression Analysis as present in the model summary revealed that food security components (food availability, food adequacy, food accessibility and food security) on sustainability development has R square of 0.018 and adjusted R square of -0.050. The result showed that food sustainability initiative had negative and insignificant effect on sustainable development within the North Eastern Part of Nigeria. The Durbin-Watson equally showed a value of 2.165. Based on the rule of thumb as given by Hair, Black and Brown, (2010) that it ranges between 1.5 and 2.5. From the result the value fell between 1.5 to 2.5 therefore there was the presence of autocorrelation. That meant that the various values were used in the past and can be used in the present study to measure sustainable development in Nigeria.

Food security initiative has -5.0% effects on sustainable development among the state in North eastern part of Nigeria. By implication food security initiation does not exert any impact on sustainable development in North eastern Nigeria. This could account for the current and persistence activities of the insurgents in the region which resulted to destructions of property and asset of human living within the region. All government programs to ensure food for all end up in vain as the activities of the insurgent and mismanagement also attributed to the negative effect of food security initiative and sustainable development.

Table 3: Regression Analysis (Model Summary)

Model	R	R Square.	Adjusted Square	R Sig.	F	Durbin-Watson
1	0.135 ^a	.018	-.050	.897		2.165

a. Predictors: (Constant), Food security, Food Availability, Food Accessibility, Food Adequacy

b. Dependent Variable: Sustainability

Source: Adopted from Abubakar and Mutalib (2019).

Analysis of the SMART goals and the interpretation of results.

The focus and scope of this study is to attempt to assess the impact of the food security initiative in Nigerian North eastern states using the smart goals constituents as reliable and usable benchmarks by which the performance of the

food security components of availability, accessibility, utilization and stability can be scrutinized and appraised to find explanation or otherwise for the use of the global food security standards.

According to Abubakar and Mutalib (2019), there were a lot of factors that contributed to the negative result from the study, and accounted for the on-going activities of the insurgents in the region which resulted to destructions of property and human life within the region. All government programs to ensure food for all end up in vain as the activities of the insurgent and mismanagement also attributed to the negative effect of food security initiative and sustainable development. The goals of the food security initiatives as enunciated by the World Food Summit where it was stated thus “The World Food Summit, 1996, agreed that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” Globally, countries consciously or otherwise agreed/adopted the initiative and some started working to achieve the objectives of food security.

Generally, the following magnitude of human sufferings and economics mishaps where observed due to the lack of achieving the goals of the food security initiative.

These are:-

1. A severe drought that reduced a harvest or killed livestock
2. War or conflict that prevented food import to certain region
3. Availability of food was determined by price affordability.
4. Poor instrument of government policy to ensure food security
5. Due to natural calamity, total production of food grains decreased, thereby affected the adequacy of food for all
6. The broken bridge due to insurgents attack had the potential that hampered access to food or trade market.

The analysis and interpretation of the results of the study that seeks to determine the extent to which the food security components satisfy the five SMART goals attributes of specificity, measurability, attainability, realisability and time, suggest the following areas of finding:-

In the first instance, it is stated that the availability component of food security is the one which indicates that there has to be physical, social and economic access to sufficient and nutritious food by all people and at all times.

Whereas the results suggested a severe drought that reduced a harvest or killed livestock, war or conflict that prevented food import to the region of our study, and the damaged bridge due to insurgents attack had the potential that hampered access to food and trade markets.

Then, it can be reasoned from these results that the SMART goal that deals with 'specific outcome' in this instance, is not smart because it failed to be specific in the very first instance. To be specific would have been to talk of specific items, for instance to state that "to improve the economic status of the population in the insurgency ravaged communities in locality 'A, B and C' and within a defined geographical area (North zone, South zone or Central zone)".

Secondly, is the issue of accessibility. Also according to FAO (2008) and Simon (2012), accessibility refers to economic, social and physical access to food by all people at all times. That an adequate amount of food is available at the regional, national or international level does not imply it is accessible at household level. It must be locally accessible and affordable.

Whereas the results suggested that due to natural calamity, total production of food grains decreased, thereby affected the adequacy of food for all, the availability of food that was also hampered due to the insurgent's attack that led to the lack of access to food or trade market, and the availability were also determined by price affordability. Consequently, all government programs to ensure food for all ended up in vain as the activities of the insurgents and mismanagement due to poor instrument of government policy also attributed to the negative effect of food security initiative.

Then, it can be inferred from these results that the SMART goal that deals with 'measurable indicator' and 'realistic time bound' in this instance, is not smart because it failed to have a measurable indicator (e.g. poverty rate) and a realistic time bound (e.g. by the end of a year or any designated period of time) for each of the variables. When the SMART goal indicated 'accessibility refers to economic, social and physical access to food by all people at all times' it should have indicated what percentage level of increase is desired from a particular level to another within a particular time frame.

Thirdly, Abubakar and Mutalib (2019), said on the aspect of utilization which according to FAO [2008] and Simon [2012] generally refers to the pattern in

which the body makes use and benefits from the various food nutrients, the utilization is determined by food quality, nutritional values, and preparation method and storage as well as feeding pattern.

Whereas the results suggested that there was a severe drought that reduced a harvest or killed livestock, war or conflict that prevented food import to certain region, and due to natural calamity, total production of food grains decreased, thereby affected the adequacy of food for all.

Then, it can be deduced from outcomes that since there were evidential reasons to believe there cannot be the issue of utilization as a component of food security since the food was in short supply and therefore inadequate, the issue that ‘the utilization is determined by food quality, nutritional values, and preparation method and storage as well as feeding pattern’ is far-fetched in the circumstance. Therefore, ‘utilisation’ goal, in this instance, is not smart because it failed to have a measurable indicator (e.g. food quality, what level of quality? and on nutritional values, what constitutes nutritional value in food classification).

The utilization component covers preparation method and storage as well as feeding pattern. The questions that arise here is that what food type and the storage system was envisaged? As well, the feeding pattern is not clearly enunciated within this component of food security. Consequently, the utilization component is not smart because it did not address specific variables in the component.

Fourthly, is the stability component which according to FAO [2008] and Simon (2012) incorporates stability of food availability, accessibility and utilization over time.

Therefore, the standard as articulated by Simon (2012) is that all three components of availability, accessibility, and utilization must be concurrently present at all times.

Consequently, a person who has adequate access to quality food today is still considered food insecure if he has periodic inadequate access to food which may cause his nutritional level to deteriorate. Variation in weather conditions, political and economic instability, and price fluctuation are some factor that may impact on food security status (Simon, 2012).

SUMMARY, RECOMMENDATIONS AND CONCLUSION.

SUMMARY

From the previous study conducted (Abubakar and Mutalib, 2019) it was suggestive to say that the determinants of food security were actually captured and they all proved to be determinants because they all had effects on food prices relative to food security initiatives.

The analysis of data suggests a negative view point that the objectives of the food security initiative could hardly be achieved.

The findings suggest the incidence of insufficient food production due to the dearth of infrastructural facilities, civil conflicts/insecurity, which posed serious challenges to the achievement of food security.

Subsequently, it was gathered from the results of this study that:-

- The SMART goal that deals with ‘measurable indicator’ and ‘realistic time bound’ in this instance is not smart because it failed to have a measurable indicator.
- It can be reasoned from these results that the SMART goal that deals with ‘specific outcome’ in this case, is not smart because it failed to be specific in the very first instance.
- It can be deduced from outcomes of this study that since there were evidential reasons to believe there cannot be the issue of ‘utilization’ as a component of food security since the food was in short supply and therefore inadequate. The issue that ‘the utilization is determined by food quality, nutritional values, and preparation method and storage as well as feeding pattern’ is far-fetched in the circumstance, and consequently, the utilization component is not smart because it did not address specific variables of the component that would have addressed the issues of food quality, nutritional values, and preparation method and storage as well as feeding pattern.

RECOMMENDATIONS

- It was opined that the Nigeria in relation to food security in its North Eastern region should re-evaluate its strategies in implementing the food security initiative based on its peculiarities/challenges, current realities, and possibly within the global standard and time frame.
- The enabling environment must be created to achieve the desired goals based on the current realities while taking cognisance of the global standard.
- Nigeria as a country might not easily achieve the objectives of the food security initiative because it lacks the rudiments to actualise the goals and those other dynamics that are necessary to be properly constructed to serve as credible and usable yardsticks. This is by which the results can be monitored and evaluated via immediate outputs, intermediate results over the short term or terminal effects in the long term.

- There ought to be SMART goals criteria that provided a clear and objective framework for setting and managing goals.
- This study recommends that scripting objective statements could incorporate the four components of the OITT goal framework or any other similar framework as a conceptual template which might support the planners to articulate better SMART goals with good attributes and goal content.

CONCLUSION.

According to Locke and Latham's goal-setting theory, clear, specific and challenging goals can engender improved performance towards goal attainment (Locke and Latham, 2006). So it is rational to adopt that assignments designed with an incomplete or defective goal background are less likely to reach their anticipated results.

Consequently, the possibility that globally many organisations are basing their planning on non-SMART objectives should be a serious concern to all stakeholders in the food security programmes, since it implies that many food security initiatives with life-saving implication are likely to be built on them.

This is disturbing because it may mean that a series of food security programmes worldwide are implementing the initiatives with no optimism of goal accomplishment.

Writing SMART goals is fundamental to planning effective results-oriented action. Even though there are many goal-setting templates and guides, it appears that none currently offers a relevant and complete structural template to aid the construction of written objective statements that satisfy all the criteria for SMART goals.

There is, therefore, a need for plans to be designed on a framework of objective statements to which their objectives are really SMART.

Hence, the above implications raise more questions for further research in real field situations. First, to what extent is the goal framework of objective statements of food security initiatives actually SMART? Second, is it more likely that projects planned on the basis of objectives with a complete OITT goal framework or other similar schemes, for instance, will attain their desired outcomes?

These questions should lead to further research to investigate the reliability, validity and efficacy of using the OITT framework other similar schemes, as standard tools for objective setting.

Finally, programmes such as the food security initiative designed with an inadequate or defective goal framework are less likely to attain their desired outcomes because of the complexities in the different countries caused by their peculiarities/challenges, level of development and preparedness, current economic, political, and social realities All these factors invariably affect the ability of each country to operate within the global standard and time frame.

There is also no single, agreed template or standardised guidance for writing effective goal-setting objectives that could have taken cognisance of all the peculiarities in the different countries operating under the the United Nation's (UN) Food and Agriculture Organization (FAO).

Even though SMART goals are central to planning and attaining effective changes, however, many organisations fail to comply with SMART objectives writing objective statements based on a template that encompasses the concepts of, for instance, OITT (outcome, indicator, target and time frame) that could ensure that organisations work towards specific, attainable and measurable aims.

REFERENCE

- Abdullahi, A. (2008). *Food security in Nigeria: How close are we?* A paper presented at the Federal Radio Corporation's Annual Lecture- Abuja].
- Adeoti, J. (1989). *Economic crises in developing countries: The food dimension*. Ilorin Journal of Business and Social Sciences,
- Adeyeye, V.A. (1992). *An assessment of food security in Nigeria*. Final report of a study commissioned by FAO, Rome.
- Beardshaw, J, & Palfreman. (1990). *The organisation in its environment. 4th ed Pitman Publishing, London*.
- Bipp, T. & Kleingeld, A. (2011). Goal-setting: the effects of personality and perceptions of the goal-setting process on job satisfaction and goal commitment. *Personnel Rev* 40(3): 306-323.
- Bratton, J., Callinan, M., Forshaw, C., & Sawchuk, P. (2007). *Work and organizational behaviour: understanding the workplace. Palgrave Macmillan, Basingstroke*.
- Bryman, A., & Bell, E., (2007). *Business research methods. 2nd ed. Oxford University Press*.
- Centers for Disease Control and Prevention (CDC) (2008). *Evaluation briefs. Goals and objectives*. [Accessed 19 June 2017].

- Dahlsten, F., Styhre, A. & Williander, M. (2005). The unintended consequences of management by objectives: the volume growth target at Volvo cars. *Leadership & Organization Development Journal* 26(7): 529-41.
- Day, T. & Tosey, P. (2011). Beyond SMART? A new framework for goal-setting. *The Curriculum Journal* 22(4): 515-34.
- Dogondaji, M.S. (2013). *Towards mitigating the impacts of climate change on food security: a global perspective*. Academic Journal of Interdisciplinary Studies,
- Doran, G. T. (1981). *There's a SMART way to write management's goals and objectives*. *Management Review* 70(11): 35-36.
- Drucker, P. F. (1955). *The Practice of Management*. Butterworth-Heinemann, London.
- Egbuna, E.N. (2001). Food security in Nigeria: The challenges and way forward. [Paper presented at the Annual conference of The Nigerian Economic Society. Theme: Natural Resource use, the Environment and Sustainable Development, pp 307- 325]
- Ekpenyoung, S. A., & Lasisi, R. (2016). Food importation and rural economy: The challenges for food security in Nigeria. *Insights to a Changing World Journal*, 2012 [Retrieved from www.web.a.ebscohost.com/login.] [Accessed 26 March, 2016].
- Food and Agricultural Organization (FAO) (2001). *Perspective study on Agriculture Development in the Shellian Countries*. Vol. 3.
- Food and Agricultural Organization (FAO) (2008). *An Introduction to the basic concepts of food security*. In: *Food security Information for action: Practical Guides, EC-FAO Food Security Programme*.
- Fitsimmons, G. (2008). Time management part I: goal setting as a planning tool. *The Bottom Line* 21(2): 61-63.
- Ghuri, P. & Gronhaug, K. (2005). *Research methods in business studies: A practical guide*. 3rd ed. New York, Financial Times Prentice Hall
- Ginsburg, L.S. (2001). Total quality management in health care: a goal-setting approach. In Fottler, M.D., Savage, G.T., & Blair, J.D. *Advances in Health Care Management*. Volume 2. Emerald Group Publishing,
- Greenbank, P. (2001). *Objective setting in the microbusiness*. *International Journal of Entrepreneurial Behaviour and Res.* 7(3): 108-127.
- Gurkan, A.A. (1995). *The mathematics of hunger*. CERES 27(2): 31-33.
- Hart, C. (2007). *Doing a literature review: releasing the social science research imagination*. London: Sage.
- Honfoga, B.G., & Van Den Boon, J. G. M. (2001). *Food consumption patterns in Central West Africa, 1961 to 2000, and challenges to combating malnutrition*. *Food and Nutrition Bulletin*, Vol. 24(2), pp.167-182.
- Idachaba, F. S. (2006). *Strategic and Policies for Food Security and Economic Development in Nigeria*. Lagos: CBN.
- Idiku, F.O., Angba, A.O., & Ushie, M, E. (2016). Food insecurity challenges and sustainable agricultural development in Nigeria. <http://www.ssrn.com/link/OIDA-int-Journal-Sustainable-Dev.html> [Accessed 09/03/16].
- Kainth, G. S. (2010). *Food security and sustainability in India*. Retrieved from <http://www.merineews.com/article/>. [Accessed 12/10/2011].

- Kaplan, R & Norton, D. (1996) .*The balanced scorecard: translating strategy into action*. Harvard Business School Press, Brighton MA
- Locke, E. A. (2004). Goal setting theory and its applications to the world of business. *Academy of Management Executive*, Vol. 18, No. 4.
- Locke, E. A. & Latham G. P. (2002). Building a Practically Useful Theory of Goal Setting and Task Motivation. *American Psychologist*, Vol. 57, No. 9, 705–717
- Locke, E. A. (1968). Toward a theory of task motivation and incentives *Organizational Behaviour Human Performance*, Vol. 3, Issue 2, p157-189,33p.
- Medlin, B. & Green Jr, K.W. (2009). Enhancing performance through goal-setting, engagement and optimism. *Ind Manag and Data Sys* 109(7): 943-956. <https://doi.org/10.1108/02635570910982292>.
- Makinde, K.O. (2000). Measurements and determination of food security in Northern Guinea Savannah of Nigeria. *Unpublished PhD Thesis, Department Agricultural Economics, University of Ibadan*.
- Matemilola, S. & Elegbede, I. (2017). *The challenges of food security in Nigeria*. Retrieve from: www.scirp.org/journal/PaperInformation.aspx?paperID=81175 [Accessed 25th July,2018].
- Metu, A., Kalu, U.C., & Ezenekwe, R.U. (2015). Demographic pattern and sustainable development in Nigeria. In A. C. Mbanefo, A.C., & Nnonyeolu, N. Eds. *Challenges of sustainable development: A social sciences approach*. Awka, Fab Anieh Nig. Ltd, pp. 129 - 140.
- Mullins, L.J . (1999). *Management and Organisational Behaviour*. 5th ed. Financial Times/Prentice Hall, London.
- Nigeria Demographic and Health Survey, (2013). Retrieved from <http://www.microdata.worldbank.org>. [Accessed 12/03/2016].
- Ogbeiwi, O. (2017). *Why written objectives need to be really SMART*. *British Journal of Healthcare Management*. 23. 324-336.
- Olayemi, J.K. (1996). Food security in Nigeria. *Development Policy Center Policy Report 2, Ibadan*.
- Ojo, E.O., & Adebayo, F. P. (2012). *Food security in Nigeria: An overview*. *European Journal of Sustainable Development*, vol. 1(2), pp. 199-222.
- Olawepo, R.A. (2012). *Food security and challenges of urban agriculture in the third world countries, Food Production Challenges Task*
- Oseni, A.T. (2001). Demand analysis of some selected food item in Surulere local government area of Lagos state: Implication on food security. *Unpublished B.sc project department of Agricultural Economics University of Ibadan, Ibadan, Nigeria*.
- Parker, V., Magner, M., Andersch, N., Alderson, C. & Larney, A. (2003). *Transforming patient care using a clinical governance programme*. *Prof Nurse* 19(1): 24-7.
- Pritchard, R.D., Harrell, M.M., DiazGranados, D. & Guzman, M.J. (2008). The productivity measurement and enhancement system: a meta-analysis. *J Appl Psychol* 93(3): 540-67.
- Siamwalla, A. & Valdes, A. (1994). *Food security in developing countries:international issues*. IFPRI Washington D C

Simon, G.A. (2012). Food security: definition, four dimensions, history. FAO, Rome.

*Yip, A.M., Gorman, M.C., Stadnyk, K., Mills, W.G., MacPherson, K.M. & Rockwood, K. (1998)
A standardized menu for goal attainment scaling in the care of frail elders. The
Gerontologist 38(6): 735-42.*

*World Bank (1986). Poverty and Hunger; Issues and option for food security in developing
countries. A World Bank policy study, Washington.*